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THE EMERGENCY MANAGEMENT OF PATIENTS WHO HAVE EXPERIENCED SEXUAL VIOLENCE: AN INTEGRATIVE LITERATURE REVIEW

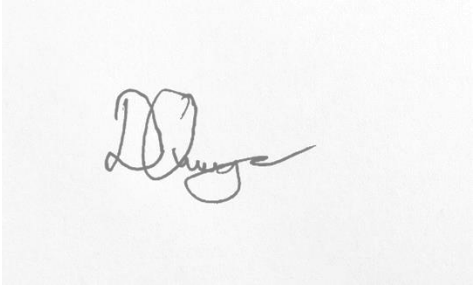
Neil Dylan Quiroga

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the Degree of Master of Science in Nursing.

Johannesburg 2023

DECLARATION

I Dylan Quiroga, declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Master of Science in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



_____

(Signature of candidate)

29th day of February 2024; in Johannesburg, South Africa

DEDICATION

In loving memory of Teresa Luisa Caneva Armstrong

1935-2017

The woman who taught me to be curious and study the world.

ABSTRACT

Background: Sexual violence is endemic in many countries, and particularly in South Africa.. Over the past few years there have been several advancements in the care for patients who have experienced sexual violence. However, the care available in resource limited settings and in South Africa, remains inconsistent and often inadequate.

Purpose of the Study: To synthesize the current evidence based practice in the emergency management of patients who have experienced sexual violence; and to review which advancements could be feasible in a resource limited setting, and in the South African context.

Methods: This study conducted an integrative literature review on the emergency management of patients who experience sexual assault, in order to synthesise the current literature. The research is structured on Whittemore and Knafl's framework, and utilizes their five stages of an integrative review: problem identification, literature search, data evaluation, data analysis, and presentation. The following databases were searched: Cochrane library, EBSCOhost (CINAHL; ERIC and MEDLINE), PubMed, ScienceDirect, Wiley online library and Psycinfo. 2142 articles were assessed fully for eligibility, and a total of 47 articles were included in the integrative review. The literature search was conducted over a period of 4 months. Thematic analysis of the 47 articles was then conducted using MaxQDA (Qualitative Coding Software). A conductive coding approach was used, based on grounded theory.

Results: Eight main themes, and thirty four subthemes, emerged from the data that spoke directly to the research question and objectives. The eight major themes were: Screening patients for sexual violence; emergency medical care for survivors; forensic care; mental health care; follow up care and services; technological aids to augment care; structural or organization aspects affecting care; and health care worker factors that affect care for survivors.

Conclusion: The study strongly recommends integrating trauma informed care into every aspect of care for survivors of sexual violence in South Africa. The study also recommends implementing: screening of patients for various forms of sexual violence; quality improvement drivers such as order sets and clinical pathways; and nurse driven innovations in pro-active follow up services and new mental health care interventions.

There remains a tremendous need in our country to improve the prevention of sexual violence; and the care and support for the many survivors.

Keywords: Emergency Care; Forensic Care; Psychological Care; Resource Limited Setting; Sexual Violence; Screening; Trauma Informed Care.

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And when I was done she wrote it for me. I love you.

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ABBREVIATIONS AND ACRONYMS

AIDS – Acquired Immunodeficiency Syndrome

ASD – Acute Stress Disorder

CBT - Cognitive Behavioural Therapy

CDC – Centre for Disease Control and prevention

CPS – Child Protective Services

CSEC – Commercial Sexual Exploitation of a Child

CSNWP - Clinically significant new or worsening pain

DNA - Deoxyribonucleic acid

ED – Emergency Department

ENA - Emergency Nurses Association

GBV – Gender Based Violence

GISS - Genital Injury Severity Scale

HIV – Human Immunodeficiency Virus

HPV – Human Papilloma Virus

IAFN - International Association of Forensic Nurses

IPV – Intimate Partner Violence

NAAT - Nucleic Acid Amplification Tests

NHS – National Health Service

PEP – Post Exposure Prophylaxis

PTSD – Post Traumatic Stress Disorder

RCT - Randomized Control Trial

SAEK - Sexual Assault Evidence Kit

SAMFE - Sexual Assault Medical Forensic Examination

SANC – South African Nursing Council

SANE - Sexual Assault Nurse Examiner

SAPS – South African Police Service

SART – Sexual Assault Response Team

STI – Sexually Transmitted Infection

STS - Secondary Traumatic Stress

TCC - Thuthuzela Care Centres

UNICEF - United Nations International Children's Emergency Fund/ United Nations Children's Fund

USA – United States of America

WHO – World Health Organisation

CHAPTER ONE: OVERVIEW OF STUDY

1.1 Introduction

Chapter one serves as the introduction to the study. A background of the emergency management of sexual violence is discussed. This is explored in the global context, low and middle income countries, and South African context. The study's problem statement, research question, and research objectives are presented. Operational definitions for key concepts and terms are defined. Then the research study's methodology and format are described. Lastly, rigor in an integrative review and ethical considerations are discussed.

1.2 Background

"Violence against women is endemic in every country and culture, causing harm to millions of women and their families, and has been exacerbated by the COVID-19 pandemic" according to Dr Tedros Ghebreyesus, Director General of The World Health Organization (WHO) (World Health Organization, 2021a). Approximately 26% of all women have experienced physical or sexual violence from a spouse or partner, and about 6% of women have been sexually assaulted by someone other than a close intimate partner. This amounts to an estimated 736 million women worldwide who have experienced physical or sexual violence in their lifetimes – close to 1 in 3 women (World Health Organization, 2021b). Intimate partners are the most commonly reported perpetrators of sexual violence (Gilmore *et al.*, 2022a)

Low- and middle-income countries, as defined by the United Nations, have disproportionately high levels of intimate partner violence. Sub-Saharan Africa in particular reported that 20% of women experienced Inter Partner Violence in 2018, with lifetime prevalence rates of 33% (World Health Organization, 2021b). Yet many cases of sexual violence go unreported. In many countries there remains widespread stigma, victim blaming and revictimization around sexual violence, negative repercussions for disclosure of sexual violence, along with socioeconomic barriers to care and reporting after sexual assault.

Rape and sexual assault constitute a serious social issue and public health burden in South Africa. Yet studies have shown vast underreporting of rapes and sexual assault in South Africa, with as many as 85% of rapes going unreported nationally (Jewkes and Abrahams, 2002). It has been widely proven that sexual violence leads to a cascade of negative health consequences and conditions, both physical and psychological. These consequences range from the immediate effects, which may even be life threatening, to long term medical morbidity and psychological conditions (Sadler *et al.*, 2000; Maniglio, 2009; Jina and Thomas, 2013; Patel *et al.*, 2013; Sutherland, Fantasia and McClain, 2013; Bragesjö *et al.*, 2020). Sexual violence is intertwined with many societal ills and affects many vulnerable groups in our society – including children. Like sexual violence, child sexual abuse has been found to be pervasive in all countries, cultures and socioeconomic groups (Singh, Parsekar and Nair, 2014) – including in South Africa (Ward *et al.*, 2018).

There have, however, been a host of advancements in the emergency management for patients who have experienced sexual violence. Emergency Departments (EDs) offer a good point of entry for sexual violence survivors, as they can offer medical, forensic, and psychological care. They also serve as a resource for referring patients to long term legal and psychological care (Patel *et al.*, 2013; Gilles *et al.*, 2019; Chalmers *et al.*, 2022). ED nurses are often the first point of call for patients who have experienced sexual violence, yet many express that they feel unprepared for the task (Campbell, Patterson and Lichty, 2005a).

Yet, as studies have shown, specialized training in the care of victims of sexual assault offered to ED nurses has improved the standard and consistency of medical care, as well as the psychological recovery of survivors (Campbell, Patterson and Lichty, 2005a). Additional training has also resulted in the quality of forensic evidence collected, which has led to increased arrests and prosecutions (Nugent-Borakove *et al.*, 2006).

The American Emergency Nurses Association (ENA) and the International Association of Forensic Nurses (IAFN) argue that patients who have experienced sexual violence should be cared for by emergency nurses and physicians with expert knowledge and clinical competencies. They should be familiar with national and local legislation, frameworks and policies relating to the management of sexual violence. Theses emergency care practitioners should also have clinical competencies in medical

and forensic examinations. The ENA and IAFN also advocate for continuous education for emergency nurses to fulfil these requirements (Bush, 2017).

In the USA, the development of Sexual Assault Nurse Examiner (SANE) and Sexual Assault Response Teams (SART) programs started in the mid-1970s, and they have proliferated exponentially since. They have demonstrated improved outcomes in multiple measures of patient care, forensic evidence collection and prosecution rates (Linden, 2011; Greeson and Campbell, 2013; Office for Victims of Crime, 2016).

In spite of these international advancements, emergency management for survivors of sexual violence in resource-limited settings remains inadequate. Studies have shown that in many resource-limited contexts, there remains a lack of access to emergency care, clear policies prescribing standardized care, and a lack of adherence to well established best practices (Kilonzo, 2009; Ranney *et al.*, 2011; Dawson *et al.*, 2014) – and this remains the case in South Africa.

Since democratization in the 1990s, several legislative and policy steps have been made to bring South Africa in line with international declarations to address GBV, and international standards around the provision of legal, medical, and psychosocial care after experiencing violence (Naidoo, 2013; Sibanda-Moyo, Khonje and Brobbey, 2017).

Yet numerous large studies have shown that the emergency management of survivors of sexual violence remains inconsistent and inadequate (Christofides *et al.*, 2005; Vetten *et al.*, 2008; Shukumisa, 2013). A targeted local study demonstrated that some nurses are often unfamiliar with the medical and forensic care considered as best practice in post-sexual assault care. It also illustrated how nurses face persistent staff shortages, which often forces them to practice outside of their scope or entirely outside of their profession, and endure a critical lack of resources, such as essential medicines and referral systems to social workers or psychologists (Skosana, 2016).

The South African Nursing Council (SANC) is the regulatory board set up by the Nursing Act to regulate nursing practice and standards in South Africa. The SANC scope of practice for a Registered Nurse makes no mention of care of the forensic patient, nor the care of a survivor of sexual violence. SANC has stipulated that as part of the scope of practice of emergency nurses, they must be able to "identify, manage and pursue across all aspects" the care of forensic patients, including the collecting of forensic evidence (South African Nursing Council, 1991, 2020).

Currently there are no higher education institutions accredited by SANC offering specialist education and training in forensic nursing (SANC, no date). There remains a dire need of education programs and training programs in this field, specifically in the care of survivors of sexual violence. The first step towards realising this is the formal recognition of forensic nurses as clinical nursing specialists, and the formalisation of their scope of practice, curriculum, and role in the health care system (Duma and De Villiers, 2014; Sebaeng and Duma, 2017).

1.3 Problem Statement

Rape and sexual assault are endemic problems in South Africa. Patients who have experienced sexual violence often present to emergency care facilities, such as an emergency department or crisis center, as a first point of contact. Despite the tremendous need, the care given to patients who experience sexual violence in South Africa has been shown to be inconsistent and inadequate. In South Africa, and in other resource limited countries, there remains a lack of access to evidenced based care, physical resources, and referral services for psychological treatment and counselling. There also remains a significant lack of training and preparation of nurses, doctors, and first responders (Christofides *et al.*, 2005; Vetten *et al.*, 2008; Shukumisa, 2013). Globally there has been a lot of research done around the emergency management of patients who experience sexual violence. There have been significant advancements and innovations in the holistic care for survivors; development of the trauma informed care approach, and the specialized training of nurses and multidisciplinary teams. . Limited research has been conducted on how to apply these advancements and innovations to a resource limited setting, and in particular to the South African context.

1.4 Purpose of the study

The purpose of this study was to explore the research literature around the emergency management of patients who have experienced sexual violence. From the literature the study formulates a set of advancements and innovations to care, which have been shown to improve patient outcomes or satisfaction. These advancements and innovations were then critiqued on their feasibility in a resource limited setting, and specifically to the South African context with its unique challenges.

1.5 Research Questions

In the emergency care setting, what advancements and innovations to medical, forensic, psychological, and legal care have been made for patients who have experienced sexual violence?

Which of these advancements and innovations to care are replicable in a resource limited setting?

Which of these advancements and innovations to care would be replicable in the South African context?

1.6 Research Objectives

To compile and distil the current research on the emergency management of patients who have experienced sexual violence.

To synthesize the findings into a set of important advancements and innovations in the emergency management of patients who have experienced sexual violence.

To examine which practices and interventions are applicable to a resource limited setting.

To examine which practices and interventions are applicable to the South African setting.

1.7 Operational Definitions

Best Practices: In the clinical health care setting it is a set of interventions, treatments or behaviours that have been shown to improve patient outcomes through research (Nelson, 2014). They must be context applicable, by using the resources available and being sustainable. They should also be replicable in other similar contexts (WHO Regional Office for Africa, 2008).

Emergency Care: WHO defines emergency care as the first point of contact for people presenting with acute illness or injury. It involves acute care for adults and children, and for trauma, medical, surgical, and obstetric emergencies. Critical to emergency care is the integration of early recognition,

resuscitation or treatment, disease surveillance, and secondary prevention (The World Health organization, no date).

Emergency Care Nurses: Nurses working in the acute care setting; such as the emergency department, casualties, crisis centers, or pre-hospital.

Emergency Care Setting or System: Emergency Healthcare services that include Emergency Departments, prehospital emergency services such as paramedics and fire fighters, and clinics and community health care centres (Australasian College for Emergency Medicine, 2021).

Emergency Department: A unit linked to, and integrated with, an operational hospital; which is designed and staffed to offer 24 hour emergency care. It must have the capacity to be able to receive and triage patients; and be able to offer the acute medical care and to stabilise their medical condition (Australasian College for Emergency Medicine (ACEM), 2014; Australasian College for Emergency Medicine, 2021). Often referred to as an Emergency Department, Emergency Room, Accident and Emergency Room, or Casualty (Sakr and Wardrope, 2000).

Low and Middle Income Countries (LMICs): A World Bank classification based on a country's Gross National Income (GNI). Low and middle-income economies are defined as having a GNI per capita of between $1,136 and $4,465 (The World Bank, no date). This measure is often used as a proxy for classification of resource limited countries or developing countries.

Sexual Violence: "Any sexual act, attempt to obtain a sexual act, or other act directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting. It includes rape… attempted rape, unwanted sexual touching and other non-contact forms" (World Health Organization, 2021b).

Rape: Any unlawful and intentional act of sexual penetration without consent, irrespective of gender or form of penetration (Government of Republic of South Africa, 2007).

Resource Limited Setting: A term used in public health and international development research that includes low-income and lower middle income countries (LMICs), as per the World Bank Income Status definition (Leonard, de Kock and Bam, 2020; The World Bank, no date).

Sexual Assault: Any unlawful and intentional act of non-consensual sexual violation, or the treat of sexual violation (Government of Republic of South Africa, 2007).

1.8 Overview of Research Methodology

The study utilizes an integrative literature review as its design. Integrative reviews are a form of research reviews used for research synthesis. Research synthesis is the collection and distilling of all relevant studies done on a topic or area of study. This is critical in order to build on existing knowledge, strengthen findings, and advance practice and policy (Whittemore et al., 2014).

Integrative reviews have increased in popularity and use, as their ability to integrate qualitative and quantitative data allows them to explore complex healthcare issues more comprehensively. This makes integrative reviews important for the improvement of evidence based practice and health care policy, particularly in nursing (Whittemore and Knafl, 2005; Webb and Roe, 2007; Grove, Burns and Gray, 2020).

This methodology is relevant to the study, as it seeks to review the diverse and complex research done on the emergency management of sexual violence. The research explores medical, forensic, and psychosocial care of the patient who has experienced sexual violence; the roles of emergency departments and emergency care programs; the role of nurses in emergency treatment of patients who experience sexual violence; as well as the health care systems and capabilities in resource limited settings and in South Africa specifically.

In 2005, Whittemore and Knafl proposed a framework for the integrative review that aimed to standardize the methodology; in order to enhance rigor, and ensure reliability and validity in the research process (Whittemore and Knafl, 2005). They proposed five stages of an integrative research review: “a problem formulation stage; a literature search stage; a data evaluation stage; a data analysis stage; and a presentation stage” (Cooper, 1998, cited in Whittemore and Knafl, 2005). This study employs this methodological framework, which will be further addressed in Chapter 3.

In addition, this study utilizes the John Hopkins’ Research Evidence Appraisal Tool for qualitative and quantitative studies (Dang *et al.*, 2021; © 2022 Johns Hopkins Health System/Johns Hopkins School of

Nursing). Evidence Appraisal tools are recommended in integrative reviews, as a way to assess quality and rigor of the articles included in the review.

1.9 Layout of the Integrative Review

In keeping with the methodological framework of Whitmore and Knafl's integrative review, this research report chapters are structured as follows:

Chapter 1: Overview of the Study

Chapter 2: Problem Identification

Chapter 3: Integrative Literature Search

Chapter 4: Data Evaluation

Chapter 5: Data Analysis

Chapter 6: Presentation

1.10 Rigor in Integrative Reviews

The broad frame of the integrative review has the risk of introducing bias, subjectivity, and lack of reliability and validity. Some key principles when conducting an integrative review must be adhered to in order to preserve the rigor of the study. Because integrative reviews can include qualitative and quantitative data, principles from both these methodologies are used to establish rigor. The core tenets of ensuring reliability and validity in an integrative review include: using a systematic methodology, critical appraisal of the studies included, and transparency in all decision making and processes followed (Whittemore, 2007).

Whittemore and Knafl's broadly adopted five stages of the integrative review was used, in order to establish transparency and replicability. It is also intended to minimize reviewer bias, and enhance reliability and validity of the process (Whittemore and Knafl, 2005; Whittemore, 2007).

Consultation and consensus building was done with two other researchers in order to minimise selection bias in the data collection phase. The searching of five electronic databases, and reviewing of 2142 original articles, also enhances the rigor of the study.

1.11 Ethical Considerations

Data collection for this integrative review did not involve human subjects. Data collection was done using publicly accessible documents and research articles, without the use of any sensitive or private information. Sources were explicitly referenced, adhering to the principles of intellectual property and academic honesty. An ethics waiver was applied for and granted by the Faculty of Health Sciences, see Annexure 7.

The correct procedures for research at the University, and within the faculty of Health Sciences, were followed throughout. This included the formulation of a proposal. This proposal was then presented for approval to the nursing department, and from the faculty of health sciences. Constructive feedback was given, and the research was then started after satisfactory corrections were made. Approval for the research title was granted from the Faculty of Health Sciences, see Annexure 8. The research process was an interactive and iterative process, with close consultation with the research supervisor throughout.

There are several guiding ethical principles that were adhered to. Patient first language is very important in clinical settings, and can affect the way patients are seen and treated (Crocker and Smith, 2019). Therefore this research refers to patients who have experienced sexual assault or rape; and not sexual assault patients or rape patients. This is done to promote a humanistic and holistic outlook toward the survivors of sexual violence, and on this research.

1.12 Summary

Chapter one is an introduction to the study. It provides a brief overview on the relevant literature to introduce the topic of the emergency management of sexual violence. It presents the research question, purpose of the research, and research objectives. It then introduces Whittemore and Knafl's structural framework for an integrative review, which is used to structure this research paper and its chapters. It gives a brief overview of the research's methodology, and briefly addresses rigor in the research process, and ethical considerations.

CHAPTER TWO: PROBLEM IDENTIFICATION

2.0 Introduction

Chapter Two reviews the current literature on sexual violence; the epidemiology, the history of care and advancements in the field, the context of low resource settings, the South African context including current legislation and government policies, and the areas where there is need for improvement.

2.1 Defining the Problem

Violence against women and children has been showed to be endemic in all regions of the world, across all socio-economic levels, and in all cultural contexts. It has been identified globally as a serious public health issue. It both directly leads to injury, illness, and death; as well as having negative effects on the determinants of health (World Health Organization, 2021a, 2021b).

The WHO defines sexual violence as: “any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work” (Jewkes, Sen and Garcia-Moreno, 2002).

The WHO further describes three types of sexual violence commonly recognized: Sexual violence involving intercourse or rape, direct contact or sexual assault without intercourse, and non-contact sexual violence (World Health Organization, 2014a). Most countries and legal systems also differentiate between rape and sexual assault; rape being defined as nonconsensual sexual penetration of the vagina, anus or mouth; and sexual assault defined as any unwanted or nonconsensual sexual contact or experience (Tarquinio *et al.*, 2012; Scannell *et al.*, 2018; Walsh *et al.*, 2021).

Sexual assault and sexual violence are often spoken about in the context of Intimate Partner Violence (IPV) and Gender Based Violence (GBV). Intimate Partner Violence is defined as physical or sexual violence experienced by a partner or former partner, after the age of 15 (World Health Organization, 2014a). Gender Based Violence is defined as “...any act (of gender-based violence) that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life” (United Nations, 1993).

Approximately 26% of all women have experienced physical or sexual violence from a spouse or partner; and about 6% of women have been sexually assaulted by someone other than a close intimate partner. This amounts to an estimated 736 million women worldwide who have experienced physical or sexual violence in their lifetimes, close to 1 in 3 women (World Health Organization, 2021b). Intimate partners are the most common reported perpetrators of sexual violence (Gilmore *et al.*, 2022a).

Low- and Middle-income countries, as defined by the United Nations, have disproportionately high levels of intimate partner violence. Sub Saharan Africa in particular reported that 20% of women experienced Inter Partner Violence in 2018, with lifetime prevalence rates of 33% (World Health Organization, 2021b).

In South Africa intimate partner violence is endemic and represents a significant burden of disease in our country. GBV not only contributes to incidence of trauma and physical injury, but also puts women at higher risk of Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS), other sexually transmitted infections, depression, suicidality, and posttraumatic stress disorder. Around 1 in 4 (26%) women in South Africa have admitted to experiencing Inter Partner Violence; and about a third (37%) of these reported injuries as a result (National Department of Health *et al.*, 2019).

Levels of reported isolated sexual violence, not including physical violence, are remarkably low worldwide, and particularly in low- and middle-income countries. Worldwide it is estimated that 6% of women experience sexual violence outside of their intimate partners, and only 5% in Least Developed Countries (World Health Organization, 2021b). However, it is proven that many cases of sexual violence go unreported. In many countries there remains pervasive stigma, victim blaming and revictimization around sexual violence, negative repercussions for disclosure of sexual violence, as well as socioeconomic barriers to care and reporting after sexual assault. Global disagreements on the definition of sexual violence, as well as poor surveillance of sexual violence outside of IPV also contributes to underreporting. Low prevalence figures of sexual violence should therefore be interpreted within this context, and true prevalence rates are assumed to be much higher. We also know that issues and factors associated with Intimate Partner Violence and Gender Based Violence are closely linked to the same determinants of sexual violence. High prevalence of IPV and GBV should therefore be an indicator of high prevalence of sexual violence within a country (World Health Organization, 2021b).

In the US surveillance of sexual violence and rape is done regularly and on a large scale by the Centers for Disease Control and Prevention (CDC). In such circumstances 54.3% of women reported experiencing some form of sexual violence in the lifetime, and 26.8% reported being the survivor of rape or attempted rape. The same report also found that men in the US also experience sexual violence in large numbers; 30.7 % experiencing sexual violence in their lifetime, and 3.8% being survivors of rape or attempted rape. This equates to more than half of women and close to one in three men having experienced sexual violence (Basile *et al.*, 2022). In Australia 17% of women report lifetime sexual violence (Jancey, Meuleners and Phillips, 2011). These figures reinforce that funding and programs for the surveillance of sexual violence and rape are important first steps in truly understanding the global scale of the problem, especially in low- and middle-income countries.

Rape and Sexual Assault constitute a serious social issue; as well as a public health burden in South Africa. However, accurate and nationally representative statistics are not widely available, and hard to produce in our context (Dartnall and Jewkes, 2013; Mashishi, 2020). A handful of smaller localized studies have found distressingly high prevalence rates of sexual violence in various provinces and cities. These studies found that 25.3% of women in Gauteng have reported being survivors of rape (Gender Links & South African Medical Research Council, 2011). 7% of women in the Western Cape have been survivors of rape from someone other than their partners (Chipatiso *et al.*, 2014). And more than 40% of women in Cape Town experienced sexual assault (Bruce *et al.*, 2008). These studies are important in that they illuminate the problem in these localities, but they are not generalisable to the country at large, and do not include all forms of sexual violence (Wilkinson, 2016). However these studies do indicate that the true prevalence of sexual violence in the country is troublingly high.

The South African Police Force, in line with international best practices, have started to publish annual incidence rates of reported rape and sexual violence. From April 2019 to March 2020, The South African Police Service (SAPS) reported 53293 sexual offenses, including 42289 rapes and 7749 sexual assaults. The incidence rate for rape alone is 70.8 sexual offenses per 100’000 South Africans (South African Police Service (SAPS), no date b, no date a).

However, crime statistics are not good indicators of the pervasiveness of sexual violence. Many studies have shown vast underreporting of rapes and sexual assault in South Africa, with as many as 85% of rapes going unreported nationally (Jewkes and Abrahams, 2002; Bruce *et al.*, 2008; Sibanda-Moyo,

Khonje and Brobbey, 2017; Ajayi, Mudefi and Owolabi, 2021). Barriers to reporting of these crimes include lack of confidence in the justice system and health services; as well as shame, revictimization, taboos and social stigmas, and not recognizing rape or sexual violence within a marriage or relationship as a criminal act (Bruce *et al.*, 2008; Naidoo, 2013; Vetten, 2014).

Another indicator of the high prevalence of sexual violence in our country are numerous studies where male participants openly admit to perpetrating acts of sexual violence in their lifetime, and many admitting to multiple acts of sexual violence. A large study by the South African Medical Council, conducted in KwaZulu Natal and the Eastern Cape, found that 27.6% of male respondents admitted to having perpetrated rape in their lifetime, while 46.3% of those respondents admitted to having raped more than one girl or women in their lifetime (Jewkes *et al.*, 2009). Smaller studies have found similarly high rates of sexual violence perpetration among males in Gauteng and the Western Cape (Gender Links & South African Medical Research Council, 2011; Chipatiso *et al.*, 2014).

2.2 Special Populations

Sexual Violence is intertwined with many societal ills and affects many vulnerable groups in our society. Among these vulnerable population groups requiring special consideration when are: children and adolescents (child sexual abuse), women in the military, women on universities and college campuses, gender and sexual orientation minority groups, racial and ethnic minorities, survivors of sex trafficking, the elderly, survivors of rape within a marriage, survivors of sexual violence online, male survivors of sexual violence, homeless persons, persons suffering from substance misuse and addiction, women and children in conflict areas, and refugees or displaced persons (Linden, 2011; Gilmore, Davidson, *et al.*, 2019a; Bragesjö *et al.*, 2020; Gilmore *et al.*, 2021; Chalmers *et al.*, 2022).

The World Health Organization defines child sexual abuse as "…the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society." This can occur between an adult and a child, or between two children; if there is an age, developmental, or power differential in the relationship between them (World Health Organization, 2003).

Much like sexual violence in general, child sexual abuse is difficult to quantify in many countries and settings. However, like sexual violence, it has been found to be pervasive in all countries, cultures and socioeconomic groups (Singh, Parsekar and Nair, 2014). Global studies have found as many as 7.9% of males and 19.7% of females having experienced sexual abuse before the age of 18, with studies in Africa recording the highest prevalence rates of 34.4% (Pereda *et al.*, 2009). Studies in South Africa have found similarly alarming statistics, with the largest national study indicating prevalence rates of 14.61% for girls and 9.99% for boys (Stevens and Lubaale, 2015; Meinck *et al.*, 2016; Ward *et al.*, 2018).

The Constitution of South Africa explicitly protects every child from "maltreatment, neglect, abuse or degradation" (Proudlock, Mathews and Jamieson, 2014). The Children's Act 38 of 2005; The Criminal Procedure Act 51 of 1977; Sexual Offences Act 32 of 2007; and Child Justice Act 75 of 2008; provide the legal definition of sexual violence against children and adolescents, as well as establishing the legal framework for responding to such violence. They also describe the medical and social services and support that should be offered to children who are survivors of sexual violence (Proudlock, Mathews and Jamieson, 2014).

Sex trafficking is a complex term that usually incorporates the phenomena of modern sexual slavery, commercial sexual exploitation, commercial sexual exploitation of a child (CSEC), domestic minor sex trafficking, and sex trafficking of minors (Reap, 2019). It is defined by The United States Government as, "The purchase, sale, securing, recruitment, harboring, transportation, transfer or receipt of a person for the purpose of a commercial sex act" (*Trafficking Victims Protection Act of 2000*, 2000).

Children and adolescents are at highest risk for sex trafficking. Studies have shown that a third of human trafficking victims are children, and that most victims of sex trafficking are first trafficked between the ages of 12 and 16 (Greenbaum *et al.*, 2015). Commercial sexual exploitation of children (CSEC) is an issue that often overlaps with sex trafficking. It is defined by the US Department of Justice' as, "…crimes of a sexual nature committed against juvenile victims for financial or other economic reasons.… These crimes include trafficking for sexual purposes, prostitution, sex tourism, mail-order-bride trade and early marriage, pornography, stripping, and performing in sexual venues such as peep shows or clubs" (Office of Juvenile Justice and Delinquency Prevention, 2014). This definition has also been expanded to include online and technology based forms of sexual exploitation, as well as survivor

sex where a child exchanges sex for “food, shelter, drugs, or protection from any person” (Clayton, Krugman and Simon, 2013; Office of Juvenile Justice and Delinquency Prevention, no date).

Other risk factors for sex trafficking and commercial sexual exploitation of children (CSEC) include: Runaway, homeless, or thrown-away youth – children who are kicked out of their household; children with a history of sexual abuse, physical abuse or neglect; children from dysfunctional families such as caregiver substance misuse, caregivers with untreated psychiatric conditions, intimate partner violence within the household, or criminality within the household; children who have prior history with the juvenile justice system or child protective services (CPS); and children who are lesbian/gay/bisexual/transgender or questioning (Greenbaum *et al.*, 2015).

There are also many socioeconomic and structural factors associated with commercial sexual exploitation of children. Communities with high prevalence of crime, adult prostitution, or poverty are seen as susceptible to CSEC. Regions with young transient male populations such as military bases, truck stops, conventions centres, large sporting events are also breeding grounds for CSEC. Countries with political upheaval or widespread corruption also tend to foster CSEC. Lastly, destructive societal attitudes, such as: harmful gender norms and stereotypes, the over sexualization of girls, and the glorification of pimp culture; are also considered social determinants for sex trafficking and exploitation of children (Greenbaum *et al.*, 2015; Hurst *et al.*, 2021). These risk factors are important in the context of screening youth for sex trafficking in the healthcare setting like an emergency department or primary health care facility.

Sex trafficking in South Africa is considered a serious issue, with the country being identified as a source of trafficked persons, a transit country for the movement of trafficked persons, and a destination for trafficked persons, and subsequent setting for sexual or labour exploitation. It has been stated by the United States Department of State and various stakeholders that the South African government’s response to sex trafficking has been inadequate (United States Department of State, 2013; Gould, 2014). However national studies and research on the actual scope and nature of the problem are minimal, and there is some dispute over how the issue has been framed (Gould, 2014). Further large-scale research is needed, but it is generally accepted that sexual exploitation affects many women and children in our country, with United Nations International Children's Emergency Fund (UNICEF) estimating that between 28 000 and 30 000 children aged 10 to 14 are exploited for sex work in South Africa (van

Niekerk, 2018). Even if the prevalence of sex trafficking is much smaller than previously thought, the devastating impact on those affected, both physically, psychologically, and from a humanistic perspective, means that it should warrant attention as a country and by healthcare practitioners (van Niekerk, 2018). In 2013 the South African government passed the Prevention and Combating of Trafficking in Persons Act 7 of 2013, in an effort to abide by their international obligations. The Act defines human trafficking, and establishes legal recourse to punish and prosecute human traffickers, as well as provide protection and assistance to victims of human trafficking (South African Government, 2015).

2.3 Effects of Sexual Violence

It has been widely proven that sexual violence leads to a cascade of negative health consequences and conditions, both physical and psychological. These consequences range from the immediate effects, which may even be life threatening, to long term medical morbidity and psychological conditions (Sadler *et al.*, 2000; Maniglio, 2009; Jina and Thomas, 2013; Patel *et al.*, 2013; Sutherland, Fantasia and McClain, 2013; Bragesjö *et al.*, 2020).

Sexual assault often occurs within the context of other forms of abuse, such as physical abuse in intimate partner violence, and neglect with sexual abuse in children. The health consequences and sequalae of survivors of sexual violence will therefor overlap with the consequences of physical abuse, psychological abuse, and neglect (Jina and Thomas, 2013).

2.3.1 Physical Effects of Sexual Violence

Sexual abuse and chronic mistreatment of children has been well documented as having multiple and diverse detrimental effects on health of the adult, from respiratory diseases to ischemic heart disease; with some research even suggesting it can affect the offspring of survivors through epigenetic changes in the survivors DNA. Breaking the ongoing reoccurrence of child sexual abuse as soon as possible, and offering supportive care, is imperative for better health and quality of life outcomes in adulthood (Hoedeman *et al.*, 2021).

The most serious of medical outcomes post sexual violence is death (Jina and Thomas, 2013). The United Nations defines femicide or feminicide as: “the intentional murder of women and girls because of their gender” (United Nations Office on Drugs and Crime and United Nations Entity for Gender Equality and the Empowerment of Women, 2022). One of the key indicators of femicide or gender related killings is if sexual violence was perpetrated before and/or after the killing (United Nations Office on Drugs and Crime and United Nations Entity for Gender Equality and the Empowerment of Women, 2022). Women who have been sexually assaulted are at greater risk of femicide, with even higher risk than women who have experienced physical violence alone (Jina and Thomas, 2013). Small studies in South Africa have shown that women who experience sexual assault are at high risk, 1.2%, of what is termed rape homicide. This is a much higher proportion than international figures (Jewkes and Abrahams, 2002).

Acute injuries from sexual violence are often divided in medical literature as either genital or extragenital injuries. The most severe of extragenital injuries includes fractures, orbital injuries, strangulation, skull fractures, and traumatic brain injuries, all of which require immediate medical assessment and intervention, most commonly in an emergency department or crisis centre (Klasen *et al.*, 2022). Minor injuries may not be medically important but are immensely significant in the forensic care rendered to the patient. A thorough and systematic head to toe assessment should be done, and all contusions, abrasions, bite marks, lacerations, incisions, and penetrating wounds should be documented. Documentation should include size, location, and description of injuries (Crane, 2013).

Strangulation is of particular concern in survivors of sexual violence. Sexual violence has been shown to be closely associated with strangulation. Strangulation in sexual violence is of particular concern as it has been linked to serious and life threatening traumatic injuries, including: thrombosis or embolism of carotid arteries; fracture of the larynx, hyoid bone, tracheal rings or thyroid cartilage; loss of consciousness; cerebral hypoxia; airway obstruction secondary to laryngeal oedema; ischemic and haemorrhagic strokes; respiratory failure secondary to pneumothoraces, pneumopericardium, pulmonary oedema or delayed pneumonia; thyroid storm; anoxic encephalopathy; and vertebral and spinal cord injuries (Zilkens *et al.*, 2016; De Boos, 2019). Survivors of sexual violence should be screened for strangulation, and positive screen should trigger specific emergency department protocols. These should include investigations such as computerized tomography of the brain and angiogram, as well as short stay admission to monitor for delayed progression of symptoms. These patients are also at higher risk of

homicide and escalating violence, especially when strangulation occurs within the context of IPV, and therefor require more urgent social worker or protective agency involvement to secure their safety (Zilkens *et al.*, 2016; Scannell *et al.*, 2018; De Boos, 2019)

Genital injuries are common in cases of sexual assault, with incidence rates as high as 50-90% in recent studies (Sommers, 2007). Technological advancements have made it easier to identify and document genital injuries. These advancements include staining techniques, which highlight injuries to the examiner; and colposcopy - the use of a magnifying instrument with a light source - and in some cases digital imaging and photography. The most common location for genital injuries are “fourchette (70% of those with genital injury), labia minora (53% of those with genital injury), hymen (29% of those with genital injury), and fossa navicularis (25% of those with genital injury)” (Sommers, 2007). Severe genital injuries can lead to uncontrolled haemorrhage and shock, and needs to be rapidly recognized and surgically repaired (Lopez, Focseneanu and Merritt, 2018).

A commonly accepted system for assessment of genital trauma was developed by Slaughter and colleagues in 1997, using the TEARS system, where genital injuries are classified as one of the following: tears, ecchymoses, abrasions, redness, or swelling (Slaughter *et al.*, 1997). In 2012 the Genital Injury Severity Scale (GISS) was developed, and has since been validated as an accurate tool for quantifying genital injuries, and to standardize documentation and management of such injuries (Kelly, Larkin and Paolinetti, 2017). It is very important to remember that a normal genital examination does not exclude sexual assault, or sexual abuse in children, as it has been repeatedly proven that a survivors of sexual violence often present with a normal medical examination (Lopez, Focseneanu and Merritt, 2018; Klasen *et al.*, 2022).

Sexual violence is also associated with higher prevalence of numerous negative gynaecological sequelae such as chronic pelvic pain, fibroids, recurring urinary tract infections, dysmenorrhea, painful intercourse, lack of pleasure during sexual intercourse, abnormal Papanicolaou smears, and cervical cancer (Sadler *et al.*, 2000; Jina and Thomas, 2013; Sutherland, Fantasia and McClain, 2013; Littleton *et al.*, 2023).

Long term reproductive health and sexual behaviour has also been shown to be negatively affected by prior experiences of sexual violence. Women who have reported prior sexual violence also have increased rates of sexually transmitted infections (STIs), unplanned pregnancies, and pregnancy

terminations, rates of unprotected sex, exchanging sex for survival needs, and further sexual revictimization in adulthood (Kalichman and Simbayi, 2004; McFarlane *et al.*, 2005; Jina and Thomas, 2013; Sutherland, Fantasia and McClain, 2013; Littleton *et al.*, 2023).

Sexual violence can also lead directly to the transmission of sexually transmissible diseases, most commonly human immunodeficiency virus (HIV), Neisseria gonorrhoeae (Gonorrhea), Chlamydiatrachomatis (Chlamydia), Trichomonas vaginalis (Trich), herpes simplex virus, human papillomavirus (HPV), Treponema pallidum (syphilis), and Hepatitis B. Many cases of STI infection post sexual assault are asymptomatic, and so treatment plans must be provided universally. Risk for STI infection varies based on several risk factors such as time to presentation since sexual assault occurred, type of sexual violence and penetration involved, and individual risk behaviours of the assailant, which are often unknown. (Reynolds, Peipert and Beverly Collins, 2000; Girardet *et al.*, 2009; Seña *et al.*, 2015).

Survivors of rape are also at risk of unintended pregnancy related to the rape, referred to in the literature as a rape related pregnancy. Studies have projected that 2.4% or 2.9 million US women will experience a rape related pregnancy in their lifetime (Basile *et al.*, 2018). Around 5% of rapes will result in an unintended pregnancy (Holmes *et al.*, 1996), with rates as high as 26% when the rape occurs within the context of intimate partner violence (McFarlane *et al.*, 2005; Basile *et al.*, 2018). Smaller studies in developing countries have found figures of between 15-18% of rapes in resulting in unwanted pregnancies (Jina and Thomas, 2013).

Rape related pregnancies are linked to the correlates of sexual violence; restrictive gender-based norms, gender power differentials, inter partner violence, and lack of reproductive autonomy and choice. A large proportion of rape related pregnancies are the result of a rape perpetrated by an intimate partner, and most abused women report sexual violence from their intimate partners (Basile *et al.*, 2018).

Rape related pregnancies have numerous negative effects, as the woman faces retraumatisation during the pregnancy and birth, or during the elective abortion or miscarriage. The physical, emotional, and socioeconomic changes of a pregnancy serve as a constant reminder of the trauma she endured. Women who report a rape related pregnancy have been shown to have higher rates of post-traumatic stress disorder (PTSD). They also have higher PTSD scores and symptomology, higher rates of substance abuse, and higher rates of suicidality (McFarlane, 2007). Rape related pregnancies are also associated

with unwanted pregnancies, elective abortions, and poorer birth outcomes (Holmes *et al.*, 1996; McFarlane, 2007).

Sexual violence can also have direct and indirect effects on birth outcomes, as well as mother and child health measures. Studies have shown that women who have experiences sexual violence have longer second stages of labour (120 versus 55 minutes), drastically higher rates of caesarean sections (13-fold increase) and operative vaginal deliveries (10-fold increase), which are known to have less favourable outcomes for mother and child (Nerum *et al.*, 2010). Sexual violence has also been linked to post-partum ICU admissions for mother and child, stillbirths, preterm births, low birthweights, and small-for-gestational age births. It was also associated with increased substance abuse during pregnancy (Auger *et al.*, 2022).

Women who have reported sexual violence also show an increased fear of birth and requests for elective caesarean sections. Research has shown that the child birth experience, especially in the second stage of pregnancy, can cause reactivation of past sexual trauma (Nerum *et al.*, 2010; Berman *et al.*, 2021). New studies have shown that women with a history of sexual violence are at greater risk of traumatic birthing experiences, which can cause impaired mother and child bonding, post-partum depression, and childbirth-related posttraumatic stress; a new condition which is quantified with measures used to assess for PTSD after other traumas (Berman *et al.*, 2021).

Chronic Pain, often referred to as Clinically significant new or worsening pain (CSNWP) in the literature, is also positively associated with sexual violence. The development of post traumatic symptoms of increased arousal and reactivity has been shown to be linked to the development of chronic pain. In a large study done in the United States, 69% of sexual assault survivors presenting to an emergency department reported acute pain, and 41% of survivors continued to report chronic pain at their 6 week follow up (Short *et al.*, 2022). Studies have also shown that most survivors of sexual assault present with severe pain (pain score above 7), at first presentation (64%) and at one week follow ups (52%). However pain management is rarely given to survivors, as few as 13% of survivors were given pain medication (McLean *et al.*, 2012).

2.3.2 Psychological Effects of Sexual Violence

There is an extensive amount of research literature on the psychological effect sexual assault, and the immediate and long term psychological sequalae that develop as a result. Early studies in the 1970s identified two distinct phases of psychopathology following sexual assault. The initial phase was seen immediately post sexual assault and was termed Rape Trauma Syndrome, characterised by fear and self-blame, as well as somatic symptoms. The secondary phase was termed "reorganization", which was characterized by nightmares, avoidance to reminders or triggers, and increased motor activity (Dworkin *et al.*, 2017).

In 1980, post-traumatic stress disorder (PTSD) was added as a condition to the DSM III, and subsequent studies framed rape trauma syndrome and reorganization as stages of PTSD caused by sexual violence (Mason and Lodrick, 2013; Dworkin *et al.*, 2017). Rape has been shown to have a stronger association to PTSD than any other form of trauma, and about a third of rape survivors will be diagnosed as having PTSD after the assault (Möller *et al.*, 2014).

Post traumatic stress disorder is diagnosed by its three defining symptom groups. The first is the reexperiencing of the event after it has happened with intrusive symptoms such as flashbacks, nightmares, or reoccurrence of the emotions felt during the incident. The second is a state of avoidance whereby a survivor avoids places, thoughts, activities, or any reminders of the assault. This is often paired with a generalised numbing of their emotional state and detachment from the event. The third is a state of persistent arousal, which can include insomnia; anxiety, anger, or irritability; and jumpiness or increased startle reflex. These symptoms must persist for longer than a month, cause the survivor distress, and cause dysfunction in their lives (Mason and Lodrick, 2013; Möller *et al.*, 2014).

During the traumatic incident, it is common for the human psyche to react in ways that are contradictory to the fight or flight myth. Often the survivor may dissociate, in order to protect themselves physically and psychologically. Dissociative states may include; "de-realisation (a sense that the world around is not real), de-personalisation (a sense that it is not happening to 'me', rather it is occurring to someone else), and dissociation (a sense of being cut off from the actual situation)" (Mason and Lodrick, 2013). Although these mechanisms may be self-protective in the moment, they are linked to a higher risk of PTSD in survivors.

Acute stress disorder (ASD) was developed to describe these stress reactions during the first month following a traumatic event, and identify survivors who have a higher risk of developing PTSD (Bryant *et al.*, 2011). The diagnosis requires exposure to a traumatic event and then presenting with 9 or more symptoms related to intrusion, negative mood, dissociation, avoidance and arousal. These symptoms must impair function significantly and must last for more than three days and less than a month (Glasheen et al., n.d.) While presenting with ASD symptoms, can indicate a person at risk for PTSD, not all ASD sufferers go on to develop PTSD, and not presenting with ASD does not exempt survivors from PTSD (Bryant *et al.*, 2011).

Characteristics of the sexual violence itself have been shown to affect the risk of PTSD in survivors. Sexual violence perpetrated with a weapon, involving perceived threat to life or severe physical violence, that resulted in severe physical injury, or involving multiple assailants, all increase the likelihood of PTSD in survivors (Möller *et al.*, 2014; Dworkin *et al.*, 2017). Survivor characteristics and psychological history also correlate to risk of PTSD. A previous history of psychiatric treatment or diagnosis, in particular depression, increases the risk for PTSD in survivors. Previous history of trauma, especially past sexual victimization, also increases the survivors risk profile (Möller *et al.*, 2014).

There are also post sexual violence characteristics that can affect a survivor's risk of PTSD. Negative social reactions to sexual violence disclosure (Ullman and Peter-Hagene, 2014); and rape stigma, both internalised by the survivor, and external from friends, family, and one's community or society (Nöthling *et al.*, 2022); have both been shown to predict higher levels of PTSD. Negative interactions with formal support structures, i.e., the medical, legal and mental health systems and facilities, also have a detrimental effect on survivors' coping strategies and risks for PTSD (Campbell, Dworkin and Cabral, 2009; Möller *et al.*, 2014).

Recent systematic reviews have shown that sexual violence is strongly linked to a broad spectrum of psychological sequelae, not only PTSD. A meta-analysis by Dworkin et al. found that a history of sexual violence has shown to increase the risk of post-traumatic stress disorder (PTSD), suicide ideation, bipolar mood disorder, obsessive-compulsive conditions, depression, anxiety, disordered eating and image dysmorphia, and substance abuse. They found that sexual violence not only increased the risk of developing these conditions, but also worsened their severity (2017). A literature review by Turchik and Wilson found an increase in depression, anxiety, substance abuse and dependence, sexual dysfunctions,

post-traumatic stress disorder symptoms (PTSD), feelings of self-blame and shame, as well as problems with interpersonal relationships (2010).

Similar reviews have also shown sexual abuse during childhood to be equally as damaging, and associated with similar psychopathy. A systematic review done in by Chen et al. in 2010 showed childhood sexual abuse to be linked to anxiety disorder, depression, eating disorders, posttraumatic stress disorder, sleep disorders, and suicide attempts (2010).

Suicidal ideation is one of the most concerning negative mental health care effects of sexual violence, as it puts the survivor's immediate health and life at risk, and should be considered a medical emergency. Several large studies, in various contexts, have shown that sexual violence is strongly associated with increased suicidal ideation, suicide attempts, unplanned suicide attempts, and persistence of suicide ideation (Ullman and Brecklin, 2002; Stein *et al.*, 2010; Dworkin *et al.*, 2017). The occurrence of more than one incident of sexual violence, or sexual violence occurring during both childhood and adulthood, exponentially increases the risk (Ullman and Brecklin, 2002; Stein *et al.*, 2010). Studies in South Africa have reiterated these findings, that sexual violence is linked to depressive symptoms and suicide ideation in our context (Shilubane *et al.*, 2014; Gibbs, Dunkle and Jewkes, 2018).

2.4 Role of the Emergency Department

Research has shown that very few survivors report their experiences of sexual violence to formal resources such as the police, health care institutions, or mental health care practitioners. Studies have shown that as few as 8% of college students disclose their experience of sexual violence to formal support structures, while up to 86% disclosed the sexual violence to a peer (Nikulina, Bautista and Brown, 2019), while only 17 to 43% of rape survivors present for medical assessment and treatment (Linden, 2011).

However, in the event that a survivor does present for formal assistance, it is often to an emergency department. Emergency Departments in the United States see 65 000 – 90 000 sexual assault survivors each year (Patel *et al.*, 2013). Studies have also shown a large proportion of child abuse survivors (Louwers *et al.*, 2011; Hoehn *et al.*, 2018), survivors of child sex trafficking (Greenbaum *et al.*, 2015),

and survivors of all forms of trafficking (Kaltiso *et al.*, 2021), are likely to present to an emergency department first, or at some point during their victimization.

Research has shown that good quality and timeous post sexual violence care can limit physical and psychological harm experienced by survivors (Jancey, Meuleners and Phillips, 2011), whereas poor quality care can lead to secondary traumatization of the survivor (Patel *et al.*, 2013). It is important for the emergency department to provide an environment where the survivor feels physically and emotionally safe. In order to achieve this the staff must be transparent, honest, nonjudgemental, culturally sensitive, and always maintain confidentiality. Patients should be seen in an environment that maintains privacy at all time (Bush, 2017; Kaltiso *et al.*, 2021).

Emergency departments offer a good point of entry for sexual violence survivors, as they can offer medical, forensic, and psychological care. They also serve as a good resource of referrals for continuation of long term legal and psychological care (Cybulska, 2013; Patel *et al.*, 2013; Gilles *et al.*, 2019; Chalmers *et al.*, 2022). A study in Illinois further distilled these fundamentals into five key components of care, and defined them as the Comprehensive Medical Care Management (CMCM) at the point of first medical contact for survivors of sexual violence (Patel *et al.*, 2008). These five critical components include: acute medical care, crisis counselling at presentation and referral for follow up, STI prevention and treatment, emergency contraception for the prevention of pregnancy, and HIV testing and prevention (Patel *et al.*, 2008, 2013).

Due to the fact that most survivors of sexual violence, sexual abuse and sex trafficking are likely to present at an Emergency Department (Greenbaum *et al.*, 2015), it is imperative to screen patients for sexual violence, sexual abuse, and sex trafficking. The American College of Obstetricians and Gynecologists recommends screening all women for sexual violence, by asking direct questions in a nonjudgemental manner, while offering validation and appropriate referral for those who screen positive (American College of Obstetricians and Gynecologists, 2019). Survivors of sexual violence are also at greatest risk of suicidality, so should be screened for suicide ideation, and a suicide plan. For patients who screen positive, crisis intervention must be implemented to keep the patient safe (Diamond *et al.*, 2017; Gilmore *et al.*, 2020).

The medical forensic assessment, acute medical treatment, and collection of evidence is often referred to as the Sexual Assault Medical Forensic Examination (SAMFE). In 2003 the World Health Organization

published guidelines in an attempt to: standardize the SAMFE, set a basic level of medical and forensic care globally, serve as an educational tool for health care professionals, and offer guidance on the establishment of medical and forensic services required by survivors of sexual violence (World Health Organization, 2003).

Many high-income countries have developed their own guidelines in attempt to regulate and standardize the care given in their countries. For example, in the US, the Violence Against Women Act of 2005 legislated that any survivor of rape was entitled to a SAMFE at no cost to them (Gilmore *et al.*, 2022a). The US Department of Justice has published two extensive guidelines on forensic examinations for adults and adolescents (Office on Violence Against Women, 2004, 2013) and one for forensic examinations for paediatrics (Office on Violence Against Women, 2016). In the United Kingdom, Sexual Assault Referral Centres or SARCs were established in 2013 (NHS England, no date). The National Health Service (NHS) published guidelines have defined the role and scope of the SARCs, as well as prescribed the basic standard of care that each SARC must adhere to. These basic standards encompass clinical care for survivors, structural factors to ensure the best facilities and training of staff, and the mandating of interprofessional coordination so that all relevant stakeholders and viewpoints are incorporated into best practices (NHS England and NHS Improvement, 2019).

In 1998 the South African Department of Justice published their own set of guidelines, known as the National Policy Guidelines for Victims of Sexual Offences. These guidelines set to define the care and services that should be provided by the South African Police Service, the Department of Health, the Department of Welfare, Department of Justice, and the Department of Correctional Services in response to an incident of sexual violence. For health care institutions it outlines what facilities should be available to sexual assault survivors, and for health care providers it outlines the steps of the SAMFE in the South African context, as well as detailing the principles of trauma informed, and culturally sensitive care (South African Department of Justice, 1998).

2.5 Role of the Emergency Care Nurse

Emergency Care nurses are often the first to encounter and treat sexual assault victims, yet often feel ill prepared for the task (Jancey, Meuleners and Phillips, 2011). Specialized training of Emergency

Department nurses in the care of sexual assault victims has been shown to improve the standard and consistency of medical care, as well as the psychological recovery of survivors (Campbell, Patterson and Lichty, 2016). Specialized training has also been shown to increase forensic evidence collected, arrests and prosecutions (Nugent-Borakove *et al.*, 2006).

Nurses, as part of the multi-disciplinary team, have identified the importance of evidence collection, establishing clear clinical guidelines and policies within hospitals, offering culturally sensitive services to minorities and vulnerable persons, and addressing staff burnout, while caring for survivors of sexual assault (Jancey, Meuleners and Phillips, 2011). Emergency care nurses even without specialized training often have to co-ordinate care between different agencies and disciplines, and will often act as de facto case manager in the multidisciplinary team (Adams and Hulton, 2016). Due to the fact that nurses are often the first point of contact in a healthcare facility, they should play an essential part of screening for sexual violence (Moore, 2015). Emergency nurses, as well as primary health care nurses, also play a key role in community education and activism on issues of sexual violence (Krolikowski and Koyfman, 2012).

Perhaps most importantly, emergency care nurses play an essential role in establishing trauma informed care as practice in a unit or facility. Fundamental to this is cultivating a safe nurse-patient relationship, reinforcing informed consent and choice throughout the process, and the importance of believing and understanding patients' experiences (Poldon *et al.*, 2021).

2.6 Advancements in Care

There have been a multitude of advancements in the emergency management of the patient who has experienced sexual assault. These advancements include: standardized techniques for evidence collection and maintaining chain of custody, objective and extensive documentation, toxicology screening, prophylaxis for sexually transmitted infections (STIs), prevention of pregnancy, immediate crisis intervention and counselling; and the implementation of trauma informed care to limit secondary traumatization of the survivor. Formal follow ups and referral networks; for continuing medical, legal and psychological care; are also broadly enacted (Linden, 2011).

One of the major advancements in post sexual violence care in the past 40 years has been the theory of trauma informed care. Trauma informed care represents a fundamental shift in the entire framework of how we think about trauma and caring for survivors of trauma. Trauma informed care was developed out of research done on PTSD and various traumatized populations; in particular survivors of rape, shootings, war, and women who have experienced sexual or physical abuse. It is used today in a variety of settings; from social work, school and university counselling, criminal justice institutions, to substance abuse programs. On a systems based level, institutions involved in mental health care now aim to be trauma informed organizations, with trauma-informed approaches and trauma informed systems (Wilson, Pence and Conradi, 2013).

There are several defining principles of trauma informed care, which have been proposed by the international organizations and government agencies focused on research and policy advocacy in the field of trauma and PTSD (Wilson, Pence and Conradi, 2013).

The first is the maximising of physical and psychological safety of trauma survivors. This is fundamental, as survivors will not be able to engage in their treatment and recovery without it. The second principle is involving survivors in their care. This is similar in principle to patient centred care, and improves recovery by giving survivors choice, control and empowerment. Treatment plans should be discussed with survivors, in a transparent and honest way. This reduces the risk of unexpected surprises, anxiety, and secondary traumatization (Wilson, Pence and Conradi, 2013)

The third principle is educating survivors and their families or support systems on the short- and long-term consequences that trauma may have on their lives and recovery. Trauma experiences are inherently complexed, and so reactions to trauma can be very different. Survivors should be educated so that they can understand that these diverse reactions and effects are normal. Education can also strengthen resilience in survivors (Wilson, Pence and Conradi, 2013).

The fourth and fifth principles are the enhancement of survivor and family wellbeing and resilience, by reinforcing positive protective factors, and treating and reacting to harmful behaviours and factors. This requires a full assessment of the survivor to identify any cooccurring mental health disorders or substance use issues so that these can be treated. It may also encompass treating parents for secondary trauma they have experience due to their child’s trauma, or trauma of their own, in order to improve their protective capacities. The sixth principle is the enhancing of resilience and wellbeing of the staff

and multidisciplinary team involved in the system. Those who work with trauma survivors can often experience secondary traumatic stress (STS) or vicarious trauma, which can lead to a detrimental effect on the care they offer, or cause them to leave the field altogether (Wilson, Pence and Conradi, 2013)

The last principle is the collaboration with other agencies and organizations working with survivors. Coordination of services is important so that survivors don't have to relive their experiences of sexual violence with multiple interviews, multiple locations, and to multiple different people involved in the care. A single coordinated treatment plan helps to maintain a sense of control and safety to the survivor (Wilson, Pence and Conradi, 2013).

Another area that has seen significant advancements in the past forty years has been the provision of post exposure prophylaxis (PEP) to prevent human immunodeficiency virus (HIV) transmission post sexual assault; as well as the prevention and treatment of sexually transmitted infections (STIs). Recent published guidelines from the WHO in 2015 and the CDC in 2016 both recommend the initiation of antiretrovirals if a patient present within 72 hours of a sexual assault (Shipeolu *et al.*, 2020). The over thirty years the CDC has published several guidelines on the control and prevention of infectious diseases (Workowski, 2015). The risk of acquiring a STI as a result of a sexual assault is difficult to measure, but has been placed at between 2% and 14% (Patel *et al.*, 2013). The latest guidelines recommend the prophylactic treatment of chlamydia, gonorrhoea, and trichomonas for women and chlamydia and gonorrhoea for men. The standard treatment for these infections are Ceftriaxone 500mg for Neisseria gonorrhoeae, Doxycycline for Chlamydia trachomatis, metronidazole for Trichomonas vaginalis. The guidelines also recommend prophylaxis for Hepatitis B and HPV with vaccines and under certain circumstances Hepatitis B antibodies (Workowski *et al.*, 2021).

There have also been advancements in the testing for STIs with the development of nucleic acid amplification tests (NAATs). These have been shown to be more cost effective and have higher sensitivity, and comparable specificity, when compared to cultures. They also only require one swab at each site, to test for both chlamydia and gonorrhea, as compared to two swabs for cultures (Kellogg *et al.*, 2018).

Emergency contraception after sexual assault is another important advancement in care, although it can be contentious in certain political and religious contexts. The WHO does stipulates that care for survivors should include the provision of emergency contraception and standing protocols for its

dispensing (Schorn, 2005). The CDC recommends a single 30mg does of ulipristal acetate; or a single 1.5mg dose of levonorgestrel (Workowski *et al.*, 2021). However the most effective method remains the insertion of a copper IUD, which has been shown to have 99% efficacy (Choi *et al.*, 2013; Haeger, Lamme and Cleland, 2018; Workowski *et al.*, 2021). There is limited evidence that the provision of emergency contraceptive pills may have protective features against intrusive thoughts and PTSD symptoms (Ferree, Wheeler and Cahill, 2012).

The collection, processing and legal utilization of forensic evidence has dramatically improved in higher income countries. In the US, as part of the SAMFE, specialized equipment such as a colposcope and digital camera may be used (Campbell, Patterson and Bybee, 2012; Newton, 2013). Physical tools like Toluidine blue dye can also be utilized (Campbell, Patterson and Bybee, 2012). These advancements are used in the examination to look for and document microlacerations, subtle bruising, and other signs of trauma. The use of DNA amplification has led to higher yields of DNA evidence from forensic samples (Hornor *et al.*, 2012, 2022).

Research has also improved our knowledge on the timeframes within which DNA evidence can be expected to be yielded by a SAMFE. Recent studies suggest that evidence should be collected up to 48 hours after an incidence of sexual abuse in children, and up to 72-96 hours after sexual assault in adolescents and adults (Hoehn *et al.*, 2018; Hornor *et al.*, 2022). The description of non-penetrating sexual assault, or sexual violence without the exchange of body fluids, should not be a contraindication for evidence collection, as descriptions of sexual assault are often unreliable, especially in children and adolescents (Hornor *et al.*, 2022). Swabs of the oral mucous membranes can be limited to 24 hours, as it is highly unlikely to retrieve DNA material from the mouth even after 13 hours. These timeframes can help emergency departments avoid unnecessary tests and examinations. These interventions are both distressing and invasive to patients, which can lead to retraumatisation; as well as cost and time consuming to health care systems and institutions (Nittis, Franco and Cochrane, 2016).

Psychological care for survivors of sexual violence has been slower to evolve than the medical and forensic fields. Further studies and research is required to form consensus on best practices for psychotherapeutic care (Rothbaum *et al.*, 2012a; Parker and Turner, 2013; Gilmore *et al.*, 2021). Psychological debriefing is the formal recounting of the experience and receiving support and psychoeducation. Contrary to common perception, psychological debriefing and supportive counselling

have been shown to be ineffective as treatments for sexual violence, and even harmful in some circumstances (Rothbaum *et al.*, 2012a).

Cognitive behavioural therapy (CBT), prolonged exposure therapy, and a combination of the two, have demonstrated the best results, at the highest level of evidence, when treating survivors of sexual violence (Russell and Davis, 2007; Rothbaum *et al.*, 2012a). Prolonged exposure therapy is the repeated reimagining of the traumatic incident, and associated cues or triggers, while removing the fear response, by removing the belief of acute danger or threat (Rothbaum *et al.*, 2012a). Prolonged exposure has shown the greatest efficacy in protecting against PTSD symptoms, as well as improvements in measures of PTSD severity, depression, and global functioning (Foa *et al.*, 2013).

There have been studies that demonstrate that early psychotherapeutic interventions, can be successful in reducing Acute Stress Disorder and PTSD symptoms. However, there are many documented challengers and barriers to getting survivors to present early and accept psychological care early in their recovery (Russell and Davis, 2007; Rothbaum *et al.*, 2012; Oosterbaan *et al.*, 2019; Bragesjö *et al.*, 2020).

Pharmacological interventions to prevent PTSD have also been studied. However there is no convincing evidence that medications such as propranolol, hydrocortisone, dexamethasone, gabapentin, or escitalopram are helpful in preventing Acute Stress Disorder or PTSD (Bertolini *et al.*, 2022). There is some evidence to suggest that benzodiazepines can be harmful to survivors of sexual assault, as it can lead to patterns of avoidance and substance abuse in recovery (Gilmore *et al.*, 2022a).

2.7 Development of Programs

In the 1976 the first Sexual Assault Nurse Examiner (SANE) program was established in Memphis, Tennessee. SANE programs are led by Registered Nurses, often Advanced Practitioners in Trauma or Forensic Nursing, who have undergone specialized training in the holistic management of sexual assault and rape victims. They are specifically trained in the physical examination, collection of evidence and maintaining chain of custody, medical and emotional support of the patient, specific legal processes in their local context, and the appropriate referral to available community resources. Today there are over 800 SANE programs in the United States (Linden, 2011; Office for Victims of Crime, 2016).

Around the same time Sexual Assault Response Teams (SART) were also being developed (Office for Victims of Crime, 2011; National Sexual Violence Resource Center, no date). A majority of SART programs comprise of four main team members; a medical practitioner, a law enforcement officer or investigator, a victim advocate, and criminal justice system representative. The main goal and defining principle of SARTs has always been a victim centered approach; that aims to improve the experience of patients seeking help after a sexual assault. They also aim to improve prosecutions rates and provide community outreach and education (Greeson *et al.*, 2016; Carlson *et al.*, 2020).

The Sexual Assault Nurse Examiner (SANE) program has been found to have numerous benefits for survivors of sexual assault. According to Lewis-O'Connor et al., the SANE program has evolved over time, with various models being developed, including Sexual Assault Response Teams (SART) (Lewis-O'Connor, 2009). These programs have been found to provide specialized care to survivors of sexual assault and have been successful in improving the quality of care provided, with trained SANE nurses conducting most of the forensic exams. Additionally, the use of SANE programs has been shown to increase the likelihood of arrest and prosecution of perpetrators of sexual assault, as well as reduce the likelihood of case dismissal (Nugent-Borakove *et al.*, 2006). Furthermore, SANE programs have been found to promote the psychological recovery of victims(Campbell, Patterson and Lichty, 2005). However, there are limitations to the SANE program. The availability of trained SANE nurses is often limited, particularly in rural areas, which can limit the accessibility of the program (Lewis-O'Connor, 2009). In addition, the use of SANE programs may be limited by issues related to survivor reporting and disclosure, such as fear of retribution, lack of trust in the criminal justice system, or a lack of awareness of the program (Nugent-Borakove *et al.*, 2006). Overall, the SANE program is particularly effective in providing comprehensive, trauma-informed care to survivors and improving the quality of forensic evidence collection.

2.8 Deficits in Care of Sexual Violence Survivor

International studies have shown that ED nurses self-report a lack of confidence in providing good forensic care, as well as trauma informed care that does not retraumatise victims (Jancey, Meuleners and Phillips, 2011; Tozzo *et al.*, 2018; Chandramani *et al.*, 2020). Due to demanding workloads, and the fast paced environment of an Emergency Department, ED nurses may find it difficult to take the time and

emotional capacity to take a comprehensive history, or offer meaningful psychological support (Tozzo *et al.*, 2018).

A large study conducted in Australia, Canada, England , Wales, Scotland and the USA found that only 14% of survivors of sexual assault choose to report their assault to the police or legal authorities (Muldoon *et al.*, 2018). Studies have shown that few women report their sexual assault to formal structures such as police or health care professionals (Nikulina, Bautista and Brown, 2019). Survivors who do report to an emergency department often don't complete a Sexual Assault Medical Forensic Examination (SAMFE) or Sexual Assault Evidence Kit (SAEK), and those that do often don't agree to release these kits to the police or legal authorities (Muldoon *et al.*, 2018).

2.9 Advancements in South Africa

Since the democratization of South Africa, several legislative and policy steps have been made to bring South Africa in line with international declarations to address gender based violence, and international standards around the provision of legal, medical, and psychosocial care after experiencing violence (Naidoo, 2013; Sibanda-Moyo, Khonje and Brobbey, 2017).

Several national guidelines have been issued which stipulate basic public services and rights which patients who experience sexual assault must be provided (Department of Health, 1998, 2005) . In 2007 The Sexual Offenses and Related Matters Amendment Act (32 of 2007) was passed, which among many objectives sought to broaden the definition of rape and sexual assault. The law also legislated the provision of certain expected health care services to patients who experience sexual violence, such as safety and privacy, experienced forensic care, and the provision of post exposure prophylactic (PEP) antiretroviral medication (South African Government, 2007).

2.10 The Need

Despite these advancements, the quality of post-sexual violence care in resource limited settings remains vastly inadequate and inconsistent. Barriers to the implementation of good quality emergency care are

structural and systemic, as well as local and contextual. In Sub-Saharan Africa there remains an absence of legislation that clearly addresses sexual violence. Formal sexual violence legislation serves to setup a clear legal framework around the issue. It also serves to establish the roles of the judiciary, law enforcement, and the health care sector. It should ideally define sexual violence, formally mandate what care should be provided to survivors, and interlink medical and law enforcement services to improve forensic care and legal outcomes for survivors. As of 2009 only six sub-Saharan African countries had laws directly addressing sexual violence; while eight other countries had other legislation that tangentially addressed sexual violence (Kilonzo *et al.*, 2009).

Access to consistent, evidenced based care is challenging in resource limited settings. It is especially challenging in rural areas and unstable areas such as conflict zones. Barriers to access can include physical distances or lack of transport routes to hospitals or crisis centers, stock shortages of equipment and medication, lack of medical expertise in rural areas further from academic centers, and overwhelmed primary health care facilities (Bress *et al.*, 2019).

There remains a deficit in research on post-sexual violence care in resource limited settings. It is also still a challenge to get comparable statistics across lower and middle income countries, due to variances in the legal definitions of sexual assault or sexual violence, weak centralized structures for accumulating national health data, and the vast under reporting that occurs particularly in resource limited settings (Kilonzo, 2009).

Smaller studies do however illustrate the deficiencies in the post-sexual violence care provided in resource limited settings. A study in Kenya illustrated the lack of structured policy guidelines, as well as integration of legal, healthcare, and psychological services. (Kilonzo, 2009). This study also illustrated non-adherence to well established international best practices, such as treatment in non-confidential spaces, survivors having to pay for services and medication, and the lack of provision of post-exposure prophylaxis ARVs to survivors of sexual violence. Trauma counselling or psychotherapy was also inconsistently offered to survivors. Similar shortcomings in basic post-violence care have been demonstrated in studies in Uganda, Zambia, India and Bangladesh (Dawson *et al.*, 2014).

South Africa, also a resource limited setting, has similar barriers to high quality, evidenced based, post-sexual violence emergency care. Numerous large studies have shown that medical and forensic care for

patients who experience sexual violence in South Africa remains inconsistent and inadequate (Christofides *et al.*, 2005; Vetten *et al.*, 2008; Shukumisa, 2013).

In the year 2000 the Sexual Offences and Community Affairs Unit of the National Prosecuting Authority introduced a protocol which would integrate legal, psycho-social and medical care to survivors of gender based or sexual violence**.** The protocol involved the use of Thuthuzela Care Centres (TCC), which were placed in each province and became the sites for medical, legal and supportive care for survivors of sexual violence (Briginshaw *et al.*, 2018). The care centres (TCC), were largely well received and it appeared that the service delivery provided to survivors of sexual assault was improved by this multidisciplinary integration. (Bougard and Booyens, 2015)**.**

This does not however, speak to the state of sexual assault services as a whole. It appears that availability of resources, staff shortages and training still limit the quality of care provided to sexual violence survivors (Skosana, 2016). A South African study done in the Ekurhuleni District, found that nurses related both systemic and individual barriers in the care for patients who experience sexual assault. Providers were often unfamiliar with the stipulated medical and forensic care to be given as best practice. They also complained of staffing shortages which often forced them to practice out of their scope, or entirely outside of their profession. They also complained of lack of resources, such as prescribed medication; and infrastructure, such as a referral system to social workers or psychologists (Skosana, 2016).

A study in the Western Cape found a lack of mental health care provided to sexual violence survivors (Abrahams and Gevers, 2017). The study found that there was a lack of emphasis and integration of mental health care services into acute care. Most of the care was provided by lay counsellors, on behalf of NGOs. Counselling sessions did not inform the patients of some of the long term mental health care effects of sexual violence, or provide any coping strategies. Instead they focused on the survivors recounting of their experience, which has been shown to be detrimental and possibly retraumatizing (Rothbaum *et al.*, 2012). Referrals to psychology or psychiatry were rare, and follow up mental health care again relied on informal NGO services. A study conducted in the North-West Province found similar shortfalls, where only 21% of survivors were provided acute-short term mental health support after the initial counselling session, and 0% received any long term psychiatric or psychological support (Sepeng and Makhado, 2019).

Research also illustrates the poor integration of follow-up services into post-sexual violence care in South Africa. Follow-up care is vital in limiting and containing the negative effects of sexual violence. South African guidelines recommend follow-up appointments at one week, six weeks and three months after the first medical contact. Follow-up care incorporates medical monitoring, HIV and pregnancy testing, review of post exposure prophylaxis, as well as ongoing counselling and referral to specialist services such as psychology. A study conducted in the Eden District in the Western Cape illustrated how strategies known to improve follow up care were not being adhered to. Half of the survivors in the study were not given formal follow-up appointments, or information on the importance for follow-ups and the services provided. Survivors also were not provided with formal referral documentation, making it harder to access services. Having to follow up at a different facility (primary healthcare clinic), was also a significant barrier for survivors. This required engaging with new health care providers, and risking stigmatization and retraumatization again (Holton, Joyner and Mash, 2018).

The South African Nursing Council (SANC) is the regulatory board set up by the Nursing Act to regulate nursing practice and standards in South Africa. The SANC scope of practice for a Registered Nurse makes no mention of care of the forensic patient, nor the care of a survivor of sexual violence (South African Nursing Council, 1991). However, SANC has stipulated that as part of the scope of practice of emergency nurses, they must be able to "identify, manage and pursue across all aspects" the care of forensic patients, including the collecting of forensic evidence (South African Nursing Council, 2020). SANC has also established clinical competencies for specialised forensic nurses. However these have been made mostly non-specific and flexible. Specifically on clinical skills, the scope of practice states that a forensic nurse "Implements a range of advanced procedures, treatments and interventions in accordance with the developed care plan and best practice standards" (South African Nursing Council, 2014).

There is a clear deficit in specialised education and clinical training for emergency care nurses and doctors in South Africa. Currently there are no higher education institutions accredited by SANC offering specialist education and training in forensic nursing (SANC, no date), and forensic nursing is still not recognized as a speciality by the Department of Health (Randa and McGarry, 2023). There remains a dire need for education programs in this field. The first step towards realising this is the formal recognition of forensic nurses as clinical nursing specialists; with the formalisation of their scope of practice, curriculum, clearly defined role in the health care system, and financial compensation for

their advanced practice (Duma and De Villiers, 2014; Sebaeng and Duma, 2017). There have been documented pilot programs to train sexual assault nurse examiners in South Africa, as per the American training model. However these programs have tended to be isolated, heavily reliant on external funding, and lacking recognition from stakeholders such as the Department of Health and SANC (Mooideen, 2012).

In light of these discrepancies and structural challenges, an updated synthesis of current knowledge and practice is warranted. In order to fulfil this need, this study set out to explore the research literature around the emergency management of patients who have experienced sexual violence. From the literature, it will be established what advancements and innovations to medical, forensic, psychological, and follow-up care, in the emergency care setting; have been made for patients who have experienced sexual violence. The research will discuss which of these advancements and innovations to care are replicable in a resource limited setting, and would be replicable in the South African context.

2.11 Summary

Chapter two offers an in depth literature review on sexual violence, and how it is managed in an emergency care setting. The chapter describes the definition of sexual violence, as well as inter-related concepts of intimate partner violence (IPV), gender based violence (GBV), child sexual abuse, sexual trafficking, and commercial sexual exploitation of children (CSEC). The chapter discusses the role of the emergency department, and the emergency care nurse, in the emergency management of sexual violence. The chapter reviews major innovations and improvements to care globally, including a focus on SANE and SART programs. The chapter then outlines the major legislative and policy advancements in South Africa since the end of apartheid, as well as the innovations of the Thuthuzela Centers. The chapter then outlines the deficits that are still evident in the care of survivors of sexual violence, in South Africa and in other resource limited settings. These deficits then inform the purpose and objectives of the research.

CHAPTER THREE: INTEGRATIVE LITERATURE SEARCH

3.0 Introduction

This chapter will discuss the research methodology of the study, the integrative literature review. The chapter will define and describe the integrative review, and explain the justification for selecting it for this study. The chapter will present the systematic stages and processes of a rigorous and well performed integrative review, and detail how they were performed in this study. Lastly it will discuss effective ways at interpreting and presenting the findings of an integrative review, and explain how that was performed in this study.

3.1 Research Methodology

The study utilizes an integrative literature review as its design. Integrative reviews are a form of research reviews used for research synthesis. Research synthesis is the collection and distilling of all relevant studies done on a topic or area of study. This is critical in order to build on existing knowledge, strengthen findings, and advance practice and policy (Whittemore et al., 2014).

The amount of primary research in nursing and health care has been steadily increased, as has the demand for evidenced based practices and initiatives. As such literature reviews are increasingly utilized in nursing and healthcare research. The integrative literature review is distinguished from other literature reviews as the only method that can include and synthesize research from diverse methodologies. It is inclusive of qualitative and quantitative research, literature reviews, as well as theoretical research (Whittemore and Knafl, 2005; and Hopia, Latvala and Liimatainen, 2016).

Integrative reviews have increased in popularity and use. Their ability to integrate qualitative data, quantitative data, and theoretical research, allows them to more comprehensively explore complex healthcare issues which may be multi factorial. This makes integrative reviews important for the improvement of evidence based practice and health care policy, particularly in nursing sciences

(Whittemore and Knafl, 2005; Webb and Roe, 2008; Burns and Grove, 2013; and Hopia, Latvala and Liimatainen, 2016).

The integrative research methodology was chosen for this integrative review, as sexual violence represents a complex societal and health issue; with many contributing factors, effects, and aspects of care and prevention. There is a broad and in-depth amount of research literature on the topic, using different designs and methodologies. The integrative review is one of the most effective methods for synthesising such diverse research literature.

3.2 Stages of the Integrative Review

The complexity of synthesizing different forms of research can lead to bias and error. In 2005, Whittemore and Knafl proposed a framework for the integrative review that aimed to standardize the methodology; in order to enhance rigor, and ensure reliability and validity in the research process (Whittemore and Knafl, 2005).

Whittemore and Knafl expounded on the five stages of a research review: “a problem formulation stage, a literature search stage, a data evaluation stage, a data analysis stage, and a presentation stage” (Cooper 1998, as cited in Whittemore and Knafl, 2005).

3.2.1 Problem identification

The first stage defines the research problem and research purpose, as well as formulating the variables of interest, which are said to include the key concepts, target population, and health care problem (Whittemore and Knafl, 2005).

The health care problem identified in this study was the high prevalence of sexual violence in South Africa, and its management in an emergency care setting. The study’s research problem revolved around the inconsistent emergency management of patients who experience sexual violence in South Africa. The research purpose was to review the literature to formulate a set of best practices in the holistic care of the patient who have experienced sexual violence, and then to analyse these best practices in terms of their feasibility in a resource limited healthcare system, and specifically to the South African context.

There are many key concepts that were identified and considered. The research looked to explore the medical, forensic, and psychosocial care of the patient who has experienced sexual violence; the roles of emergency departments and emergency care settings; as well as the health care systems and capabilities in resource limited settings and in the South African context specifically.

3.2.2 Data collection

In an integrative review, the data collection essentially comprises an extensive literature search. Methods for the literature search must be comprehensive to ensure sources aren't overlooked, and to guard against publication bias from certain sources. Methods must also be systematic and transparently documented, to enable peer review and replication of the study. The quality of the literature review speaks directly to the reliability and validity of a study, which ultimately determines its rigor and quality (Whittemore and Knafl, 2005).

A database search using key terms should be the foundation of a literature search. This can then be supplemented with various other measures such as "ancestry searching, journal hand searching, networking, and searching research registries" (Conn et al. 2003b, as cited in Whittemore and Knafl, 2005). This is done to reach harder to access sources, in order to gather a more representative and comprehensive sampling. Purposive sampling may also be done if adequately justified (Whittemore and Knafl, 2005).

For this study the following key terms were searched; rape/sexual assault/ sexual violence; AND emergency department/ casualty/ accident and emergency department/ emergency room/ casualty/ emergency care. The following databases were searched for the initial literature search: Cochrane library, EBSCOhost (CINAHL; ERIC and MEDLINE), PubMed, ScienceDirect, Wiley online library and Psycinfo.

A grandfather search was then conducted of the included articles to appraise articles cited for their relevance to the study's research problem and research purpose. The final stage of the data collection was a journal hand search of the following contextually important journals; African Journal of Emergency Medicine, Journal of Emergency Nursing, Journal of Forensic Nursing, International Journal of Africa Nursing Sciences, and South African Medical Journal. The inclusion criteria Chapter Three: Methodology

Articles were included if published between 2011 and 2022, in order to include only current literature in terms of advancements in care and treatment of sexual violence. Articles were included if they were primary research; about the management of sexual violence; and in the acute emergency setting, such as emergency departments and sexual violence crisis centers.

Articles were excluded if they weren't in English, and if they were first published before 2011. We also excluded research were the methodology did not match the stated research objectives. Grey literature and books were excluded. Expert opinion, clinical guidelines, position papers, and research reviews were also excluded. They were excluded on the basis of not being primary research, and for not answering the research question; of which new advancements and innovations have been shown to have a positive effect on the care for survivors of sexual violence.

Articles were excluded if they dealt broadly with intimate partner violence, child abuse, workplace violence, and human trafficking. Although sexual violence is intrinsic in all of these afflictions, we deemed there are too many confounding factors when they are studied broadly. We excluded studies that looked at the management of sexual violence in very particular sub contexts. This included the management of sexual assault during COVID, on college campuses, in the military, or specifically in the workplace. We deemed this was beyond the scope of the research study's objectives.

The data collection process was verified by two other researchers through discussion and consensus building. . The research supervisor acted as the second researcher, as an expert in emergency and trauma nursing in South Africa. The third researcher was a senior lecturer in the nursing department, with expertise in another field. They provided an objective opinion, and had not been involved in the research topic until then; but did have extensive experience conducting research using the integrative review method. In instances where the researchers disagreed, articles were reread and summarized, with a focus on the objectives, context, and findings of the studies. Discussions continued until a consensus decision was reached.

The database search was conducted over 4 months. The iterative process of analysing, including, and excluding articles took another 2 months. The initial database and grandfather searches yielded a total of 4561 studies. 2419 of these were immediately excluded as duplicates, leaving a total of 2142 original studies. The abstracts of these 2142 studies were then read, and a further 1842 could be excluded based

on the inclusion and exclusion criteria. The remaining 300 articles were then read in full and dissected. Of these 253 articles were excluded, leaving a final sample size of 47 articles.

The following PRISMA table illustrates the data base search, and the process and decision making process of article evaluation and inclusion or exclusion.

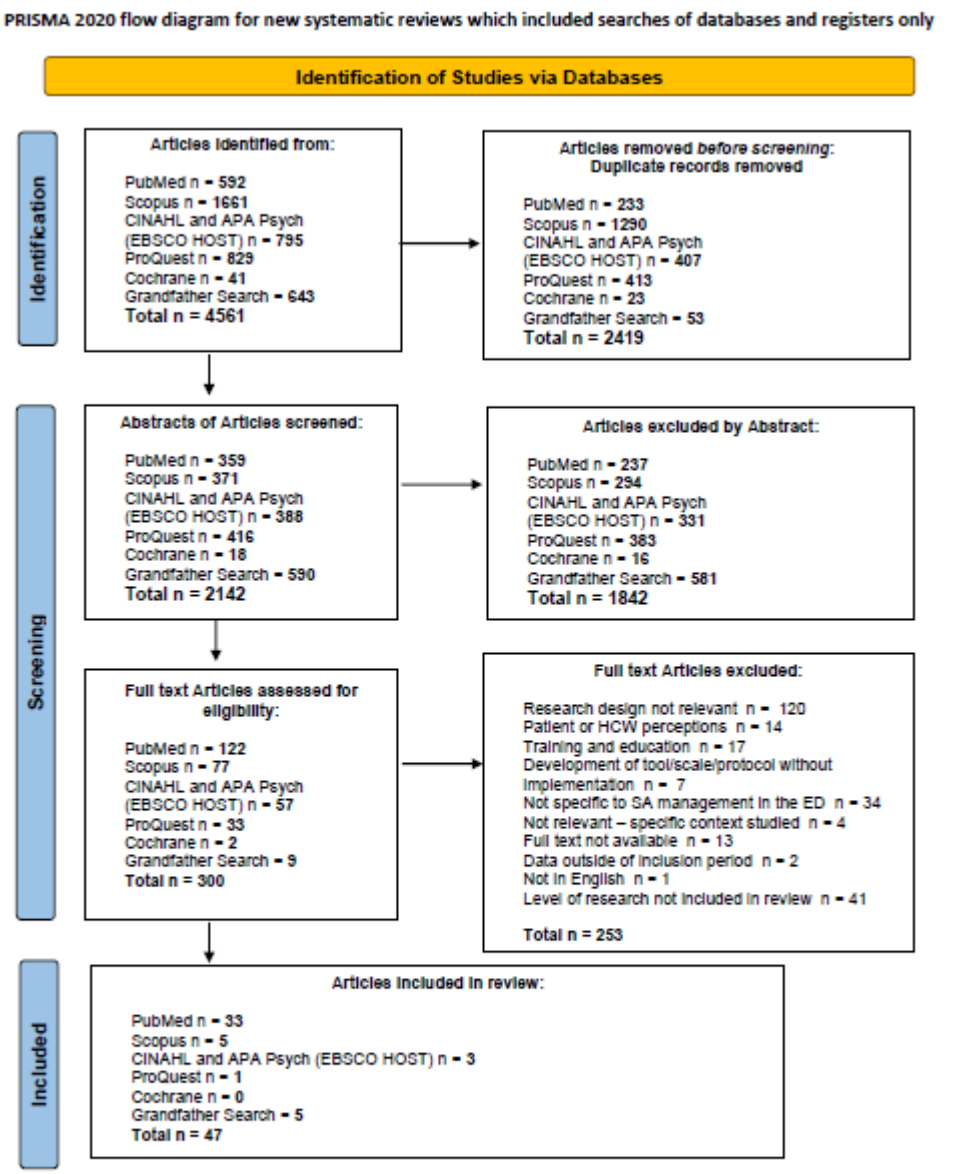


Figure 0-1 PRISMA Diagram of Data Collection Decision Tree

3.2.3 Evaluation of data

The critical appraisal of the quality of literary sources is complicated in an integrative review, due to the fact that diverse types and forms of research literature can be included. However it remains important that the evaluation of primary sources is still done in a thoughtful manner, justified, and documented (Whittemore and Knafl, 2005).

Critical appraisal tools are helpful instruments used to evaluate the quality and rigour of various studies or forms of evidence. They often utilize structured checklists or questions that make the process systematic and unbiased (Buccheri and Sharifi, 2017).

This study utilized the John Hopkins' Research Evidence Appraisal Tool for qualitative and quantitative studies, and the Johns Hopkins Non-Research Evidence Appraisal Tool for systematic reviews, literature reviews, clinical practice guidelines and other theoretical research (Dang *et al.*, 2021; © 2022 Johns Hopkins Health System/Johns Hopkins School of Nursing).

Permission to use the evidence appraisal tools was granted by filling out an online application from on John Hopkin's Center for Evidence-Based Practice's website, as directed by the sites formal application process (Center for Evidence-Based Practice). Permission statement was then given via an online website, along with access to the evidence appraisal tools. See Appendix 1 for permission statement.

3.2.4 Data analysis

According to Whittemore and Knafl, methods of data analysis and conclusion formation for integrative reviews remain poorly established. They propose using a constant comparison methodology proposed by Miles and Huberman, in 1994, for the analysis of quantitative data. This method uses five stages of data analysis, "of data reduction, data display, data comparison, conclusion drawing, and verification" (Miles & Huberman, 1994 as cited in Whittemore and Knafl, 2005).

3.2.4.1 Data reduction

Primary sources, in this case research articles, were divided into subgroups, based on similar characteristics, such as the type of study conducted. Sources in each subgroup were then analysed for similar issues and data points. This data was extracted and compiled in a matrix or spreadsheet. This

provided a method to organize and focus the data, in order to better understand and analyse it. (Whittemore and Knafl, 2005).

3.2.4.2 Data display

This involved converting the data so that it is organized around variables and issues, and not individual primary sources. Graphs, charts, networks, or mind maps can be used in order to promote the comparison and contrasting of all of the data from all types of primary sources (Whittemore and Knafl, 2005).

3.2.4.3 Data comparison

The objective of data comparison is to identify and examine patterns, themes, relationships, and orders in the data. Creativity and critical thinking are important components of this stage. Concept maps and mind maps can be useful in order to explore how different themes relate, interact, and affect each other (Whittemore and Knafl, 2005).

3.3 Interpretation and Presentation of Results

3.3.1 Conclusion drawing

This phase involved unifying the themes, relationships, patterns, and conclusions into larger and more abstract concepts and phenomena. This was done for each subgroup of data sources, and then repeated again to integrate all the subgroups into overarching conclusions and theories of the research as a whole (Whittemore and Knafl, 2005).

3.3.2 Verification

Analytical honesty is very important in the interpretation phase. The entire process must be transparently recorded and justified. Conflicting evidence must be honestly discussed. Rival theories or explanations must be explored. Conclusions or decisions must be constantly revised so that they incorporate as many data sources as possible (Whittemore and Knafl, 2005).

3.3.3 Presentation

The use of reporting guidelines can ensure transparency, objectivity, and standardization of research reports. This allows for the critical appraisal of research, so that it can then be translated into evidence based practice. Reporting guidelines often include checklists of minimal requirements expected in the presentation or reporting of research (Buccheri and Sharifi, 2017). This study utilized the PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist (Tricco et al., 2018) as no specialized guideline could be found for integrative reviews.

Results should contribute something new to the way we think about the topic, and ideally have implications for clinical practice, research or policy. These are discussed in the presentation of results. Methodological limitations will also be stated and discussed in the presentation of results (Whittemore and Knafl, 2005).

3.4 Rigor in Integrative Reviews

The broad frame of the integrative review has the risk of introducing bias, subjectivity, and lack of reliability and validity. Some key principles when conducting an integrative review must be adhered to in order to preserve the rigor of the study. Because integrative reviews can include qualitative and quantitative data, principles from both these methodologies are used to establish rigor. The core tenets of ensuring reliability and validity in an integrative review include: using a systematic methodology, critical appraisal of the studies included, and transparency in all decision making and processes followed (Whittemore, 2007).

Whittemore and Knafl's broadly adopted five stages of the integrative review was used, in order to establish transparency and replicability. It is also intended to minimize reviewer bias, and enhance reliability and validity of the process (Whittemore and Knafl, 2005; Whittemore, 2007).

The searching of five electronic databases, and reviewing of 2142 original articles, also enhances the rigor of the study. All database searches were documented and saved. Selection of databases and search terms was done in consultation with the supervisor and the lead librarian.

Consultation and consensus building was done with two other researchers in order to minimise selection bias in the data collection phase. The first researcher was the master's student, the second was the lead

supervisor, and the third was a senior lecturer in the nursing department with expertise in the integrative review methodology. When there was disagreement, articles were reread and analyzed, with a focus on their aim or objectives, and their findings; until consensus was reached. All coding decisions were openly discussed with the lead supervisor, and clearly documented. The John Hopkins critical appraisal tool was used in order to interrogate the level and quality of each article included in the study, with results being documented and discussed in data analyses.

3.5 Ethical Considerations

Data collection for this integrative review did not involve human subjects. Data collection was done using publicly accessible documents and research articles, without the use of any sensitive or private information. An ethics waiver was applied for and granted by the Faculty of Health Sciences, see Annexure 7.

The correct procedures for research within the University of the Witwatersrand, and the faculty of Health Sciences, were followed throughout. This included the formulation of a proposal, which was then presented for approval to the nursing department, and from the faculty of health sciences. Constructive feedback was given, and the research was only started after satisfactory corrections were made. Approval for the research title was granted from the Faculty of Health Sciences, see Annexure 8. The research process was an interactive and iterative process, with close consultation with the research supervisor throughout.

There are several guiding ethical principles that were adhered to. Patient first language is very important in clinical settings, and can affect the way patients are seen and treated (Crocker and Smith, 2019). Therefore this research refers to patients who have experienced sexual assault or rape; and not sexual assault patients or rape patients. This is done to promote a humanistic and holistic outlook toward the survivors of sexual violence, and on this research.

Part of ethical research in an integrative review is protecting against threats to rigor, reliability, and validity. The process of data collection was transparently documented, and database search results were saved. The data collection process was also verified by a second researcher with knowledge of the

research objectives. Inclusion and criteria decision making was verified with a second and third researcher. Critical appraisal tools were used to assess the level and quality of research for articles included. This was incorporated into the data evaluation, conclusion and verification process.

Academic honesty was adhered to by avoiding plagiarism; and citing sources whenever drawing on previous research, ideas, and concepts. Limitations were honestly discussed and presented.

CHAPTER FOUR: DATA EVALUATION

4.1 Introduction

Chapter 4 presents the process of data evaluation and extraction of findings. Conceptualization of the data and critical appraisal of the included articles are two key stages of this process.

4.2 Conceptualizing the Data

A total of forty-nine studies were included in the study. Each Article is assigned a number for reference.

1	*A Comprehensive Pediatric Acute Sexual Assault Protocol: From Emergency Department to Outpatient Follow-up.*	***Kaplan DM et al.***
2	*Medications at the Emergency Department After Recent Rape.*	***Gilmore AK***
3	*Standardizing HIV post-exposure prophylaxis in the emergency department following sexual assault.*	***Silva-Nash J et al.***
4	*The Priority of Administering HIV Postexposure Prophylaxis in Cases of Sexual Assault in an Emergency Department.*	***Scannell M et al.***
5	*Improving Emergency Access to Human Immunodeficiency Virus Prophylaxis for Patients Evaluated After Sexual Assault.*	***Saadatzadeh T et al.***
6	*Post-Sexual Assault Mental Health: A Randomized Clinical Trial of a Video-Based Intervention*	***Gilmore AK et al.***
7	*Post-sexual assault cigarette smoking: Findings from a randomized clinical trial of a video-based intervention*	***Walsh K et al.***
8	*Implementation of a protocol and staff educational sessions improves the care of survivors of sexual assault.*	***Gilles C et al.***
9	*Early Psychological Intervention After Rape: A Feasibility Study.*	***Bragesjö M et al.***
10	*Pediatric sexual assault nurse examiner care: trace forensic evidence, ano-genital injury, and judicial outcomes.*	***Hornor G et al.***
11	*Prescription Opioid Misuse After a Recent Sexual Assault: A Randomized Clinical Trial of a Video Intervention*	***Gilmore AK et al.***
12	*Effectiveness of emergency contraception in women after sexual assault.*	***Choi DS et al***
13	*A secondary analysis of a brief video intervention on suicidal ideation among recent rape victims.*	***Walsh K et al.***
14	*Prosecution of adult sexual assault cases: a longitudinal analysis of the impact of a sexual assault nurse examiner program.*	***Campbell R et al.***
15	*A novel ED-based sexual assault centre in western Kenya: description of patients and analysis of treatment patterns.*	***Ranney ML et al.***
16	*Readability and health literacy level of post-exposure prophylaxis patient education materials offered after sexual assault.*	***Reynolds R et al.***
17	*A Randomized Clinical Trial Examining the Effect of Video-Based Prevention of Alcohol and Marijuana Use Among Recent Sexual Assault Victims.*	***Walsh K et al.***
18	*Improving HIV post-exposure prophylaxis rates after pediatric acute sexual assault.*	***Schilling S et al***
19	*Impact of a computerized order set on adherence to Centers for Disease Control guidelines for the treatment of victims of sexual assault.*	***Britton DJ et al.***
20	*Testing and Treatment After Adolescent Sexual Assault in Pediatric Emergency Departments.*	***Schilling S et al.***
21	*Assessing the extent of provision of comprehensive medical care management for female sexual assault patients in US hospital emergency departments.*	***Patel A et al***
22	*Using Telehealth for Sexual Assault Forensic Examinations: A Process Evaluation of a National Pilot Project.*	***Walsh WA et al.***
23	*Usability Testing of a Mobile Health Intervention to Address Acute Care Needs after Sexual Assault.*	***Gilmore AK et al.***
24	*Perceived Care Quality Among Women Receiving Sexual Assault Nurse Examiner Care: Results From a 1-Week Postexamination Survey in a Large Multisite Prospective Study.*	***Lechner M et al.***
25	*I still feel so lost: experiences of women receiving SANE care during the year after sexual assault.*	***Buchbinder M et al.***
26	*Evaluation of a Tool to Identify Child Sex Trafficking Victims in Multiple Healthcare Settings.*	***Greenbaum VJ et al.***
27	*Care Situation for Female Victims of Sexual Violence in Metropolitan Emergency Departments with Charité/Berlin as an Example.*	***Hoffmann-Walbeck H et al.***
28	*Knowledge, attitude and practice among healthcare staffs in the Emergency Department, Hospital Universiti Sains Malaysia towards Rape Victims In One Stop Crisis Centre (OSCC).*	***Chew KS et al***
29	*Early intervention may prevent the development of posttraumatic stress disorder: a randomized pilot civilian study with modified prolonged exposure.*	***Rothbaum BO et al.***
30	*Improving Emergency Department Care for Pediatric Victims of Sexual Abuse.*	***Hoehn EF et al.***
31	*Genital and Extragenital Gonorrhea and Chlamydia in Children and Adolescents Evaluated for Sexual Abuse.*	***Kellogg Ndet al.***
32	*Impact of Sexual Assault Survivor Identity on Patient Care in the Emergency Department.*	***Chalmers K et al.***
33	*Pediatric Forensic Analysis: The Benefits of DNA Collection Beyond 24 Hours.*	***Hornor G***
34	*Confidential screening for sex trafficking among minors in a pediatric emergency department.*	***Hurst, I.A. Et al.***
35	*Current care for victims of sexual violence and future sexual assault care centres in Belgium: The perspective of victims.*	***Peeters, L. Et al.***
36	*Early treatment of rape victims: Presentation of an emergency EMDR protocol.*	***Tarquinio, C. Et al.***
37	*Health professionals' perceptions of sexual assault management: A Delphi Study.*	***Jancey J. et al.***
38	*Detection of child abuse in emergency departments: A multi-centre study.*	***Louwers, E.C.F.M. Et al.***
39	*Intersection of HPV and sexual assault: An opportunity for practice change.*	***Fontenot, H.B.***
40	*Emergency Contraception Administration, Toxicology Kit Use, and Postassault Reporting: A Comparison of Sexual Assault Nurse Examiner (SANE) and Non-SANE Medical Providers.*	***Shaw, J. & Coates, V.***
41	*Children's narrative coherence in 'achieving best evidence' forensic interviews and courtroom testimony.*	***VanMeter, F. et al.***
42	*Recognition of child maltreatment in emergency departments in Europe: Should we do better?*	***Hoedeman, F. Et al***
43	*Acute Severe Pain Is a Common Consequence of Sexual Assault*	*Samuel A.McLean et al.*
44	*Feasibility of a screening tool for sex trafficking in an adult emergency department*	*Kaltiso S.O et al*
45	*Value of follow-up examinations of children and adolescents evaluated for sexual abuse and assault*	*Gavril AR et al.*
46	*New oral cut-off time limits in NSW*	*Nittis M. et al*
47	*Psychological outcomes after a sexual assault video intervention: A randomized trial*	*Miller, K.E., et al.*

Figure 0-1 Articles Included from Literature Search

A table was created to visually summarize the key characteristics of each study that was included. These characteristics consisted of: title, author, and publication year of the study; setting and sample of the study; aim and design or methodology of the study; and key findings and recommendations. Please refer to annexure 4.

4.3 Critical Appraisal of the Data

For an integrative review, it is important that a discerning evaluation of primary sources is done thoughtfully, and is justified and documented (Whittemore and Knafl, 2005). Critical appraisal tools are instruments used to evaluate the level of evidence, as well as the quality and rigour, of various research studies or forms of evidence. They achieve this by using structured checklists and/or questions. This allows the process of critiquing the research to be systematic and unbiased (Buccheri and Sharifi, 2017). Evidence based practice is built on the concept of assessing and evaluating the quality of current research based on various qualities, such as reliability, validity, methodological rigor, and the transparency of methods and results (Haile, 2022).

This study utilizes the John Hopkins' research evidence appraisal tools for research (Annexure 2 and 3). This tool was selected as it is appropriate for quantitative, qualitative, mixed method studies, and research reviews. The tool aims to classify the level and quality of evidence for each research study. The level of evidence is based on the design of the study. Level I involves experimental designs, level II is quasi-experimental, and level III is nonexperimental and qualitative studies. The appraisal of quality is judged off execution and rigor of the study process (Dang *et al.*, 2021; © 2022 Johns Hopkins Health System/Johns Hopkins School of Nursing).

A critical appraisal table was formulated, which included: each study's methodology, limitations, score based on the John Hopkins Tool to evaluate rigour and transparency, level of evidence, and quality of the research. Please refer to annexure 2.

4.4 Summary of Critical Appraisal

Of the forty seven included articles; seven (14.9%) were level one experimental designs (Rothbaum *et al.*, 2012a; Miller *et al.*, 2015a; Walsh *et al.*, 2017a, 2021a; Gilmore, Walsh, *et al.*, 2019a; Walsh, Meunier-Sham and Re, 2019a; Gilmore *et al.*, 2021). Twelve (25.5%) were level two quasi-experimental designs (Campbell, Patterson and Bybee, 2012; Hornor *et al.*, 2012; Tarquinio *et al.*, 2012; Britton *et al.*,

2013; Choi *et al.*, 2013; Schilling *et al.*, 2017; Hoehn *et al.*, 2018; Scannell *et al.*, 2018; Gilles *et al.*, 2019; Bragesjö *et al.*, 2020a; Saadatzadeh *et al.*, 2021; Silva-Nash *et al.*, 2022). Twenty eight (59.6%) were level 3 non-experimental designs (Jancey, Meuleners and Phillips, 2011; Louwers *et al.*, 2011; Ranney *et al.*, 2011; Gavril, Kellogg and Nair, 2012; McLean *et al.*, 2012; Fontenot, 2013; Patel *et al.*, 2013; Chew, Noor and Zaini, 2015; Schilling *et al.*, 2015; Hoffmann-Walbeck *et al.*, 2016; Nittis, Franco and Cochrane, 2016; Greenbaum, Dodd and McCracken, 2018; Kaplan *et al.*, 2018a; Kellogg *et al.*, 2018; Gilmore, Davidson, *et al.*, 2019a; Peeters *et al.*, 2019; Walsh, Meunier-Sham and Re, 2019a; Buchbinder *et al.*, 2021; Hoedeman *et al.*, 2021; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021; Lechner *et al.*, 2021; Shaw and Coates, 2021; VanMeter *et al.*, 2021; Chalmers *et al.*, 2022; Gilmore *et al.*, 2022a; Hornor *et al.*, 2022; Reynolds *et al.*, 2022).

Three articles (6.4%) were considered low quality (Tarquinio *et al.*, 2012a; Gilmore, Davidson, *et al.*, 2019a; Bragesjö *et al.*, 2020), based fundamentally on very low sample sizes (N=7, N=13 and N=17) However these three studies were pilot studies, testing the feasibility of new interventions and tools in the emergency department for survivors of sexual violence. This is an aspect of care that is not well researched, and there is little consensus around the best practices of care. Novel and explorative research is definitely needed. All three of these studies are important as they are exploring new ideas and concepts of improving mental health care after sexual violence, in the acute emergency setting (Tarquinio *et al.*, 2012; Gilmore, Davidson, *et al.*, 2019). None of the studies were therefor excluded based on their quality, but it was taken into account when incorporating their findings and results into the data evaluation.

There were 41 quantitative studies (87.2%), 5 mixed method studies (10.6%), and 1 qualitative study (2.1%). Twelve studies (25.5%) utilized a survey or questionnaire (Jancey, Meuleners and Phillips, 2011; McLean *et al.*, 2012; Patel *et al.*, 2013; Chew, Noor and Zaini, 2015; Hoffmann-Walbeck *et al.*, 2016; Gilmore, Davidson, *et al.*, 2019a; Peeters *et al.*, 2019; Walsh, Meunier-Sham and Re, 2019a; Buchbinder *et al.*, 2021; Hoedeman *et al.*, 2021; Lechner *et al.*, 2021; Chalmers *et al.*, 2022); with one utilizing a Delphi method in conjunction with a survey (Jancey, Meuleners and Phillips, 2011).

One study (2.1%) utilized an interview with qualitative data analysis (Kaplan *et al.*, 2018). Thirteen studies (27.7%) utilized retrospective record reviews. Eleven studies (23.4%) implemented a pre and post intervention study design. Three studies (6.4%) implemented an intervention and observational

study design. And seven studies (14.9%) conducted randomized clinical trials with control groups and random sampling.

Four studies (8.5%) explored patients' or patient advocates' perceptions or experiences on the care given after sexual violence. Twelve studies (25.5%) analysed the quality or characteristics of current treatments for survivors of sexual violence. Thirteen studies (27.7%) studied the implementation or performance of new protocols, programs, or quality improvement initiatives to improve the care for survivors of sexual violence. Fourteen studies (29.8%) studied new treatments or interventions for survivors of sexual violence. And three studies (6.4%) studied new instruments or tools to assist in the care of survivors of sexual violence.

There were only seven studies (14.9%) that conducted a randomized control trial (RCT). Most of these (five studies, 71.4%), were all part of one larger umbrella study. This study tested one intervention; a video shown to survivors of sexual violence during the sexual assault medical forensic examination (SAMFE), in order to assist and prevent various psychological sequelae and substance misuse behaviors. These five studies tested different outcome measures of the intervention (Walsh *et al.*, 2017; Gilmore, Walsh, *et al.*, 2019; Walsh *et al.*, 2020, 2021; Gilmore *et al.*, 2021). Another one of the RCTs utilized the same video intervention, but by different researchers, assessing similar outcomes (Miller *et al.*, 2015).

It is noteworthy that there is a scarcity of level one experimental research in the field of emergency care for survivors of sexual violence. There is both a shortage in the number of experimental studies, and a lack of diversity in the range of research studies being done. One can theorize that this could be due to the ethical challenges involved around experimental research with a vulnerable population group such as survivors of sexual violence. This poses ethical difficulties in testing novel treatments that may in fact be detrimental to survivors or cause them retraumatization, and in establishing control groups that do not benefit from the treatments.

It was encouraging to note there were seven studies (14.9%) that were pilot studies; exploring novel treatments, new programs or centers, use of technology to improve care and expand access to care, and new screening tools to detect survivors in need of care and services. Most of these studies utilized quasi experimental study designs, utilizing a pre and post intervention research methods. A few measured the interventions by assessing patients' and health care workers' perceptions of them after a trial period.

Although these studies are still mostly in their infancy, it is promising to see innovation and deliberation in the field.

There is currently a systematic review in progress by the Cochrane Library, which aims to "To assess the effects of psychosocial interventions on mental health and well-being for survivors of rape and sexual assault experienced during adulthood" (Brown *et al.*, 2019). Hopefully the results of that review will give direction and impetus for further experimental research around acute emergency management of survivors of sexual violence.

The following tables are a graphical representation analysing: level of study, quality score of study, type of study, and the general characteristics of the studies included.

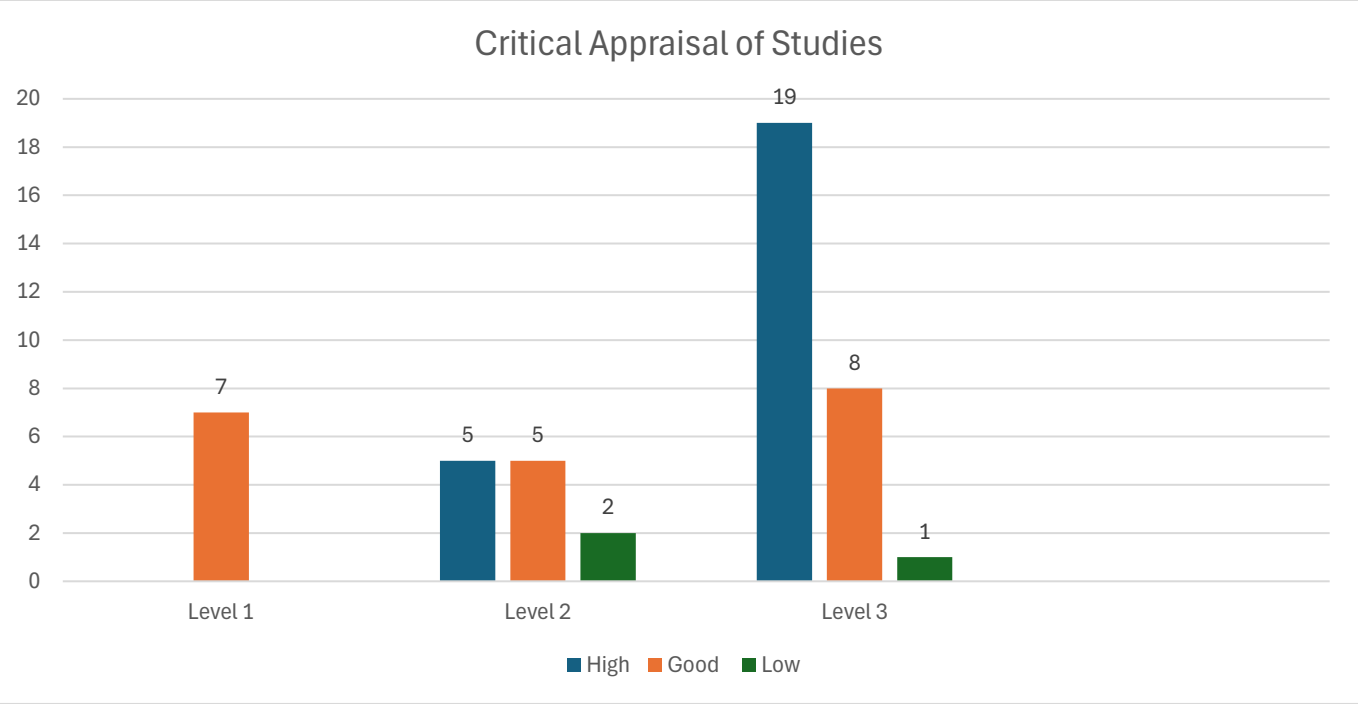


Figure 0-2 Critical Appraisal of Studies Summary

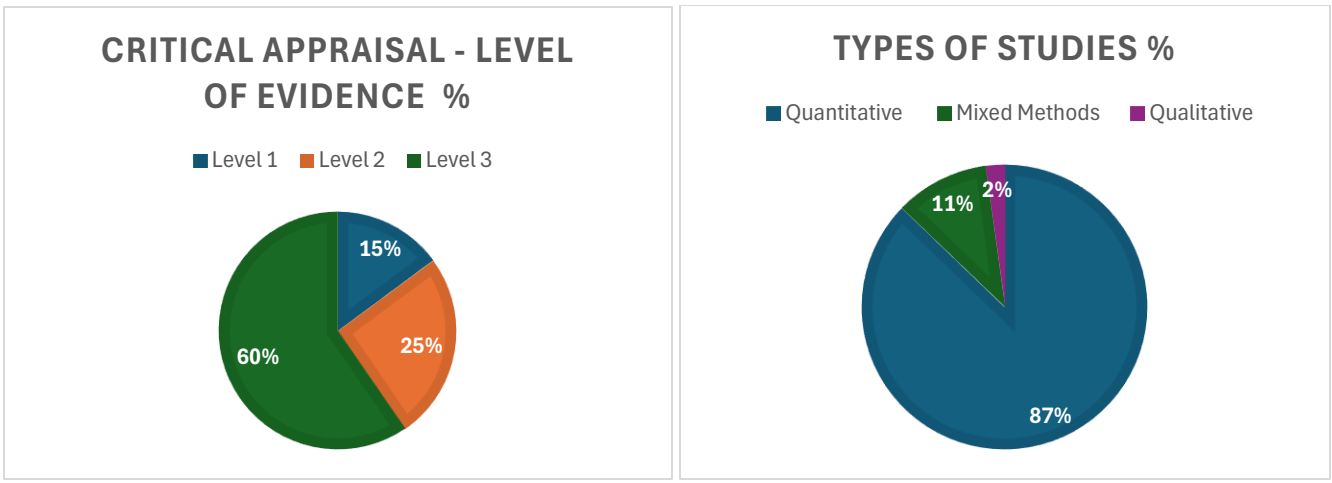


Figure 0-3 Breakdown of Studies

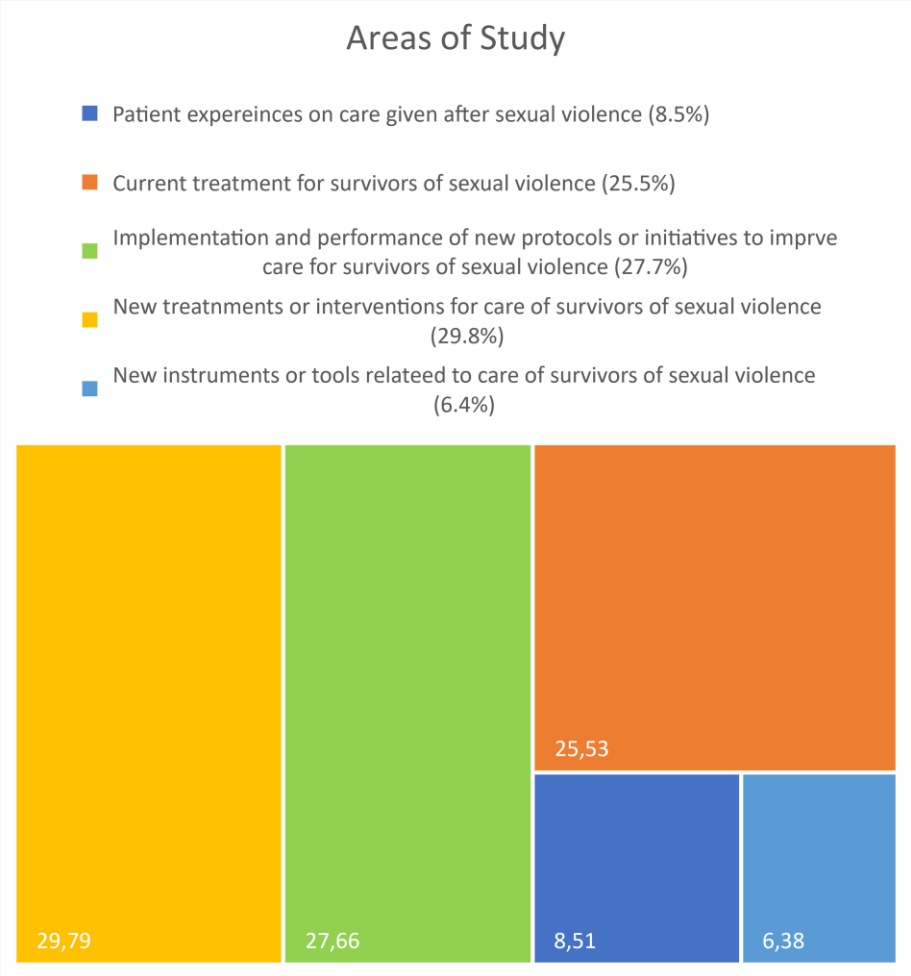


Figure 0-4 Categories of Studies Included

4.5 Summary of Chapter Four

Chapter Four presents the data evaluation stage; where the type and quality of the articles included is interrogated. The data appraisal of the articles included in the integrative review are discussed, using the John Hopkin's Critical Appraisal Tools (Dang *et al.*, 2021; © 2022 Johns Hopkins Health System/Johns Hopkins School of Nursing). Lastly figures and tables are utilized to assist with the conceptualization of the data and the 47 articles included.

CHAPTER FIVE: DATA ANALYSIS

5.1 Introduction

This chapter will present the data analysis of the forty seven articles included in this integrative review. As per Whittemore and Knafl's methodology, data analysis involves five interconnected and iterative stages: "data reduction, data display, data comparison, conclusion drawing, and verification" (Whittemore and Knafl, 2005). These proposed stages aim to increase the rigor in the integrated review, by giving it a well-defined and replicable methodology. The concept of constant comparison and synthesis is used throughout this chapter.

5.2 Data Reduction

Analysis of the data started by reading through each of the included articles to formulate an overarching idea of some of the topics and themes covered by the data set. Each article was then coded using MaxQDA software (VERBI Software, 2021). MaxQDA is software used for text analysis and coding, which is useful in literature reviews, qualitative analysis, or large reviews such as integrative reviews.

The included research articles were initially classified as per the aspect of care they explored; or by the type of interventions they examined. These categories included: The overall quality in emergency care for survivors of sexual violence; aspects around the medications given to survivors of sexual violence; the forensic care given to survivors of sexual violence; aspects of mental health care for survivors of sexual violence; the management and issues regarding paediatric and adolescent survivors of sexual violence; screening for various forms of sexual violence; implementation of departmental policies, protocols, and pathways in caring for survivors of sexual violence; technological aids in caring for survivors of sexual violence; specialized programs to care for survivors of sexual violence; and lastly, special populations and groups that require consideration when caring for survivors of sexual violence.

This study utilized a inductive coding method, whereby codes and themes are created as one reads and analyses the data set, by what the researcher is presented with in the text (Thomas, 2003). This is based in grounded theory, an approach commonly used in qualitative research analysis, whereby concepts are extracted from the data set, and then used to build categories and subsequently propositions (Pandit,

1996). Eight main themes, and thirty four subthemes, emerged from the data that spoke directly to the research question and objectives.

5.3 Data Display and Data Comparison

The following table was created to display the major themes of the data analysis.



Figure 0-1 List of Major Themes from Data Analysis

A corresponding table was also created to display the subthemes and their parents themes, see Figure 5.2. Annexure 3 presents all the themes, their corresponding subthemes, and the articles which with coded sections for each subtheme.

Screening Patients for Various Forms of Sexual Violence

- Screening for Sexual Abuse or Maltreatment of Children.
- Screening for Sex Trafficking or Child Sexual Trafficking.

Emergency Medical Care for Survivors of Sexual Violence

- General Emergency Medical Treatment.
- Post Exposure Prophylaxis (PEP) for HIV.
- Testing and Prophylactic Treatment for STIs.
- Emergency Contraception to Prevent Pregnancy.
- Treatment of Pain Post Sexual Violence.

Forensic Care for Survivors of Sexual Violence

- Physical Collection of Forensic Evidence.
- Development and Use of Sexual Assault Kits.
- Interview and History Taking Methods.
- Mandatory Reporting of Various Forms of Sexual Violence.
- Structural Factors Affecting Forensic Care.

Mental Health Care for Survivors of Sexual Violence

- Psychiatric Assessment of Survivors of Sexual Violence.
- Acute Interventions for PTSD and/or ASD.
- Acute Intervention for Suicidal Ideation.
- Psychiatric Pharmacological Treatments.
- New Psychological Treatment Modalities.
- Treatment of Substance misuse and abuse.

Follow Up Care for Survivors of Sexual Violence

- Follow up for Medical Care.
- Follow Up for Mental Health Care.
- Follow up for Forensic or Legal Care.

Technological Aids in the Care for Survivors of Sexual Violence

- Telemedicine Innovations.
- Video Interventions.
- Electronic Screening Tools for Sexual Violence.
- Technological Aids/ Resources for Post-Discharge Care.

Structural and Procedural Aids in the Care for Survivors of Sexual Violence

- Models of Care for Sexual Violence.
- Implementation of Procedures and Policies.
- Order Sets and Clinical Pathways to Improve Various Aspects of Care.
- Patient Education Materials for Survivors of Sexual Violence.
- Quality Improvement and Monitoring.

Environmental and Health Care Worker Factors Affecting the Care for Sexual Violence Survivors

- Health Care Worker Beliefs and Behaviours that Affect Care.
- Department Environmental Factors that Affect the Care.
- Barriers to Care for Survivors of Sexual Violence.
- Working within a Multi-Disciplinary Team.

Figure 0-2 Themes and Related Sub-themes of Data Analysis

This section will present the findings of the first five themes developed. These correspond to the foundational aspects of care for survivors of sexual violence, and also reflect the fundamental duties of the emergency department. These include: screening for sexual violence, emergency medical care, forensic care, mental health care, and follow up care and appropriate referrals (Patel *et al.*, 2013). In the course of data analysis, there was substantial overlap between the remaining three themes, and the first five fundamental themes. To avoid redundancy, the other three themes will be discussed in conjuncture with the first five fundamentals of care. The following tables are a graphic representation of how the last three themes intersect with the first five foundational aspects of care.

KEY: ✓ ✓ ✓

Technological Aids in the Care for Survivors of Sexual Violence	Structural and Procedural Aids in the Care for Survivors of Sexual Violence	Environmental and Health Care Worker Factors Affecting the Care for Sexual Violence Survivors
Telemedicine Innovations.	Models of Care for Sexual Violence	Health Care Worker Beliefs and Behaviours that Affect Care
Video Interventions	Implementation of Procedures and Policies	Department Environmental Factors that Affect the Care
Electronic Screening Tools for Sexual Violence	Order Sets and Clinical Pathways to Improve Various Aspects of Care	Barriers to Care for Survivors of Sexual Violence
Technological Aids/ Resources for Post-Discharge Care	Patient Education Materials for Survivors of Sexual Violence	Working within a Multi-Disciplinary Team
	Quality Improvement and Monitoring	

Figure 0-3 Key for Displaying Integration of Themes within 5 Major Themes



Figure 0-4 Intersection and Interplay of Interrelated Themes and Subthemes

5.3.1 Screening patients for various forms of sexual violence

Five articles explored the use of screening tools to detect various forms of sexual violence amongst patients presenting to the emergency department (Louwers *et al.*, 2011; Greenbaum *et al.*, 2018; Hoedeman *et al.*, 2021; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021). Two of these studies were retrospective record reviews looking at hospital compliance with existing screening tools or checklists (Louwers *et al.*, 2011; Hoedeman *et al.*, 2021). The other three were tool development or tool validation studies, looking at the utilization of screening tools for sex trafficking and child sex trafficking (Greenbaum *et al.*, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021). All of the articles were level 3, non-experimental research. Most of them (4 out of 5, 80%) had a high level of evidence, while one study a good level of evidence.

5.3.1.1 Screening for sexual abuse or maltreatment of children

Two studies looked at the screening of children for child abuse and maltreatment, inclusive of child sex abuse. Louwers et al. (2011) used a retrospective record review of seven Dutch hospitals, while Hoedeman et al. (2021) used a questionnaire that was answered by health care professionals representing 148 hospitals from 29 European countries.

Louwers et al. (2011) found that hospitals that were compliant with using a screening checklist had significantly higher detection rates of child abuse (0.1% vs 0.3% $p<0.001$). Detection of child abuse was also higher in children screened than those who weren't (0.8% vs 0.1%, $p<0.001$). 77% of suspected child abuse cases were initially screened upon presentation.

Hoedeman et al. (2021) found that only a small percentage (28.6%) of European hospitals utilize a screening tool for child maltreatment, contrary to NICE guidelines recommendations. They also found that paediatric EDs were better at using screening tools than mixed EDs, and that academic or training hospitals did better than general hospitals. The study also illuminated the need to focus and incorporate parental risk factors into screening for child maltreatment.

Both studies found that there was an absence of well-established and broadly accepted screening tools for child abuse and maltreatment. Most hospitals utilized a local non-validated or published tool, presumably as they have been adapted to the local conditions and context. Both studies also theorized that screening tools increase detection rates not only through the process of screening, but also by raising situational awareness amongst health care workers, and empower them in escalating their concerns (Louwers *et al.*, 2011; Hoedeman *et al.*, 2021).

5.3.1.2 Screening for sex trafficking or child sexual trafficking

Three studies explored the development or validation of screening tools for sex trafficking or child sex trafficking. Greenbaum et al. (2018) and Hurst et al. (2021) both looked at the use of screening tools amongst pediatric and adolescent patients, looking specifically to detect child sex trafficking (CST) or Commercial Sexual Exploitation of Children (CSEC). Kaltiso et al. (2021) looked at the use of a screening tool in an adult ED with vulnerable patients above the age of 18. All three used observational, nonexperimental study designs, with good or high quality.

Greenbaum et al. (2018) and Hurst et al. (2021) both aimed to validate a screening tool previously developed by Greenbaum, Dodd and McCracken (2018). Greenbaum et al. (2018) looked to validate the screening tool across five pediatric emergency departments; six child advocacy centers; and five teen clinics; while Hurst et al. (2021) looked to validate the tool at a level 1 academic pediatric emergency department. Kaltiso et al. (2021) aimed to develop a novel screening tool, based on several other screening tools used outside of the healthcare setting.

Greenbaum et al. (2018) and Hurst et al. (2021) both found high prevalence rates of child sex trafficking, 11.1% and 12.3% respectively. Kaltiso et al. (2021) found much lower prevalence rates amongst adult patients, 0.15%. Greenbaum et al. and Hurst et al. found their screening tools had high sensitivity (83.3% vs 84.6%), and moderate specificity (57.5% vs 53.2%).

All three studies showed the benefit of using a screening tool, as patient's that were positively screened were able to be referred to services including clinical social worker consult, admission to hospital for acute psychiatric issues eg. suicide ideation, discharge to safe house or to a safe family member of their choice, and referral to legal or forensic services if agreed to (Greenbaum *et al.*, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021).

All three studies found a significant amount of false positives. However all three studies stated that in this context, false positives shouldn't be of concern, as patients who screen positive for risk factors associated with sex trafficking can also stand to benefit from additional care and resources, and in some cases identifying risk factors and intervening may prevent future sex trafficking (Greenbaum *et al.*, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021).

All three articles also mention that screening alone cannot adequately improve detection of child sex trafficking and adult sex trafficking. It needs to be paired with education and training of staff, clear and accessible protocols, patient education which makes patients aware of their trafficked status, and patient outreach that makes them feel comfortable disclosing risk factors or trafficked status (Greenbaum *et al.*, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021).

5.3.2 Emergency medical care for survivors of sexual violence

Multiple studies explored the acute emergency medical care of survivors who presented to an emergency department or emergency care setting. The subthemes to emerge from this theme were: general emergency medical treatment, post exposure prophylaxis (PEP) for HIV, testing and prophylactic treatment for STIs, emergency contraception to prevent pregnancy, and the treatment of pain post sexual violence.

5.3.2.1 General emergency medical treatment

Hornor et al. (2012) looks to compare the quality of care provided before and after the implementation of a pediatric sexual assault nurse examiner program. The study lists three clinical indicators as measures of good quality emergency care for pediatric survivors of sexual assault: "Identification and documentation of acute and chronic ano-genital injuries, evaluation of pregnancy status, and testing for N. gonorrhea and C. trachomatis". It is both important that these quality indicators are documented in patients' medical records, for the sake of the patients care, and so that quality improvement strategies can use it for surveillance.

Ano-genital examinations in particular can be challenging on pediatric patients, and so their completion and positive yield are both indicators of high quality care to pediatric survivors. After the implementation of the pSANE program, positive findings on ano-genital exams increased from 20% to 34% ($p= 0.006$). Evaluating pediatric patients for pregnancy improved from 47% to 59% ($p= 0.03$), and testing for Chlamydia and Gonorrhea increased from 80% to 95% ($p <.0001$) (Hornor *et al.*, 2012).

Kaplan et al. (2018) also looked at the care and management of pediatric acute sexual assault (pASA). They state that ano-genital examinations will often be normal in cases of sexual assault. In their study 71.4% of cases had negative ano-genital exams. They explain in their study that this can cause scepticism and acute distress in survivors and/or parents or caregivers. It is the clinicians role and duty to reassure the patient and/or parent or caregivers, that the absence of findings on ano-genital examination in no way rules out sexual assault, or indicates that the patient's claims are at all doubted.

Gilmore et al. (2022) looked at the medications dispensed after sexual assault, and if there was an association between survivor identity or sexual assault characteristics, and the medications they

prescribed. Genital injuries were associated with increased rate of PEP for HIV. Non-genital injuries was associated with increased over the counter and prescription pain medications. Strangulation was positively associated with over the counter pain medication and psychiatric medications. Assaults that were the result of IPV were less likely to have prophylaxis for STIs or emergency contraception prescribed, and more likely to have psychiatric medication prescribed. Males were more likely than females to be prescribed PEP for HIV. Contrary to previous research, the use of alcohol or drugs prior to the assault did not have an effect on prescribing habits. Similarly race and ethnic identity did not affect the changes of being prescribed medication after sexual assault. It's unclear if these patterns and behaviours are based on research data and proven risk factors, the requests of patients based on their assumptions, or implicit biases of clinicians based on assault characteristics.

All three studies were appraised as high quality. Horner et al. (2012) utilized a pre and post intervention study design, making it level two, whereas Gilmore et al. (2022) and Kaplan et al. (2018) were both retrospective record reviews, level 3 evidence.

5.3.2.2 Post exposure prophylaxis (PEP) for HIV

Eight studies examined or discussed the prescribing and dispensing of antiretrovirals for post exposure prophylaxis (PEP) of HIV, after sexual assault. These studies were a mix of level 2 (5/8) and level 3 (3/8) research; and of good (5/8) and high (3/8) quality.

Specifically there were 5 pre-post intervention studies, quasi-experimental, that specifically aimed to improve PEP prescribing and dispensing. These studies illustrate that departmental protocols, staff education and training sessions, order sets, multidisciplinary teams (MDTs), and workflow changes can positively affect administration of PEP.

The Silva-Nash et al. (2022) study established a PEP program and protocol to specifically improve adherence to guidelines on PEP. They implemented an order set into the electronic medical records, and established a functional MDT of ED clinicians, sexual assault nurse examiners (SANE), and an HIV pharmacists. They also made significant changes to standing protocols and workflow pathways, such as dispensing the first dose of PEP in ED and establishing an on-site pharmacy. The program also created a 5 day telehealth follow up with an HIV pharmacist to assess tolerance and compliance with PEP, and a 28 day follow up with an infectious disease specialist for repeat laboratory testing.

The study demonstrated improved HIV screening on initial presentation, 28.8% to 95.5% ($p < 0.005$); improved adherence to appropriate laboratory tests ($p < 0.005$ for all); improved rates of offering of PEP to survivors of sexual assault (72.2% vs. 100%; $p < 0.005$); and ultimately an increase in PEP prescriptions (51.9% vs. 86.1%; $p < 0.005$). PEP prescriptions also complied with CDC guidelines more often (55.2% vs. 97.2%; $p < 0.005$); and 28 day follow ups were more commonly scheduled in the ED (3.5% vs. 11.3%; $p = 0.278$). The dispensing of the first dose of ARVs in ED, and the establishing of an on-site pharmacy removed barriers to dispensing of PEP, and improved the verification and dispensing of PEP. The collaboration between SANE nurses and an HIV pharmacist is theorized to have improved survivor education and acceptance of the 28 day PEP course (Silva-Nash *et al.*, 2022).

Scannell and Burger's (2018) intervention was an education session, a simulation course, and the implementation of an action orientated checklist for nurses to prioritize and streamline certain aspects of care. This was shown to decrease the time to when PEP was administered to survivors of sexual assault in the ED (mean= 285.65 vs 235.30), although it did not meet statistical significance.

Saadatzadeh et al. (2021) also implemented a program, The IN-STEP Project, to specifically target PEP administration for Patients Evaluated after Sexual Assault. The program included staff education, case studies, order sets, implementing point of care HIV testing for immediate testing of HIV status, dispensing a full course of PEP for 30 days in the ED, formulating patient take home educational materials in different languages, and providing a referral to local clinics for follow up at day 30. The program improved clinicians knowledge of PEP guidelines, confidence in prescribing and dispensing PEP, and confidence in referring for appropriate PEP follow up.

Schilling et al.'s (2017) study implemented a multi-step quality improvement process to address inappropriate HIV PEP regimens prescribed to survivors of sexual assault at a large pediatric hospital. The interventions included a scripted telephonic follow up at day 4, which assessed the appropriateness of the PEP prescription, and any barriers to it being dispensed; staff educational sessions and materials; and a change to the clinical pathway and electronic order set used for sexual abuse in the hospital. The pathway was changed to recommend a 4 day starter pack of PEP as well as a prescription for the remaining 24 days. Dispensing of the correct HIV PEP course improved from 40% before the Quality Improvement period, to 87% afterwards, with correct 100% PEP regiments dispensed for the last 11 months of the program.

Hoehn et al. (2018) conducted a very similar study, also focused on quality improvement through plan-do-study-act cycles. They had a similar aim of improving adherence to PEP and other treatment guidelines amongst a pediatric population of sexual assault survivors. The study was also conducted at a large tertiary pediatric hospital. The interventions included formulating an algorithm/ pathway; education sessions for pediatric emergency medicine providers, pediatric SANE nurses, and pediatric emergency department social workers; and an electronic order set. The interventions showed an improvement of algorithm adherent care from 57% to 87%, which was sustained through 13 months of monitoring. HIV PEP administration showed particularly strong improvement.

Ranney et al.'s (2011) study looked at the establishment of a novel crisis center to attend to all the needs of survivors of sexual assault in Western Kenya. The study was classified level 3, non-experimental. Even though the establishment of the center did account as a form of intervention in care, the study did not look at pre-intervention measures, and was solely a retrospective record review of the care given post intervention. However the study also looked at several similar interventions to the studies above, including extensive staff education and the development of a clinical pathway/ guideline. HIV PEP was administered to 63% of survivors post intervention, still a low percentage, but comparable to international standards.

There were two other level 3 studies, both retrospective record reviews, which assessed aspects of current treatment practices relating to HIV PEP for survivors of sexual violence. Gilmore et al. (2022) found that HIV PEP administration was more likely in patients who present with genital injury, or male patients, as previously discussed. Reynolds et al. (2022) looked at publicly available HIV PEP patient education materials, given to survivors of sexual assault on discharge with the 28 day PEP prescription. They used three validated tools to assess readability and understandability of these education materials, to see if they were in-line with CDC recommendations for patient education literature. Results showed that all of the educational materials exceeded the CDCs recommended reading level of 6^{th} grade. 57% of the materials were deemed understandable: "the degree to which people with low health literacy can interpret key messages within the educational material," while 14% were actionable: "degree to which people take action, e.g., seek care or change behavior, based on the information provided by the educational material".

When taken together, these studies show strong support for several interventions to improve HIV testing and HIV PEP administration to survivors of sexual assault. Point of care testing can improve care by eliminating delays in referral for specialized care for patients that test positive. Administering the first dose, or 3-4 day starter packs, of ARVs can eliminate delays in initiating PEP, and reduce a significant barrier for those presenting after hours or on weekends. Starting the course may also encourage the patients to continue with the 28 day course. Staff education, clear and up to date clinical pathways, and automated order sets, have been shown to be successful in multiple quality improvement studies.

5.3.2.4 Testing and prophylactic treatment for STIs

Eight studies explored the provision of prophylaxis against STIs for survivors of sexual violence. Three of these studies (3/8) used a pre-post intervention study design, presenting level 2 evidence. The other five studies (5/8) used a mixture of retrospective record reviews and surveys, presenting level 3 evidence. The studies were a mix of high quality (5/8) and good quality (3/8).

As discussed in the previous subtheme, the Silva-Nash et al. (2022) study established a PEP program. This program included an electronic order set, which incorporated the CDC's recommendations for pharmaceutical prophylaxis for hepatitis B, chlamydia, gonorrhoea, syphilis and Trichomonas vaginalis. The improved clinical pathway also included screening tests for Hepatitis B, Hepatitis C, and Syphilis. This intervention caused a large increase in the testing of these STIs. It also improved Hepatitis B vaccination rates, 8.5% vs 22.7%; p= 0.024. There was an increase in STI prophylactic treatments, though these improvements were not statistically significant. This was in part due to the fact that adherence to STI prophylaxis guidelines were already quite strong in this emergency department.

Britton et al. (2013) also utilized an electronic order set based on CDC guidelines to improve clinician compliance with prescribing guidelines. Order set included medication name, route, and dosing. The results showed an improvement of compliance to CDC guidelines from 4.4% to 82.5%. This difference was statistically significant, $p < 0.001$.

Hoehn et al. (2018), as discussed in the previous subtheme, implemented a multi-step quality improvement process. Their intervention were a revised clinical pathway, an electronic point of care order set, and education sessions. This was shown to improve STI prophylaxis treatment. After intervention there were no errors noted in the treatment of trichomonas, gonorrhea, or chlamydia.

Testing for STIs, in particular Hepatitis B, Hepatitis C, and Syphilis still accounted for 73.9% of errors after the intervention. This is important as the detection of STIs in prepubertal paediatric survivors of sexual assault can be a significant forensic finding. In adolescence survivors testing is still important and recommended for surveillance and so that current sexual partners can be notified and seek treatment.

There were four studies that conducted a retrospective record review, level 3 research evidence, to assess the current standard and trends in STI testing and prophylactic treatment. One study conducted a survey of forensic nurses beliefs and practices around STI testing and prophylactic treatment.

Gilmore et al. (2022) studied the characteristics of the sexual assault and its effect on prescribing patterns, as discussed earlier. The study showed that STI prophylaxis was less likely to be prescribed when sexual assault is the result of IPV. This practice is not supported by research, and is likely a result of patients declining prophylaxis if they believe they know their partner is STI free, and if they already having unprotected consensual sex with these partners separate to incidents of sexual violence. It may also be a product of health care provider assumptions and implicit biases.

Fontenot (2013) surveyed 519 specialist forensic nurses to assess their support for incorporating human papillomavirus (HPV) testing and treatment into standardized post sexual assault care in the emergency care setting, including the issue of administering HPV vaccinations. Support for education around HPV in post sexual assault care was almost universal at 98%. In regard to HPV vaccinations, 86% of forensic nurses supported recommending HPV vaccinations, and 53% supported initiating the first round of vaccinations in the ED post sexual assault.

Forensic nurses were also asked to report the greatest barriers they perceived to exist that prevented the expanding of post sexual assault care to include HPV testing and vaccination. They ranked lack of education and understanding of HPV in patients and parents, and financial restraints for those without medical insurance, as the biggest detriments to HPV preventative measures (Fontenot, 2013).

Forensic nurses scored very high with regards to knowledge around HPV, high in support for HPV preventative measures, and very high in self-efficacy towards their ability to affect practice change in the clinical setting. These factors all indicate it is feasible to examine incorporating HPV testing and prophylaxis into post sexual assault care in areas where specialized or trained health care staff are already caring for victims of sexual violence (Fontenot, 2013).

Kellogg et al. (2018) studied the patterns of testing for Neisseria gonorrhoeae (NG) and Chlamydia trachomatis (CT), in children and adolescents (age 0 to 17), presenting to a Children's hospital emergency department and its outpatient sexual abuse assessment center. The study utilized the new technique of nucleic acid amplification tests (NAATs), which has been shown to be more sensitive than cultures.

The study showed that most children and adolescents who tested positive for NG or CT did not present with vaginal discharge or other symptoms of infection. This supports recommendations that state that STI testing must be done regardless of symptoms. The study also showed that a small minority (24.7%) of survivors who tested positive for extragenital infections of NG or CT (oral or anal sites), also had acute or non-acute anogenital injuries. None of the thirteen prepubertal children to test positive for STIs had signs of acute or healed anogenital trauma (Kellogg *et al.*, 2018).

Most patients who tested positive for oral or anal NG or CT did not give a history of genital contact or penetration at those sites. These patients either specifically declined such contact, omitted it in their history of the incident, or were too young to give history. This illustrates that histories given by children and adolescents in this acute period can be unreliable. This can be due to trauma, shame, or a lack of maturity to understand what is being asked in the history taking. There were 26 patients who only had extragenital positive tests, and who would have been missed if only genital testing had been done (Kellogg *et al.*, 2018).

As per Kellogg et al. (2018), current CDC guidelines do not recommend routine testing of the oral or anal sites for NG or CT, unless indicated by a patient history of penetration/ genital contact at those sites, or by anogenital injury. The CDC does not recommend testing for oropharyngeal CT, however 27 patients tested positive for oral CT using the NAAT. This study clearly contradicts the CDC's recommendations, as up to 43% of the positive STI tests would have been missed under these guidelines. The study's findings advocate for routine testing of all three sites for any case of suspected sexual victimization in children and adolescents; as well as a revisiting of current CDC guidelines.

US department of Justice guidelines do not recommend STI testing for adolescent survivors who might be sexually active prior to the sexual assault. The justification for this is that these survivors are expected to receive STI prophylaxis regardless of test results. However Kellogg et al. (2018) still believe

it to be good practice to test this cohort, as treatment needs to be extended to their sexual partners to prevent re-infection, and to stop further community spread of STIs.

Schilling et al. (2015) similarly looked at STI testing and prophylactic treatment, through the use of a retrospective record review. Their study expanded the review to 38 children's hospitals aided by an electronic record system. The study found vast differences in both testing and prophylactic treatment across the different hospitals. Overall only 44% of adolescents received the recommended testing for chlamydia, gonorrhea, and pregnancy status, and only 35% received the correct recommended prophylactic treatment. Clinical pathways were positively associated with improved prophylactic treatment, but not with STI testing. Specialized sexual assault teams were not associated with an increase in either testing or treatment. However these specialized teams represent a heterogeneous group with different structures and functioning roles.

The study also surveyed ED and child abuse physicians from the thirty eight children's hospitals, and found reticence amongst some emergency departments (26%) to universally test survivors of sexual assault, due to the fear that prior sexual histories might be used against their credibility in a court of law. Both the American Academy of Pediatrics and the CDC favour universal screening. Schilling et al. (2015) reiterate the sentiment of Kellogg et al. (2018), that universal testing is essential for the surveillance of communicable diseases, and to allow the survivor to notify sexual partner(s) in order to prevent reinfection within their relationship and to prevent further community spread.

Ranney et al. (2011) was discussed in the previous subtheme. The study established a novel crisis center in Western Kenya, with focus on staff education and a clinical pathway and treatment protocol. STI prophylaxis treatment was documented in 84% of survivors. It was not documented whether the other 16% were offered and declined treatment, or were not offered. A baseline of treatment rates was also not measured prior to the establishment of the CAR-E center, but these rates are said to measure favourable against rates of STI prophylaxis in the US and other high income countries.

These studies taken together clearly illustrate the benefit order sets, clinical pathways, and clear protocols can have on the correct and consistent administration of STI prophylaxis to survivors of sexual violence (Ranney *et al.*, 2011; Britton *et al.*, 2013; Schilling *et al.*, 2015; Hoehn *et al.*, 2018; Silva-Nash *et al.*, 2022). However, improvement in universal testing has been more stubborn to interventions and quality improvement programs (Schilling *et al.*, 2015; Hoehn *et al.*, 2018; Kellogg *et al.*, 2018). This

may be in large part to health care practitioner beliefs that it is not necessary to test for STIs immediately before providing prophylaxis for those STIs. This however contradicts certain, if not all, well established guidelines. Universal testing remains important in the care of the patients, as well as for public health surveillance and prevention motivations (Schilling *et al.*, 2015; Kellogg *et al.*, 2018).

New advancements in DNA testing have shown good sensitivity and validity in testing for gonorrhea and chlamydia. Recent studies suggest that current guidelines need to be revised, so that oral, genital, and anal sites are routinely tested for gonorrhea and chlamydia in children and adolescents who present with a suspicion of sexual victimization (Kellogg *et al.*, 2018). It should also be investigated whether expanding timeframe windows to test for STIs, results in more positive test results with newer NAAT methods (Schilling *et al.*, 2015; Kellogg *et al.*, 2018).

Lastly, there has been recent improvements in the awareness and education around HPV, and it's link to cervical cancer. Given the negative sequela associated with HPV, more research should be done on incorporating HPV prevention into post sexual assault care (Fontenot, 2013).

5.3.2.5 Emergency contraception to prevent pregnancy

Five studies examined the dispensing of emergency contraception to survivors of sexual assault. Two of the studies used quasi-experimental designs, level two evidence. Three used retrospective record reviews, level three evidence. The studies were a mix of good (1/5) and high (4/5) quality.

Choi et al. (2013) implemented a new regimen of levonorgestrel 1.5mg as a once off STAT dose for emergency contraception, given at a one-stop crisis center for sexual assault survivors. This was to compare it against the established regimen of two 0.75mg doses that had been proven effective. The single dose was found to be equally as effective as the two split doses, It had a failure rate of 2 out of 292 patients, or 0.68%. This compared favourably to other emergency contraception regimens. The study states that the copper intrauterine device (Cu-IUD) has the highest success rate in preventing pregnancy; followed by intermediate-dose mifepristone (25-50 mg); followed by the studied single dose of levonorgestrel 1.5mg.

Another interesting finding of the study was that 11 survivors presented between 72 and 120 hours after the sexual assault, were given the single dose levonorgestrel, and no pregnancy resulted in these cases.

Larger duplicate studies with larger sample sizes are required to see if the window for emergency contraception can be extended from the recommended 72 hours to 120 hours (Choi *et al.*, 2013).

Hoehn et al.'s (2018) quality improvement study was discussed in the improvement of HIV PEP and STI prophylaxis administration. Their clinical pathway/ algorithm recommended emergency contraception up to 120 hours after sexual assault was reported. After the intervention there were zero cases recorded of failure to administer emergency contraception when indicated.

Shaw and Coates (2021) did a retrospective record review of an electronic database looking at the clinical and forensic care given to survivors of sexual assault by SANE nurses as compared to non-SANE nurses. They found a marked improvement of emergency contraception administered, 65% vs. 53%, $p < 0.001$.

Ranney et al. (2011) found that their establishment of the CAR-E crisis center in Western Kenya led to a 73% rate of testing eligible survivors for pregnancy, and a 70% rate of administering emergency contraception, although the study did not quantify a baseline rate before the establishment of the center to assess if this represented a significant improvement.

Gilmore et al. (2022) found that sexual assaults occurring in the context of interpersonal violence, were less likely to receive prescriptions for emergency contraception. As stated before, it is not known if this is based on empirical evidence, patients' request, or implicit biases and assumptions.

In summary, there is both level 2 (Hoehn *et al.*, 2018) and level 3 evidence (Ranney *et al.*, 2011; Shaw and Coates, 2021) that clear guidelines, clinical pathways, and the specialized training of staff can improve the rate of administering emergency contraception to survivors of sexual assault, thereby limiting harmful outcomes like unwanted pregnancies and terminations of pregnancies, which can cause secondary victimization for survivors. There is also strong evidence, level 2 high quality research, supporting levonorgestrel 1.5mg single dose as a second line hormonal emergency contraception, which has also been duplicated and verified in other studies and other settings (Choi *et al.*, 2013).

5.3.2.6 Treatment of pain post sexual violence

There were two studies that explored survivors experience of pain after sexual violence, and how it is treated. Both studies were level 3, one being a survey of patients with good quality evidence, and the other a retrospective record review of high quality.

McLean et al. (2012) conducted a survey of 164 survivors of sexual assault, who presented to 10 SANE programs in the US, within 48 hours of their assault. The questionnaire looked to assess current pain intensity in each of eight body regions, and assess what pain management they were given in the post sexual assault care. The study showed that most survivors of sexual assault experienced severe or moderate pain in the acute period after the assault. More than half (53%) of the women experienced pain in 4 or more regions of the body. Severe pain was reported by 64% of the women. The most common regions for pain location at initial presentation were genital region, head, back, and abdomen.

However only seven out of fifty three (13%) of women reporting severe pain received any pain medication during the initial SANE assessment, and 3/53 (6%) received pain medication upon discharge. The study showed a moderate association between Acute Stress Disorder symptoms and severity of pain reported. Effective management of pain is important for the patient's comfort and well-being, but has also been linked to better psychological outcomes after traumatic experiences (McLean *et al.*, 2012).

Gilmore et al. (2022) showed that only non-genital injury was associated with prescription pain medication dispensing. They theorized that this may be due to "prescriber judiciousness for pain medication" due to the opioid use disorder epidemic. Strangulation was only associated with over the counter pain medications.

These two studies show that further developments and improvement are needed to better address survivors pain after sexual assault. Further research needs to be done to find effective ways of addressing survivors' pain, without increasing their risk for opioid and prescription drug misuse or dependence. McLean et al. (2012) recommends that NSAIDs be incorporated as an essential medicine given to post assault survivors. They also recommend that nurses and health care providers who care for survivors of sexual assault are educated on the common occurrence of acute and chronic pain as a result of sexual violence, how to effectively assess for pain, and how to effectively treat it.

5.3.3 Forensic care for survivors of sexual violence

Ten articles assessed the forensic care given to survivors of sexual violence. They were a mix of level 2 and level 3 studies. No randomized control trials were found that addressed improvements to Forensic Care. The subthemes to emerge from the study were: The physical collection of forensic evidence; the development and use of sexual assault kits, interview and history taking methods with survivors of sexual violence, mandatory reporting of various forms of sexual violence, and structural factors of the legal system or law enforcement that can affect forensic care.

5.3.3.1 Physical collection of forensic evidence

There were two pre-post intervention studies that looked at programs and their effect on the collection of DNA evidence during the sexual assault medical forensic examination (SAMFE). These studies present level 2 evidence, one of high quality and one of good quality.

Campbell, Patterson and Bybee (2012) looked at the implementation of a SANE program at a local crisis center in the US, and the effect that had on positive DNA yield during the SAMFE, as well as the progression of sexual assault cases through the various stages of the criminal justice system. The study found that positive DNA yields were more common in the post SANE era. Positive DNA findings were positively associated with further progression through the levels of the justice system.

Similarly Hornor et al. (2012) examined the effect of the implementation of a pediatric SANE program at a large urban pediatric hospital in the USA. Specifically they looked at the effect the pSANE program had on the following measures: trace forensic evidence yield, identification of perpetrator DNA, and judicial outcomes in pediatric acute sexual assault. All three of these measures increased after the implementation of a pSANE program, but not to the level of statistical significance. There was a significant improvement in the timing of forensic care rendered. More survivors were given forensic care within 24 hours of the sexual assault/ abuse, 71% vs. 56%; $p = 0.010$. Trace evident was found in 8% of cases, and over half these were collected within 24 hours of the assault/ abuse.

There were five studies that presented level 3 evidence regarding the physical collection of forensic evidence. There were four retrospective record reviews and one mixed survey and Delphi study. Four of the studies were rated as high quality, one as good quality.

Hornor et al. (2022) also conducted a retrospective record review in 2022. The study looked to assess the impact of more inclusive criteria and timeframes for conducting a SAMFE and collecting DNA evidence. The study looked at extending the timeframes from 24 hours to 72 hours in prepubescent children, and from 72 to 96 hours in adolescents. The study had two important finding. First that an almost equal amount of kits had a positive yield for DNA evidence in the 24 to 48 hour period, as compared to the 0-24 hour period, 39.3% versus 41.1%. There were also a significant positive yields of DNA collection in the 49–72 hour period, 16.3%; and 73–96 hour period, 42.6%. This shows that with new DNA technology and amplification techniques, DNA collection windows should not be shortened or limited, as this could result in a great loss in opportunities to collect crucially important evidence.

The second finding is that many children and adolescents whose SAMFE yield a positive DNA result often present without an explicit history of abuse or presenting complaint of abuse. 16 children in this study gave no disclosure of sexual abuse or weren't interviewed, and yet their SAMFE was positive for DNA material. Lack of disclosure does not rule out sexual abuse. Health care providers must consider other risk factors judiciously, including prior disclosure to a caregiver or trusted adult, or referral based on circumstantial concern (Hornor *et al.*, 2022). These finding corroborate the findings of Kellogg et al. (2018) that found positive test results for gonorrhea and chlamydia that contradicted the patients disclosed history.

Jancey, Meuleners and Phillips (2011) conducted a survey and Delphi study with medical doctors, nurses, social workers and counsellors who treat or work with survivors of sexual violence. The study aimed explore the issues and deficits around the care given to survivors in Western Australia. Almost all of the participants (92.5%) stated that their staff were unclear on the correct procedures for collecting and storing forensic evidence and data. 88.8% of respondents reported inadequate training and education regarding the SAMFE. The study recommends extensive staff education, and the possible establishment of a Forensic Nurse Examiner course.

Nittis, Franco and Cochrane (2016) Nittis et al. conducted a retrospective record review to compare the efficacy of oral mouth swabs with oral mouth rinses. The study clearly indicates oral mouth rinses to be

the superior method over oral swabs with significantly higher yield of sperm (16.4% vs 4.2%). Oral rinses also had a higher DNA detection success rate (70.6% vs 60.9%). This was even though the mouth rinse was conducted after the mouth swab in this study. The study also showed that all methods for the collection of oral forensic evidence is only beneficial in the first 24 hours post assault; and that peri oral swabs also have a high yield of sperm and DNA material, and should be used in conjunction with oral rinses.

Ranney et al. (2011) studied the effects on forensic care of the novel rape crisis center in Western Kenya. They found that education and training of staff led to the collection of evidence: clothing and other items of interest. This was despite the fact that local resources did not yet have the capacity to test for DNA evidence.

Shaw and Coates (2021) looked at different measures of good quality and trauma informed forensic care before and after the implementation of a SANE program. They found that survivors examined before the SANE program were more likely to have a toxicology report and police report filled out with the SAMFE. This may seem counterintuitive. However it is important to remember that a survivor has the right to decide if she wishes to have a toxicology report done, and a right to decide on whether or not to file a police report with the SAMFE. Some survivors might decide to consent to the SAMFE for possible future use in a criminal case, without wanting to presently open a case. These two measures, completion of a SAMFE, and filling out a police report, should be uncoupled so that one is encouraged to do the SAMFE without being coerced or persuaded into the filling of a case. Trauma informed care means respecting the survivors agency and choice, and involving their wishes into the treatment plan.

The findings of these studies demonstrate that education and training programs for nurses and health care providers are key drivers that can improve our collection and preserving of critical forensic evidence (Ranney *et al.*, 2011; Campbell, Patterson and Bybee, 2012; Hornor *et al.*, 2012). They also illustrate that nurses and other emergency providers have clearly identified a deficit in their training when it comes to forensic assessments and collection of forensic evidence. They have recommended more specialized and focused training programs for health care providers who treat and care for survivors of sexual violence (Jancey, Meuleners and Phillips, 2011). However specialized training might at times result in a decrease in police reports and cases that are formally brought to the criminal justice system. This is because specialist care of sexual assault survivors must include prioritizing the medical

and psychological needs of the survivor over the criminal justice system's need for evidence of a crime (Shaw and Coates, 2021)

There have also been several recent advancements in forensic testing recently, especially in DNA amplification and the use of Sensitive nucleic acid amplification tests. Several of these studies advocated for revising and extending current timeframes for the collection of DNA evidence (Kellogg *et al.*, 2018; Hornor *et al.*, 2022). New methods of DNA collection like oral rinses and peri oral swabs have also shown promising results in the research (Nittis, Franco and Cochrane, 2016)

5.3.3.2 Development and use of sexual assault kits

Two studies mentioned the development or use of sexual assault kits, however neither of them specifically aimed to study their use or benefit. Both studies were level three, non-experimental, with a mix of good and high quality. Both studies implemented new programs, and then surveyed health care providers on their use and efficacy.

Hoffmann-Walbeck et al. (2016) studied the introduction of a "Stuprum kit", a sexual assault kit with a sexual assault clinical pathway, in several hospitals in Germany. Overall 79.4% of health care providers thought the global concept of the stuprum kit was good or very good.

Walsh, Meunier-Sham and Re (2019) studied the implementation of a telehealth SANE program in the US. As part of their recommendations, they reference the Sexual Assault Forensic Evidence Reporting Act of 2013, and the Sexual Assault Forensic Evidence Reporting Working Group. This group has advocated for the standardization of sexual assault kits in the US. This would establish basic standards and working requirements for these kits. It would also allow for SANE and pSANE nurses to become familiar with these standard kits. This would expand access to SANE and pSANE services by allowing them to travel and/or set up telehealth services.

5.3.3.3 Interview and history taking methods

Two articles addressed history taking and the forensic interview with survivors of sexual assault. Both were retrospective record reviews, level 3 evidence, good quality.

Ranney et al. (2011) established a standardised encounter form to improve history taking and reporting to the police of injuries and characteristics of the assault. After the implementation of this form, documentation was found to be more complete, and in-line with Kenyan legal standards.

VanMeter et al. (2021) reviewed 80 transcripts of Achieving Best Evidence (ABE) investigative interviews in England. This is a standardized methodology used by investigators and social workers to interview survivors of child abuse in order to yield accurate testimonies which can be used in a court of law. They found that first elicited events were more coherent than subsequent events. Child engagement as well as emotional support had a positive effect on children's narratives. It is therefore very important to build rapport, gain trust, establish a therapeutic environment, and stimulate engagement with children to improve cohesion and chronology of forensic histories.

The Ranney et al.'s (2011) findings are pertinent to a low income setting. Clear order sets and encounter forms can be utilized to guide health care professionals and assist in improving history taking and forensic interviews. It is a low cost quality improvement measure that can be used to compensate for lack of specialized training.

5.3.3.4 Mandatory reporting of various forms of sexual violence

Shaw and Coates (2021) was the only study to look at mandatory reporting of certain types of sexual violence, such as child abuse, child sex trafficking, adult sex trafficking, and interpersonal violence. The study looked at the implementation of a SANE program. This intervention increased the submission of mandatory child abuse reports from 65% to 86%, $p < 0.001$. Due to their training, SANE nurses are more aware of their legal obligations. The study recommends training on mandatory report filling should be extended to all ED nurses and health care providers.

5.3.3.5 Structural factors affecting forensic care

Three articles looked at the affect as systemic factors that can affect the forensic care rendered to survivors of sexual violence.

Campbell, Patterson and Bybee (2012), found certain police departments or investigative teams can have a detrimental effect on case progression through the legal system. They also found there can be seasonal effects, such as December holiday, or election years, that slow down case progression or lead to less cases being brought to trial. The article recommends engaging in multidisciplinary teams, and increased advocacy for patients to raise awareness of the barriers they face in the legal system.

Ranney et al. (2011) looked at the establishment of a crisis center in Western Kenya, where they found that the state hospital and police department did not have the capabilities to test for forensic evidence. What's more worrisome is that none of the 321 cases of sexual assault that they treated at their center had a case that progressed to trial. Reasons for this were not provided, yet may be due to the limited time of their study period, one year.

Victims of sexual violence are known to face barriers in their encounters with the legal system. More needs to be understood on how the medical field plays a role in this relationship, and what interventions could help. The effect and outcomes of sexual assault response teams (SARTs), and victim advocates, should be explored more in LMICs and resource limited settings.

5.3.4 Mental health care for survivors of sexual violence

Mental health care is an essential aspect of care for survivors of sexual violence, and it was assessed in a variety of studies included in this review. The subthemes that emerged include: psychiatric assessment, acute interventions for PTSD/ASD and suicidal ideation, psychiatric pharmacological treatments, treatments for substance misuse, and new treatment modalities for psychological sequela.

5.3.4.1 Psychiatric assessment of survivors of sexual violence

Psychiatric assessment is essential for identifying and treating mental health issues in survivors of sexual violence. In South Africa, there is a dearth of psychological assessment tools used for survivors. One tool that is used to assess survivors is the Subjective Units of Distress Scale (SUDS). Reducing SUDS to 0 is necessary to begin psychotherapy treatment. Treatment modalities such as EMDR and cognitive behavioural therapy can be used to reduce the SUDS score and consequently the amount of psychological distress patients are experiencing.(Tarquinio *et al.*, 2012; Gilmore *et al.*, 2022b) However,

this tool is not comprehensive for the heterogenous population of survivors and the variety of psychological distress these survivors may face.

Niche populations are particularly difficult to assess, but tools for assessing two key populations, pediatric and rural survivors, are discussed in two articles. Kaplan et al. (2018) developed a comprehensive pediatric acute sexual assault protocol that emphasizes the importance of addressing psychiatric needs at presentation to the emergency department. Walsh, Meunier-Sham and Re (2019) evaluated the use of telehealth for sexual assault forensic examinations, which has been shown to improve access to mental health services for survivors, particularly in rural areas.

5.3.4.2 Acute interventions for PTSD and ASD

Three acute interventions trialled for PTSD and ASD are prolonged exposure (PE), rapid eye movement (REM), and video interventions.

Prolonged exposure (PE) is an acute interventions for PTSD which can be done within 72 hours after the assault. A study by Bragesjö et al. (2020) had a small sample size (n=7 completed treatment) but did show clinically meaningful reductions in PTSD symptoms in the PE participants. Rothbaum *et al.* (2012) conducted a PE intervention study with a larger sample size (n=137) that also showed significantly less PTSD and depression severity for months after the traumatic event occurred. This study showed the highest effect size in PTSD reduction for rape victims, so this could be a particularly relevant intervention for preventing PTSD for sexual assault victims.

Another key intervention for PTSD is Eye movement desensitization and reprocessing (EMDR). Tarquinio et al. (2012) evaluates the URGent EMDR treatment protocol (URG-EMDR), which is a protocol for treating patients with EMDR in one session. This study demonstrated that the use of the URG-EMDR protocol led to a decrease in PTSD related scores, which remained reduced for the 6 months after the traumatic event. However, the sample size was small (n=17), and this method needs duplication in larger studies.

Video interventions have also been attempted to reduce PTSD. The video intervention conducted by Miller et al. (2015) showed that patients who had no previous sexual assault history had fewer PTSD symptoms at two-week follow-up visits then patients who did not use the video intervention. Because

this video intervention worked mostly in this small subset of the participants, this type of intervention may be less applicable for use in the Emergency Department, where standardized interventions are required.

There is much work to be done to better study these novel interventions and to create new interventions to reduce PTSD and ASD for sexual assault victims.

5.3.4.3 Acute intervention for suicidal ideation

Two studies, one by Walsh et al. (2021) and one Gilmore et al. (2019), both investigate interventions aimed at addressing acute care needs for sexual assault victims, including suicidal ideation.

Walsh et al. (2021) conducted a secondary analysis of a brief video intervention and found differing results for impact on suicidal ideation for different populations. Whether or not a participant had experienced a prior rape, as well as how elevated their level of cortisol was in the ED, impacted the efficacy of the video intervention on the participants. While this video intervention reduced suicidal ideation for people who had previously been raped, for people who had elevated ED cortisol and no prior rape the video intervention was associated with heightened suicidal ideation. Because of this, this video intervention is not recommended for use in the heterogenous ED population.

Gilmore et al. (2019) studied the SC-Safe application, which is for individuals who have experienced recent sexual assault. One of the main SC-Safe intervention modules is focused on suicide prevention. Participants endorsed that the module on suicide prevention was helpful and informative, and because the mobile app is discrete to use, it could be used for victims who may otherwise have a difficult time accessing care.

More research needs to be conducted on acute interventions for suicidal ideation, as the existing interventions are not comprehensive and do not provide a wide enough array of tools for addressing this important symptom in the emergency room.

5.3.4.4 Psychiatric pharmacological treatments

Pharmacological treatment for victims of sexual assault could include psychiatric medications, pain medication, antibiotics, and/or emergency contraception. However, the prescription of these medications

was not equally distributed across all types of sexual assault. A study by Gilmore et al. (2022) showed that victims of partner-perpetrated assault were more likely to be prescribed psychiatric medication and less likely to be prescribed antibiotics and emergency contraception than victims of other types of sexual assault. No studies reviewed showed benefits of new pharmacological interventions.

5.3.4.5 Treatment of substance misuse and abuse

Several randomized clinical trials have been conducted to assess the efficacy of video-based interventions in addressing substance misuse and abuse among individuals who have experienced sexual assault. Findings from these studies indicate that brief video interventions, such as the post-assault smoking prevention (PPRS) video, have the potential to mitigate cigarette smoking among survivors of sexual assault who received a medical forensic examination (Walsh *et al.*, 2020). Additionally, the PPRS video has the advantage of being easily disseminated at minimal cost in emergency department settings. Another study, by Walsh et al (2017), suggests that the PPRS intervention may be effective in reducing substance use in some high-risk groups, such as those with a prior history of sexual assault and those who reported binge drinking before their assault. Finally, a study conducted by Gilmore, Walsh, *et al.* (2019), found that a video intervention was associated with lower prescription opioid misuse, but only among those with a history of sexual assault. Further research is needed to evaluate the effectiveness of interventions targeting a wider range of substances.

5.3.4.6 New psychological treatment modalities

As discussed above in prior sub-themes, Bragesjö et al. (2020), Rothbaum et al. (2012), and Tarquinio et al. (2012); all tested novel psychodynamic modalities in the acute phase after sexual assault. This is a field of burgeoning interest. There is a Cochrane systematic review currently in progress that will look to assess such interventions, in order to start to define some of the best practices to treat and prevent psychological sequela after sexual assault (Brown *et al.*, 2019). Larger duplication studies of the studies mentioned above are also warranted.

5.3.5 Follow up care for survivors of sexual violence

A total of eleven articles researched or discussed the importance of follow up care for survivors of sexual violence. These studies were a mixture of level 2 research (3/11) and level 3 research (8/11), with

a mix of high and low quality. The sub-themes that emerged from this main theme were: follow up for medical care, follow up for mental health care, and follow up for forensic care.

5.3.5.1 Follow up for medical care

Gavril, Kellogg and Nair (2012), looked at medical follow up most closely in their studies. The researchers conducted a retrospective record review that looked at initial visits and follow up visits at a children's hospital and child advocacy center. Their aim was to see if follow up visits changed or influenced the diagnoses and treatment of children assessed for child abuse. They found that follow up examinations by a specialist (experienced sexual assault nurse examiner or child abuse physician), had significant effect on the survivors diagnoses and treatment. 17.7% had a change in the interpretation of trauma likelihood, and 6.5% had a new diagnosis of an STI. These changes affected 23.2% of the children examined.

Additional benefits to a full follow up examination included: almost all initial unknow examination findings were clarified, and 26.5% who were uncooperative on the first examination had changes on to their diagnosis after a follow up examination. Also a higher proportion of survivors were cooperative in the follow up examination compared to the fist examination. The authors theorize this could be due to "decreased anxiety or pain, offering better assessment of examination findings". Seven patients who initially received STI prophylaxis presented at follow up with persistent or re-infections of Gonorrhea or Chlamydia. HPV was the most common STI diagnosed on follow up examinations, as anogenital lesions associated with HPV only present after 12 days after abuse/ assault (Gavril, Kellogg and Nair, 2012).

The study states that while there isn't research quantifying the effect of follow up on psychological recovery for survivors, it does allow specialist an opportunity to assess for psychological problems and intervene if detected. It also presents an opportunity for the sex abuse specialist to reassure the survivor and parents on injury recovery and recovery from STIs, which may positively effect a survivors emotional perception of their recovery (Gavril, Kellogg and Nair, 2012).

Kaplan et al. (2018), implemented an expanded and more comprehensive follow up protocol at a pediatric ED, and then used a retrospective record review to adherence to the protocol, and factors associated with increase adherence to follow up. Survivors were assessed by specialized child abuse pediatricians and a multidisciplinary team.

The study found that amongst patients that followed up, an additional 6 patients had anogenital injuries that weren't identified or treated on the initial presentation. 3% of follow up patients required hospitalization, and 1% needed treatment for persistent STI infection. Patients were more likely to follow up if they were younger, needed anogenital assessment, were started on HIV PEP, or had cases with legal involvement. Most of the patients presenting to follow up also had a parent or caregiver accompanying them (Kaplan *et al.*, 2018a).

The study's follow up rate, 60.4%, was higher than previous studies and accepted follow up rates. There were several recommendations from their expanded follow up protocol which they suggested might have aided in this. First a follow up time and date was scheduled for the patient before leaving the pediatric ED. Secondly a phone call was made at day 3 after discharge, to remind the patient and/or parent/caregivers about their follow up appointment, to assess HIV PEP adherence and side effects, and to assess psychological well-being. Secondly parents or caregivers must be integrated into the care and treatment plan, to help support adherence to medication and follow up appointments. And lastly they recommend following up with a center or multidisciplinary team that can attend to all of the survivors needs. When services are fragmented, and more than 1 follow up visit is scheduled, it potentially creates more barriers to follow up adherence (Kaplan *et al.*, 2018).

Silva et al. (2022), Saadatzadeh et al. (2021), and Gilles et al. (2019), all implemented ED protocols looking to improve prescribing and dispensing of HIV PEP. All three studies were pre-post intervention and quality improvement studies. These studies also attempted to improve follow up by giving survivors a clear follow up treatment plan in ED before discharge. Silva et al. (2022) and Gilles et al. (2019) were unable to improve follow up rates with their nPEP program, with rates of 11.3% and 46% respectively. Saadatzadeh et al. (2021) could not prove any improvement based on their data. More research is required to assess the barriers to completion of follow up care in survivors of sexual assault.

Jancey, Meuleners and Phillips' (2011) Delphi study showed that sexual assault medical providers in Australia identified a clear lack in post follow up services for survivors of sexual assault. They recommended using technology to expand care and services, like a telephonic follow up appointment or assessments. Chalmers et al. (2022) suggested that vulnerable groups, such as male survivors of sexual assault, women of colour survivors of sexual assault, and survivors who are intoxicated at the time of

assault; are more likely to encounter retraumatizing ED interactions when seeking care. These negative experiences may decrease their motivation to seek follow up services and care.

5.3.5.2 Follow up for mental health care

Buchbinder et al. (2021) conducted an open ended qualitative interviews with survivors of sexual violence. 68% of survivors discussed psychological symptoms and sequela as a major concern during recovery. Survivors described symptoms of post-traumatic stress, isolation, and self-doubt. The study emphasizes that health care providers should refer survivors for follow up mental health care services, as well as counselling and reassuring survivors that these symptoms are a normal reaction to trauma.

Patel et al. (2013) conducted a comprehensive survey of 582 US hospitals to see if they were complying with comprehensive medical care management (CMCM) standards for care of survivors of sexual assault. The study found that only 40% of emergency departments offer same day rape counselling and referral for follow up mental health care. This is despite the high prevalence of PTSD and suicide ideation amongst survivors, as well as a host of other symptoms and conditions. Jancey, Meuleners and Phillips' (2011) Delphi study corroborated this finding, as various health care providers in Australia identified a noticeable deficit in assessment of psychological conditions, and follow up mental health services.

Gilmore, Davidson, *et al.* (2019) developed an intervention, to specifically address low follow up rates of survivors of sexual assault, and to attend to their multiple psychological needs. They developed a mobile health application (app) called SC-Safe. Survivors could therefor access mental health education and interventions without the barrier of having to come back to a health care facility. The study surveyed patients and health care providers on the usability and benefit of the app. Survivors described the mental health interventions and exercises helpful. However the response rate in the study was very low (11.5%), and the quality of evidence was there for rated low. Larger studies with more statistical power are needed to assess the efficacy of technological methods in improving the uptake of follow up services.

5.3.5.3 Follow up for forensic or legal care

Only one article spoke about forensic care during follow up. Kaplan et al. (2018) discuss pediatric cases with legal involvement, defined as having a having a sexual assault kit collected, having a police report

filled out, or the involvement of child protection services. The article states that survivor, parents, or caregivers will often need help navigating the legal system. Health care providers will have to work within a multidisciplinary team that includes law enforcement, social workers, and/or child protection workers. In some cases they may act as a case manager/liaison for the survivor, parents, or caregivers.

5.4 Conclusion Drawing and Verification

The objective of data comparison is to identify and examine patterns, themes, relationships, and orders in the data. Creativity and critical thinking are important components of this stage. Concept maps and mind maps can be useful in order to explore how different themes relate, interact, and affect each other (Whittemore and Knafl, 2005). MAXQDA's analytical tools were used to explore the relationships between different studies (VERBI Software, 2021). A table/matrix of all the included studies was also created, to distil the purpose, key findings, and recommendations of each study.

5.4.1 Screening patients for various forms of sexual violence

The studies in this integrative review support the use of screening tools to detect for child sex abuse or maltreatment, child sex trafficking, and adult sex trafficking. No studies were included that investigated tools for screening for IPV, elder abuse, or other forms of sexual violence; most possibly due to narrow search terms.

Hoedeman et al. (2021) references the National Institute for Health and Care Excellence (NICE) guidelines on child abuse and neglect. These guidelines detail the warning signs and behaviours of children and parents, which should make professionals working with children suspect child abuse or neglect. They also strongly advocate for institutions like hospitals to have education programs for staff, and clear and accessible protocols and guidelines pertaining to child abuse (NICE, 2017).

The American Academy of Pediatrics has issued similar clinical guidelines related specifically to the health care context. They also list warning signs and behaviours of children, and of parents, which have been shown to be associated with child abuse (Kellogg *et al.*, 2018).

A recent systematic review of screening tools for child abuse found 15 tools for screening for child abuse by healthcare providers. Nine of these tools were for physical abuse, one for sexual abuse, and five for multiple forms of abuse. No tool covered all forms of child abuse. Most of the tools (80%)

scored as moderate or high levels of evidence. However there was no consensus on any individual screening tool as the gold standard (Chen *et al.*, 2022). A review by Hoft and Haddad also found a lack of empirical evidence and consensus for any one tool screening for child sex abuse (Hoft and Haddad, 2017).

Two studies in this review looked at screening for child abuse and mistreatment, both level three evidence (Louwers *et al.*, 2011; Hoedeman *et al.*, 2021). Both were retrospective record reviews, assessing the current state of practice and policy. No new tools were piloted for the screening of child sex abuse or child abuse.

Louwers et al. found that hospital detection rates of child abuse were higher in hospitals using a screening checklist. And individual children who were screened were more likely to screen positive than children who aren't (Louwers *et al.*, 2011). Similar studies in other countries have corroborated these findings (Louwers *et al.*, 2012).

In spite of this research demonstrating the efficacy of screening for child abuse, Hoedeman et al. found that only a small amount of European hospitals utilize a screening tool (29%). And most of these hospitals fail to take in account parental risk factors along with child risk factors (Hoedeman *et al.*, 2021).

Commercial sexual exploitation of children (CSEC) and child sex trafficking are still relatively new fields of research, and health care provider knowledge and confidence in treating this vulnerable population remains low (Hurst *et al.*, 2021). Health Care providers might be scared to screen patients for sex trafficking due to their lack of knowledge, as well as a lack of resources and programs to assist survivors of sex trafficking if they screen positive (Hansen *et al.*, 2018). However research has shown both children/ adolescents, and parents, are accepting of screening tools in the health care setting and in the ED (Chisolm *et al.*, 2008; Hurst *et al.*, 2021).

This review included three studies looking to validate screening tools for child sex trafficking (Greenbaum, Dodd and McCracken, 2018; Hurst *et al.*, 2021) or adult sex trafficking (Kaltiso *et al.*, 2021). All of the screening tools showed good sensitivity, but only moderate specificity. Specificity is less of an issue for this tool, as screening positive for these serios risk factors warrants further investigation, and possible referral for psychological or social worker services.

All three studies showed the benefit of screening for sex trafficking in the ED, as many survivors of sex trafficking or exploitation were offered resources and interventions to ensure their safety and rehabilitation (Greenbaum, Dodd and McCracken, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021).

All three studies also emphasized that screening tools must be implemented in conjunction with staff education and training, as well as the formulation and circulation of clear department policies and clinical pathways (Greenbaum, Dodd and McCracken, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021).

5.4.2 Emergency medical care for survivors of sexual violence

Anogenital injuries and non-genital injuries should be treated under already existing trauma and surgical protocols (Linden, 2011; Cybulska, 2013). Non-fatal strangulation is more dangerous, and should be investigated with a CT Angio of the brain and neck, and admission for observation over a 24 hour period (MacDonald *et al.*, 2021; Stellpflug *et al.*, 2022).

No articles were included in the review that discussed new acute emergency treatments for survivors of sexual assault, such as repair of anogenital repair, treatment of non-genital injuries, or assessment and investigation of associated strangulation injuries. Patel et al. did assess the standard of care provided, and found that 100% of patients received acute medical care to attend to genital and non-genital trauma (Patel *et al.*, 2013).

Hornor et al. did define the key indicators of quality medical care for pediatric cases of sexual abuse or sexual assault: “Identification and documentation of acute and chronic ano-genital injuries, evaluation of pregnancy status, and testing for N. gonorrhea and C. trachomatis” (Hornor *et al.*, 2012). The use of specialist trained nurses, pSANE nurses, was shown to improve all three of these measures.

Gilmore et al. assessed the medications prescribed during or after the Sexual Assault Medical Forensic Exam (SAMFE). They found a wide variance on the medications prescribed, often linked to different assault characteristics. This variance in prescribing behaviour is not supported by research or formal protocols, but rather likely a result of survivor and/or doctor assumptions (Gilmore *et al.*, 2022b).

The next priority in the care of the survivor of sexual assault is the testing for STI and HIV, and the administration of antimicrobial prophylaxis for STIs and antiretroviral postexposure prophylaxes (PEP) for HIV (Cybulska, 2013; ACOG, 2014).

The CDC recommends testing female survivors for C. trachomatis, N. gonorrhoeae, and T. vaginalis; and male survivors for C. trachomatis and N. gonorrhoeae; using the new method of Nucleic Acid Amplification Tests (NAATs). They also recommend blood tests for HIV, HBV, and syphilis infection for all survivors of sexual assault (Workowski *et al.*, 2021). The WHO guidelines from 2003 still recommend cultures for C. trachomatis, N. gonorrhoeae, and T. vaginalis (World Health Organization, 2003). The CDC recommends STI prophylaxis of Ceftriaxone 500 mg IM single dose, Doxycycline 100 mg 2 times/day orally for 7 days, and Metronidazole 500 mg orally 2 times/day orally for 7 days; for adult and adolescent females. For adult and adolescent males it is the same but without the metronidazole. Recommendations for HIV PEP initiation are not as strong; and depend on risk factors, a treatment algorithm, and a discussion with the patient (Workowski *et al.*, 2021). However WHO and South African guidelines strongly recommend initiating HIV PEP for survivors who present within 72 hours of the assault (World Health Organization, 2014b; Moorhouse *et al.*, 2015). The American College of Obstetricians (ACOG) and the WHO both recommend offering emergency oral contraception (World Health Organization, 2003; ACOG, 2014). The current recommended first line is mifepristone (25 mg to 50 mg), followed closely in efficacy levonorgestrel (1.5 mg) (Shen *et al.*, 2019).

This integrative review found two articles that looked at new developments in the subthemes of STI prophylaxis, HIV PEP, and emergency contraception. First, Fontenot et al. (2013) found strong support for incorporating the prevention and treatment of human papillomavirus (HPV) into standard post assault care. Secondly Choi et al. (2013) found that a new regiment of levonorgestrel 1.5mg as a single dose was just as effective, and with as low a side effect profile, as the two split doses of 0.75mg. The study strongly recommends this be used as the second line of treatment after mifepristone.

The integrative review looked at 6 pre-post intervention studies that looked at quality improvement methods and iterative processes to improve adherence to CDC guidelines on HIV testing and PEP administration, as well as STI testing and prophylaxis. It also looked to improve adherence to departmental guidelines of providing emergency contraception.

The review shows strong evidence, that order sets, clinical pathways, intensive staff training and education, and a multidisciplinary approach, can greatly improve the care and outcomes for survivors of sexual violence. These interventions were shown to improve: HIV testing (Silva-Nash *et al.*, 2022); HIV PEP initiation (Schilling *et al.*, 2017; Hoehn *et al.*, 2018; Silva-Nash *et al.*, 2022), shorting time before

initiation of PEP (Scannell *et al.*, 2018), testing for STIs (Silva-Nash *et al.*, 2022), STI prophylaxis including HBV vaccination (Britton *et al.*, 2013; Hoehn *et al.*, 2018; Silva-Nash *et al.*, 2022), improving clinician knowledge and confidence with protocols and prescribing medications (Saadatzadeh *et al.*, 2021), improving scheduling of follow ups and referrals (Saadatzadeh *et al.*, 2021), and dispensing of emergency contraception (Hoehn *et al.*, 2018).

These studies present good level of evidence, level 2- quasi experimental, and were a mix of good and high quality. Order sets are not commonly used in our context, yet they have been shown to be very effective in a variety of settings. When paired with clinical decision support tools at the point of care, they can be more effective at improving patient care for a number of conditions (Britton *et al.*, 2013).

Only one study included in this review looked at an intervention to improve the care for survivors of sexual assault in a low income country. Ranney et al. (2011). looked at the effect of establishing a crisis center in a hospital in Western Kenya. The CAR-E program was found to have acceptable levels of HIV PEP administration (63%), STI prophylaxis (84%), testing for pregnancy (73%) and dispensing of emergency contraception (70%). Unfortunately this was a retrospective review, and pre-intervention baseline data was not recorded. Further research is needed on the efficacy and sustainability of these interventions in this setting.

Adherence to HIV PEP amongst survivors of sexual assault has been proven to be intractably low, with adherence rates as low as 40% (Chacko *et al.*, 2012). Factors associated with adherence to HIV PEP include: “health provider encouragement to take PEP, perpetrator known to be HIV-positive, monetary support for transport, the victim of assault attending counseling, being reminded by family/peers to take PEP, and “one-stop” services offering both HIV testing and PEP at initial consultation” (Shubber and Ford, 2021).

One study looked at identifying and addressing one of these barriers. Reynolds et al. (2022) looked at publicly available HIV PEP patient education materials, published by hospitals and health care facilities, and given to survivors of sexual assault on discharge. They found that these materials scored poorly on measures of readability, understandability, and actionability. Research and development of easily accessible patient education materials is needed, as this might have a significant effect on HIV PEP adherence.

Three studies specifically looked at testing for STIs and HIV. Testing for Chlamydia, Gonorrhea, HIV, and Hep B still remain one of the weakest points in adherence to CDC and international guidelines, and resistant to quality improvement programs and interventions (Schilling *et al.*, 2015; Hoehn *et al.*, 2018; Kellogg *et al.*, 2018). In one large retrospective record review, in 38 pediatric hospitals, STI testing was as low as 44% (Schilling *et al.*, 2015). It is theorized that health care providers are hesitant to test for STIs when prophylaxis will be given regardless. However universal STI and HIV testing are important aspects of medical care and public health stewardship. Universal testing allows for the surveillance of communicable diseases, notification of sexual partners, and prevention of reinfection and possible drug resistance (Schilling *et al.*, 2015; Kellogg *et al.*, 2018). The WHO, CDC, American College of Obstetricians and Gynecologists, and American Academy of Pediatrics, all support universal testing of survivors of sexual assault (ACOG, 2014; World Health Organization, 2014b; Schilling *et al.*, 2015).

There was one study that challenged current guidelines on testing for STIs. Kellogg et al. (2018) found that up to 43% of their patients had positive tests for STIs in cases that did not warrant testing under CDC guidelines. They recommend universally testing anal and oral sites for gonorrhea and chlamydia, even when not indicated by the history given by the patients, especially in pediatric and adolescent populations.

Another underexplored part of the literature is pain management in survivors of sexual violence. This review included two studies that explored pain in survivors of sexual assault. However both studies looked at describing patients experiences of pain, and the current treatment of survivors pain. No new research was included that looked at new interventions to address survivors pain.

McLean et al. (2012) showed that survivors of sexual violence most often experienced severe or moderate pain, and in more than one region of the body, and often not associated with areas where they experience physical injury or assault. Gilmore et al. (2022) and McLean et al. (2012) both illustrate that survivors pain is poorly and inconsistently treated. Further research is needed to address this need, while also understanding that sexual assault survivors are at high risk of opioid and prescription drug misuse and dependence (Gilmore, Walsh, *et al.*, 2019).

5.4.3 Forensic care for survivors of sexual violence

There have been several advancements in the collection and testing of forensic evidence recently, including the use of alternative light forms to illuminate DNA evidence or subtle signs of trauma (Mackenzie and Jenny, 2014), to use of colposcopy and digital photography for documentation of injuries (Office on Violence Against Women, 2013), to the use of new DNA amplification techniques to increase DNA yield from forensic evidence collected (Centers for Disease Control and Prevention, 2014).

Two studies included in the review present new developments to testing strategies and recommendations. Nittis, Franco and Cochrane (2016) found oral rinses and peri-oral swabs to be a more effective form of evidence collection than the currently used oral swabs. Hornor et al. (2022) found that testing window periods should be reconsidered, and possibly extended. Forensic evidence was collected in numerous cases after 72 hours in prepubescent children and adolescents. They also found, echoing the findings of Kellogg et al. (2018), that patient history of sexual assault should not determine if forensic samples are taken, and at which sites they are taken from. Ancillary causes of concern should be taken just as seriously when deciding whether to test children for forensic evidence or STIs. These include: prior disclosure to a caregiver or trusted adult, caregiver concern over behaviour, or referral based on circumstantial concern.

Three studies investigated the implementation of SANE or pSANE programs, and their effects on forensic evidence collection, and forensic care. These programs were shown to have a positive effect on key indicators of forensic care: forensic collection, trace forensic evidence yield and identification of perpetrator DNA, and progression of cases through the various stages of the justice system (Campbell, Patterson and Bybee, 2012; Shaw and Coates, 2021; Hornor *et al.*, 2022). They also found an improvement of trauma informed care that prioritizes a survivors' agency, self-determination, and emotional well-being; over the justice systems need for forensic evidence (Shaw and Coates, 2021).

These studies reinforce large amount of research literature showing that specialized training and educational courses for nurses on forensic care have the capability to significantly improve the outcomes for survivors of sexual violence (Campbell, Patterson and Lichty, 2005). They have also been proven to specifically improve judicial outcomes (Nugent-Borakove *et al.*, 2006; Campbell *et al.*, 2012). The

South African Nursing Council has published the regulatory framework for a forensic nursing post graduate course, however there are no tertiary educational institutions currently overing the course (SANC, no date). This presents a large gap in our country's need for high quality forensic care. Jancey, Meuleners and Phillips' (2011) Delphi study illustrates that other countries have a similar need, as nurses have clearly identified lack of forensic education and training as a significant barrier to care for survivors; and have identified the creation of specialized courses and programs as the most needed intervention.

The patient interview and history taking process is very important, as coherent and chronological testimonies are more likely to be well received in court. VanMeter (2021) showed that interviewers that build rapport, give emotional support, and stimulate engagement, get better quality patient interviews with survivors of child abuse. Ranney et al (2011) showed that a standardized clinical encounter for survivors of sexual assault, allow for better history and note taking, and can align the medical notes with the needs of the justice system.

It is essential that health care providers working with survivors of sexual violence are aware of their legislative duties and responsibilities. Most countries have laws dictating mandatory reporting of various forms of sexual violence, most commonly with child sex abuse (Linden, 2011; Bush, 2017). Only one study investigated mandatory reporting of sexual violence to authorities. Shaw and Coates (2021) found that the implementation of a SANE program improved mandatory reporting of child sex abuse. SANE nurses familiarity with the forms and policies involved with mandatory reporting likely improved compliance. More research is needed to investigate mandatory reporting of other forms of sexual violence, such as IPV, elder abuse, and sex trafficking. Further research is also need on the barriers to mandatory reporting, methods to improve it, and the effect of mandatory reporting on patients and parents/ caregivers.

Various studies discussed the structural barriers that survivors encounter in the criminal justice system, though none of them discussed possible solutions or mediating factors. Ranney et al. (2011) demonstrated that low income countries are still far behind high income countries when it comes to forensic programs and technology. The feasibility and outcomes of sexual assault response teams (SARTs) and victim advocates should be explored in LMICs and resource limited settings.

5.4.4 Mental health care for survivors of sexual violence

The use of psychometric tools for the assessments of psychological sequelae is important in survivors of sexual violence, as they are at higher risk of PTSD, suicide ideation, depression, and other psychological conditions (Dworkin *et al.*, 2017). There is strong evidence to support screening for suicide ideation (Cochran, 2019; Gilmore *et al.*, 2020); PTSD (Gillihan *et al.*, 2013); and depression (Cheasty, Clare and Collins, 2002). None of the studies evaluated the effectiveness or effect of psychological screening tools or psychometric tests. However multiple pre-post intervention studies did use them to assess the efficacy of their interventions (Tarquinio *et al.*, 2012b; Kaplan *et al.*, 2018a; Walsh *et al.*, 2020a, 2021a; Gilmore *et al.*, 2021). Nurses and health care providers have identified psychological assessments, and identification of mental health care risks, as a gap in their skills (Ranney *et al.*, 2011).

Sexual violence has been shown to have a stronger association to PTSD than other forms of trauma (Möller *et al.*, 2014). The link between sexual violence and suicide ideation is also well documented, in several contexts (Ullman and Brecklin, 2002; Stein *et al.*, 2010; Dworkin *et al.*, 2017). Early interventions in the emergency department that decrease PTSD symptoms, or reduce the risk of suicide ideation, are an important new field of study. (Amos, Stein and Ipser, 2014; Cochran, 2019; Bertolini *et al.*, 2022). Studies have started to show, contrary to established practice, that debriefing counselling can actually be harmful for survivors of sexual violence. Research is indicating that treatment modalities that are related to cognitive behavioural therapy (CBT) and dialectical behaviour therapy (DBT), are showing better outcomes amongst survivors (Parker and Turner, 2013; Brown *et al.*, 2019). There is currently a large Cochrane systematic review looking at this field of research in order to try and distil best practices going forward, and to suggest new areas of research needed (Brown *et al.*, 2019).

Multiple studies included in this review explored early psychological treatments in the ED for survivors of sexual assault. There was some new modalities that were tested in the ED for the first time. Two studies showed the efficacy in prolonged exposure therapy in addressing dissociation, avoidant behaviours, and reducing symptoms of ASD and PTSD. Both of these studies had positive results, though in small sample sizes, with low quality evidence. Both of these studies were done in Europe in High Income Countries. These studies require duplication with larger sample sizes, and in different settings, and in diverse population groups (Rothbaum *et al.*, 2012b; Bragesjö *et al.*, 2020). Tarquinio *et al.* (2012), also conducted a study with a new modality, for use in the ED. They conducted a study in

France testing eye movement desensitisation and reprocessing (EMDR) in 1 session in ED. Results were good, but the sample size was very small, and no control group was used. Duplication studies were recommended.

A group of researchers, led by Walsh and Campbell, conducted a large randomized controlled trial testing the effects of a brief video intervention. The video was tested for its effect on suicide ideation, PTSD, perceived present control, cigarette smoking, and alcohol and opioid misuse. The video intervention was not an effective treatment for any of these outcomes, as it was only effective for a small subset of the sample population. Generally it was more effective for women who had experienced prior sexual victimization, or women with high risk behaviours such as prior history of binge drinking (Walsh *et al.*, 2017b, 2020a, 2020b, 2021a; Gilmore, Walsh, *et al.*, 2019b; Gilmore *et al.*, 2021). Miller et al. (2015) used the same video intervention, also with mixed results, though their study showed some promise in reduction of anxiety symptoms.

Buchbinder et al. (2021) conducted a qualitative study, and found that survivors found the psychological symptoms and sequela as one of the hardest aspects of recovery. They verbalize feelings of fear, isolation and self-doubt. According to the study, nurses and health care providers should educate their patients on the symptoms they are likely to experience, and reassure them that those symptoms are a normal part of the post-assault experience. The study also recommends a model for interacting with survivors of sexual violence. This models emphasises: asking the patient about their safety; emphasizing they are not to blame for the assault; explaining that symptoms of ASD or PTSD are normal after experiencing sexual assault; and encouraging them to see a mental health expert for counselling.

There have been a number of random controlled trials looking at pharmacological interventions in the acute phase of trauma to prevent PTSD. There is not much empirical evidence to support any pharmacological treatments as yet, but further research with larger sample sizes and control groups are needed. Hydrocortisone especially has shown some moderate beneficial effects in preventing ASD/ PTSD symptoms (Amos, Stein and Ipser, 2014; Bertolini *et al.*, 2022).

None of the studies included in the review researched the efficacy of pharmacological treatments for survivors of sexual violence. Further research on this topic is certainly warranted, including the effects of HIV PEP and emergency contraception on anxiety and ASD symptoms. A study by Gilmore et al.

(2022) showed that victims of partner-perpetrated assault or strangulation were more likely to be prescribed psychiatric medication, though the reasoning for this is unclear.

5.4.5 Follow up care for survivors of sexual violence

There a many benefits to comprehensive follow up care for survivors of sexual assault. The recommendations is that follow up examination be done by a specialist and experienced medical provider, especially in pediatric cases. These specialists should assess for anogenital injury healing, give feedback and follow up care STI and HIV testing, and assess emotional wellbeing and psychological risks such as suicide ideation or PTSD (Gavril, Kellogg and Nair, 2012; Kaplan *et al.*, 2018b).

Prior research has shown follow up rates for sexual assault to be stubbornly low, with adherence as low as 35% (Ackerman *et al.*, 2006). It is important that survivors are given a clear follow up appointment before they are discharged. It is also important that follow up information: time, location, contact details; are written down, as not to overwhelm survivors who are traumatized. Information for psychological support should be given, even if they are not ready for counselling when they present to the ED (Eogan, McHugh and Holohan, 2013).

Two articles included in this review looked to quantify the benefits of follow up care for survivors of sexual assault. Both articles found that follow up examinations by a specialist in care for survivors of sexual assault resulted in a change in a patients diagnoses and/or treatment plan. This was either as a result of the change of anogenital examination findings, persistent or recurrent STI infection after prophylaxis, or the patient requiring hospitalisation upon follow up. This affected up to 23% of the patients examined (Gavril, Kellogg and Nair, 2012; Kaplan *et al.*, 2018b).

Silva et al. (2022) and Gilles et al. (2019) both implemented multi-intervention quality improvement studies. Both of these studies aimed to increase patient adherence to follow up and both studies failed to show improvement. The only study to show a successfully higher adherence to follow up than the established literature was the study by Kaplan et al. (2018). Their study involved a revised and expanded follow up protocol and program, linked to their child protection center.

There were three actions of their program which might have had a positive effect on follow up. First a clear appointment was booked with the patient and/or caregivers before discharge. Second, a telephonic

check-up was conducted on day 3 to assess adherence and tolerance to HIV PEP and to remind the patient or caregivers about their follow up appointment. Lastly a family centered approach to care, by including the parent or caregivers throughout the process. 90% of follow-up patients were accompanied by a parent or caregiver, and parent/caregiver buy-in is known to have a positive effect on follow up care and adherence to treatment (Kaplan *et al.*, 2018).

In this integrative review, there was evidence showing that only 40% of emergency departments offer follow up mental health care services like ongoing counselling (Patel *et al.*, 2013); and that ED nurses and HCP both identified the lack of follow up counselling as a serious deficit the care for survivors. Gilmore, Davidson, *et al.* (2019b), tried to address this gap in their pilot study. They piloted a mobile health application (app) called SC-Safe, where survivors could access mental health education and interventions without the barrier of having to come back to a health care facility. The study was testing the feasibility of such an intervention, and more research is needed to test its efficacy.

5.4.6 Technological aids in the care for survivors of sexual violence

There were a number of studies included in this review that looked at ways that technology, and technological aids or tools, could improve the care for survivors of sexual violence. Multiple studies used a previously validated brief video intervention, called the Prevention of Post-Rape Stress (PPRS) video. Unfortunately these studies had mixed results, with none of them showing improved outcomes for all ED patients. Rather the videos were only successful in very specific subsets of the whole populations sampled (Walsh *et al.*, 2017b, 2020a, 2020b, 2021a; Gilmore, Walsh, *et al.*, 2019b; Gilmore *et al.*, 2021).

There were two technological based interventions that showed promise. Both of these studies were pilot studies, accessing feasibility, and not efficacy as yet. Walsh et al. piloted a tele-health intervention, where tele-SANE nurses could assist less experienced providers with “effectively collecting biological evidence and documenting injuries, supporting and educating patients, and providing quality medical care” (Walsh, Meunier-Sham and Re, 2019a). The intervention also had the effect of offering emotional support and debriefing to less experienced nurse practitioners, which could have a protective effect against secondary traumatization and burnout.

Gilmore, Davidson, *et al.* (2019b) piloted a mobile health application (app), which consisted of patient education materials, exercises, and resources for referral in the local community. Both of these technological aids were well received by survivors of sexual violence, and health care providers (Gilmore, Davidson, *et al.*, 2019a; Walsh, Meunier-Sham and Re, 2019a). More research is needed to test their feasibility to different settings, and their effect on patient outcomes.

5.4.7 Structural and procedural aids in the care for survivors of sexual violence

There were multiple studies that utilized quality improvement study designs to attempt to improve patient outcomes. Most of these utilized structural and procedural changes in their hospitals/ departments as their interventions. The most successful interventions were electronic order sets, clinical pathways, patient education or training, and the involvement of a multidisciplinary team.

5.4.8 Environmental and health care worker factors affecting the care for sexual violence survivors

This review demonstrated that there are still negative health care worker beliefs and behaviours that negatively affect care for survivors of sexual violence. Harmful rape myths and normative beliefs were evident in a study of a Malaysian one-stop crisis center (Chew, Noor and Zaini, 2015). A survey of patient advocates showed perceived implicit bias towards survivors with mental health conditions, and survivors who present intoxicated. It is theorized that negative ED interactions for vulnerable groups can have a detrimental effect on long term help seeking behaviour, and therefor reduce adherence to follow up care (Chalmers *et al.*, 2022). In the research by Jancey, Meuleners and Phillips (2011), specialized nurse practitioners identified a lack of culturally sensitive care for survivors of sexual violence in Australia.

Trauma informed care (TIC) has been widely accepted as the preferred framework when caring for survivors of sexual violence. The fundamental principles of trauma informed care include minimizing distress of the patient, while emphasizing their agency and choice in their own care, and embracing their input and collaboration with the MDT (Cleary and Hungerford, 2015; Raja *et al.*, 2015; Reeves, 2015). None of the articles in this review studied trauma informed care directly, or measured its outcomes. However a number of them incorporate the principles of trauma informed care into their recommendations.

Hoffman-Walbeck et al. (2016) recommend a patient centered approach to improve care; including guaranteed provision of an HCP of the same gender as the victim, reducing time pressure and ancillary tasks of HCP providing care to survivors of sexual violence, and offering emotional support to HCP to prevent burnout.

Buchbinder et al. propose clear and consistent messaging from nurses that looks to emphasize 4 key TIC concepts: your safety is important to us; the assault was definitely not your fault; PTSD symptoms of fear, flashbacks and avoidance are normal after acute trauma; and everyone who experiences such trauma could benefit from consulting a mental health care professional (Buchbinder *et al.*, 2021).

Lechner *et al.* (2021) looked to assess the level of TIC given in specialized SANE care. They found that SANEs scored highly in several TIC domains, including: taking survivors claims seriously; communicating that it was not their fault; showing empathy; explaining all examinations and interventions beforehand; and giving them adequate information about resources for follow-up care.

Walsh, Meunier-Sham and Re (2019) incorporated the principles of choice, agency, and privacy in their design of their tele-medicine intervention. While Ranney et al. (2011) developed their CAR-E program with the principles of prioritizing patient safety and privacy, and offering culturally appropriate care.

5.5 Summary of Chapter Five

Chapter 5 presents the findings of the integrative review, using Whittemore and Knafl's components of data analysis: data reduction, data display, data comparison, conclusion drawing, and verification. The eight major themes. Eight themes emerged from the data: screening patients for sexual violence, emergency medical care for survivors, forensic care for survivors, mental health care for survivors, follow up care for survivors, technological aids and advancements in care, structural and procedural aids that can improve care, and lastly environmental and health care worker factors that affect care. The relationship and interplay between these themes was discussed.

CHAPTER SIX: PRESENTATION

6.1 Introduction

This chapter presents the major findings of the integrative literature review, while critiquing them on their feasibility to the South African context as a resource limited setting. It aims to relate each major finding to the function of the nurse, and the emergency care nurse in particular.

The chapter assesses whether the integrative review succeeded in answering the research question, and achieving its stated objectives. It also assesses the appropriateness of the research design and methodology in achieving these objectives.

The chapter offers its recommendations for practice, education and training, and research; in the field of the emergency management of survivors of sexual violence. It also presents the limitations of the study.

6.2 Major Findings

There are several major findings from the study. These findings will be discussed in relation to their thematic groups: screening for sexual violence, emergency medical care, forensic care, mental health care, follow up care, health care worker factors, technological advancements, and those applicable in a resource limited setting.

These can also be further classified into 3 larger overarching characteristics: improvements in clinical practice and interventions; development of specialized programs, centers, and paradigms; and new innovations, mostly technology assisted.

For improvements in clinical practice and interventions; the first recommendation is that certain vulnerable populations should be screened for various forms of sexual violence, especially the screening of children for child abuse. Secondly, quality improvement efforts that utilize a combination of: order sets, clinical pathways, and staff training programs; have a significant ability to credibly improve medical and forensic care. Third, international guidelines on testing for STIs and forensic evidence may require updating, especially with recent technological improvements. Forth, prolonged exposure and

ESMD have shown positive signs in treating PTSD in small studies. Duplication studies and meta-analysis are still required.

The next grouping is the development of specialised programs, centers, and paradigms. Firstly, one-stop crisis centres that are integrated into large specialist hospitals have the ability to provide high quality medical, forensic, and mental health care in lower and middle income countries.. Secondly, specialized SANE and pSANE programs have been proven to improve forensic care and judicial outcomes of forensic cases. Third, provision of and adherence to follow-up care remain poor, and research is needed to identify barriers and enablers to good follow-up care, as well as the development of specialised follow up programs. Lastly, Trauma Informed Care (TIC) has been widely accepted and integrated as best practice in the care of survivors of sexual violence. It is imperative that it gets integrated into practice, institutions, and the education of health care professionals in South Africa and other resource limited settings.

The last group of recommendations pertains to new and groundbreaking solutions. Technological aids and interventions have shown innovative ways to expand access and increase feasibility of care for survivors of sexual violence. However, these advancements are still in their infancy. The use of telemedicine to assist or augment a Sexual Assault Medical Forensic Examination (SAMFE) is especially encouraging. Further testing is required, and should be encouraged and spotlighted.

6.2.1 Major findings related to screening for sexual violence

The first major finding is the recommendation that certain vulnerable populations be screened for various forms of sexual violence. Screening tools are available for the screening of intimate partner violence (Paterno and Draughon, 2016); elderly abuse (Hoover and Polson, 2014); child sex trafficking (Greenbaum, Dodd and McCracken, 2018); and child abuse and maltreatment (Hoft and Haddad, 2017; Chen *et al.*, 2022). The two screening tools reviewed in this study, for child sex trafficking and adult sex trafficking, both showed good sensitivity and reliability. They also improved outcomes by identifying a vulnerable population and linking them to urgently needed services and care (Greenbaum *et al.*, 2018; Hurst *et al.*, 2021; Kaltiso *et al.*, 2021). However the strongest recommendation with regards to screening is that all paediatric patients presenting to hospital should be screened for child abuse and neglect. This is in-line with international guidelines (Escobar *et al.*, 2019; Hoedeman *et al.*, 2021). The

studies included demonstrated that detection of child abuse is higher in hospitals that screen for it (Louwers *et al.*, 2011; Hoedeman *et al.*, 2021).

There have been efforts to validate international screening tools for child abuse to the South African context (Meinck *et al.*, 2018; Neelakantan *et al.*, 2022). However to our knowledge, no screening tools have been validated or implemented in a hospital setting, or in a paediatric ED. As discussed in chapter 2, South Africa has high levels of child sex abuse. Methods of recognizing it and referring child survivors of sex abuse to social services are imperative. Recognition is also important so that medical, forensic, and psychological care can be given.

The role of the ED nurse in the screening process is central. Most screening practices occur along with triage, or upon initial assessment in the ED. Nurses should be educated on the importance of screening tools, and trained to implement them.

6.2.2 Major findings related to emergency medical care

This integrative review included six quality improvement studies that looked to improve emergency medical care for survivors of sexual violence. These pre-post intervention studies used multi-step designs to attempt to improve adherence to: STI testing, STI prophylaxis administration, HIV testing, initiation of HIV PEP, administering emergency contraception, and follow-up care. The best results were achieved through the implementation of electronic order sets, clear clinical pathways, clear and accessible department policies, and targeted staff training. Studies found that updated and accurate protocols are not efficient on their own to improve care for survivors of sexual violence. Clinical decision making tools like electronic order sets and clinical pathways need to be available and accessible at the point of care. Education and training are especially important to improve STI testing as it appears that medical providers may be hesitant to test for STIs, as they will treat the patient with STI prophylaxis regardless of the test results, and out of fear of jeopardizing a survivors credibility in a court case (Schilling *et al.*, 2015; Kellogg *et al.*, 2018).

All of the interventions mentioned above: order sets, clinical pathways, clear and accessible department policies, and targeted training of staff, are feasible and applicable in the South African setting. No studies could be found on the use of electronic or paper order sets in our setting, however there is plenty of research done on clinical pathways and staff training interventions to improve care for various

conditions in South Africa (Vanhaecht *et al.*, 2006; Platz, 2019; Naidoo and Pattinson, 2020). Electronic Order Sets would not be feasible in our setting, as most patient medical records remain on paper. However it is possible to implement paper order sets, or posters containing the order sets, that are easily accessible in an ED unit.

Order sets normally involve instructions on which line of pharmacological treatments should be prescribed. This relates primarily to ED doctors and clinical associates. However the implementation and auditing of clinical pathways is often the responsibility of unit managers, clinical facilitators or preceptors, and shift leaders of a unit. Unit managers should be part of the multi-disciplinary team involved in drafting department policies, and responsible for ensuring they are readily accessible for staff.

Ranney et al.'s study on a one-stop crisis centre in Western Kenya was important, as it was the only study included in this integrative review that looked at an active intervention in a lower or middle income country like South Africa. The study was relevant, because it looked at the creation of a one-stop crisis centre much like our Thuthuzela Centres. However unlike our crisis centres, this CAR-E program was integrated into a large specialist hospital in Western Kenya, whereas our centres are mostly stand alone, or attached to a CDC (Briginshaw *et al.*, 2018). Attaching it to a tertiary, academic, or training hospital allows the centre to utilize specialist services which may be needed by survivors of sexual violence, such as: Trauma Surgeons, Gynaecologists, Psychologists, Psychiatry, Infectious Diseases, Social Workers, and Child Protection Services. Studies in South Africa have found our crisis centres to have a deficit in post sexual assault mental health care (Abrahams and Gevers, 2017). Ranney et al.'s study encounters similar deficits in care, as only 44% of their patients received counselling (Ranney *et al.*, 2011). More research is needed to look at ways of expanding access and uptake of mental health care to survivors of sexual violence in low and middle income countries.

6.2.3 Major findings related to forensic care

The study had several findings which challenged current international recommendations and guidelines on forensic testing. Firstly, testing for forensic evidence and STIs should not be dependent on survivor disclosure alone (Kellogg *et al.*, 2018; Hornor *et al.*, 2022). Survivors' accounts of the sexual assault can

often be incomplete and minimalizing. Survivors often present in a state of acute traumatisation, which can impair their recollection, cause them to want to avoid certain details of the trauma, and cause the them shame and embarrassment. Results from this review support testing at all three important body sites for forensic material, especially in paediatrics. To be clear this should always be done with the survivors full informed consent and understanding of the procedure, or informed consent of the parents/ caregivers in the case of children. The evidence from this review also suggests that time frames for when evidence collection should be extended, especially in pre-pubertal children (Hornor *et al.*, 2022); and that oral rinses in combination with peri-oral swabs should be used instead of oral swabs when testing for forensic evidence in the mouth.

It is unclear what the cost analysis of such extended forensic testing would be. In South Africa, there is already a tremendous burden on our forensic services (Reid, Martin and Heathfield, 2020; Molelekwa, 2021). It is there for unlikely that an expansion in testing protocols would be feasible and sustainable. However it is not the role of the health care provider to only collect forensic evidence that can be tested at present. It is good practice to collect as much forensic evidence as possible, for testing now and possibly in the future when technology and capabilities improve.

It is the role of the ED nurse to advocate for the patient, and ensure that a patient centred approach is utilized when collecting forensic evidence. The procedure, and possibility of positive DNA yield, should be fully explained to the patient. If the patient wishes to collect as much forensic evidence as possible for a future case, then the ED nurse should advocate for a more inclusive testing strategy than currently recommended.

The other finding from the literature review is that specialist programs; such as SANE, pSANE, and tele-SANE nurses; greatly improve the quality of forensic care, forensic outcomes, and judicial outcomes for survivors of sexual assault. Judicial outcomes in South Africa are currently very poor. Of reported cases of rape, only 50.5% resulted in an arrest, 42.8% charged in court, a conviction for any crime in only 6.2%, and a conviction for rape in only 4.1% of cases (Vetten *et al.*, 2008).

Urgent research and interventions are needed to improve factors of forensic care contributing to this inadequate legal response to survivors of sexual violence. Currently there are no tertiary education institutes offering a specialized course in forensic nursing (SANC, no date), and to our knowledge no formalized courses for sexual assault nurses examiners/ practitioners in South Africa. With the requisite

political will, a SANE program could be feasible in South Africa, but first a course for forensic nursing, and for SANE nursing, needs to be developed.

The role of nurses in a SANE course and program is self-evident and fundamental. Nurses would be central to formulating such a course, training other nurses, developing culturally appropriate SANE programs, implementing these programs, and researching their efficacy in our context.

6.2.4 Major findings related to mental health care

The integrative review includes a number of studies that test new psychodynamic interventions, in the acute emergency setting, for survivors of sexual violence. Prolonged exposure (PE) therapy and eye movement desensitisation and reprocessing (EMDR) therapy have both shown promising results in small pilot studies. Further research is needed to duplicate these studies and test these interventions in different contexts, with diverse populations. Prolonged exposure therapy has been tested in South Africa, with positive results. Research has even shown it to be feasible for nurses to provide prolonged exposure therapy in the community to good effect (Rossouw *et al.*, 2018; Booysen, 2021). However to our knowledge it has not been adapted to the hospital setting and not to survivors of sexual assault in the acute post-assault phase in South Africa.

The role of the nurse in implementing new treatment modalities could be significant. As shown in various studies, CBT and DBT based treatments can be provided by nurses, given the right education and skills training. Empowering nurses to provide treatments such as prolonged exposure therapy could greatly improve access and uptake of mental health care services in survivors of sexual violence.

6.2.5 Major findings related to follow up care

This review reiterated current literature which shows that adherence to follow up care is poor amongst survivors of sexual violence. Multiple quality improvement studies in the review failed to improve follow up rates. Only one study in our review was able to achieve higher follow up rates. They emphasized a family centred approach, by including parents and/or caregivers in every aspect of care

and treatment plans. They also implemented a telephonic check-up on day 3 that reminded parents/caregivers of the scheduled follow up given before discharge (Kaplan *et al.*, 2018a).

Preliminary research has been done in South Africa on follow-up care post sexual assault, exploring enablers and barriers to good follow up care. Patient centred care, as well as pro-active follow up methods have been recommended as methods to improve follow-up care, and adherence to care (Roland *et al.*, 2012; Holton, Joyner and Mash, 2018). More research is needed to test the efficacy of the interventions discussed in these studies.

Nurses have an important role in the improvement of follow-up care, and in expanding access to follow-up care. Follow-up care should be integrated into primary health care services for chronic conditions (Holton, Joyner and Mash, 2018). The use of community health care nurses and workers is also promising in that it brings services to vulnerable people who need them, and who may face significant socioeconomic barriers to accessing care (Rossouw *et al.*, 2018).

6.2.6 Major findings related to health care worker factors that affect care

This integrative review demonstrated that harmful health care worker beliefs, attitudes, and implicit biases still have a detrimental effect on the holistic care given to survivors of sexual violence. Trauma informed care has been vastly accepted as a model of best care when treating survivors of sexual violence. The key components of the trauma informed care theory include survivor agency, survivor choice, ensuring safety of the survivor, and including the survivor in the MDT so that care can be patient centred (Wilson, Pence and Conradi, 2013).

Trauma informed care was integrated into the findings and recommendations of many of the research papers included in this integrative review. TIC was found to improve medical care, forensic care, SANE programs, telemedicine programs, and one-stop crisis centres.

Buchbinder et al. proposed 4 imperative messages that nurses must communicate to survivors of sexual assault. These were:

"**S**afety is important to me. Do you have a safe place to go? Do you have a safe place to go, away from your assailant?

Ain't your fault! This sexual assault was not your fault.

Normal to have posttraumatic symptoms. Feeling very on edge, or having sudden memories of the assault, are common and normal in the days and weeks after an assault.

Everybody going through something like this would benefit from seeing a mental health expert."

These can be remembered by the Acronym SANE.

Studies have been done in South Africa that look to adapt trauma informed care (TIC) to our cultural context. These studies have applied TIC to HIV prevention and treatment (Sales, Swartzendruber and Phillips, 2016), and to substance use and sexual risk reduction interventions (Myers *et al.*, 2019), but not to post-sexual violence and sexual assault care, and not to the hospital and emergency department setting.

The nurse's role in establishing trauma informed care is central. Trauma informed care principles must be integrated into nursing practice; nursing education and training; nursing management of emergency departments, programs, and hospitals; and in nursing research around sexual violence.

6.2.7 Major findings related to technological advancements

The integrative review included multiple articles looking at technological innovations and tools to improve the care for survivors of sexual violence. Two studies in particular showed promising results in testing the feasibility of a tele-SANE program (Walsh, Meunier-Sham and Re, 2019), and a mobile health application (App) (Gilmore, Davidson, *et al.*, 2019). Both of these were pilot studies testing feasibility and usability, and the efficacy of these interventions still warrants further research.

The feasibility of these interventions in our setting is complicated by our infrastructure limitations and challenges with reliability of our power supply. The mobile app intervention appears to be more feasible and applicable, as mobile phone app interventions have been tested and shown to be effective in South

Africa (Barron *et al.*, 2018). Further innovation and research should explore using technology to expand access to care, especially mental health care. Telephonic consultation and oversight by sexual abuse specialists has also been shown to improve health care providers' examinations and care (Kaplan *et al.*, 2018a). This intervention is absolutely feasible to South Africa, and should be tested as a way to expand care to rural and resource limited areas in our country.

6.2.8 Major findings applicable to a resource limited setting and the South African context

There are several major findings from the study that are replicable in a resource limited setting, and should be applicable to our South African context.

First, and arguably most importantly, is the recommendation that trauma informed care be integrated into all aspects of post sexual assault care. This includes the working culture of facilities caring for survivors, and the training and education of health care practitioners (Wilson, Pence and Conradi, 2013). Emergency Care personnel in resource limited settings have self-reported a lack knowledge and education around trauma informed care (Hoysted *et al.*, 2018).

A lot of research and work has been done around integrating a trauma informed approach in the context of HIV care in South Africa (Sales, Swartzendruber and Phillips, 2016; Brown and Adeagbo, 2022). The Improving AIDS Care after Trauma (ImpACT) program was specifically implemented to address trauma from sexual violence, and has been shown to improve engagement with and adherence to long term HIV care (Sikkema *et al.*, 2018).However, there is very little research conducted on the use of a trauma informed approach in post-sexual assault care in resource limited settings.

Secondly, screening for sexual violence upon presentation to a health care facility is replicable in a resource limited setting. However, screening for sexual violence is not as simple as introducing a validated screening tool. It requires adaptation of the tool to the local context; being mindful of cultural insensitivity, health care worker and community engagement - to ensure buy in and sustainability of programs; as well as establishing resources and a referral network for when survivors screen positive. However when these frameworks are in place, and staff are sufficiently trained and engaged, screening at health care facilities can be successful in low resource settings (Schwab-Reese and Renner, 2018).

Screening women for inter-partner violence has been shown to be feasible in the South African context (Christofides and Jewkes, 2010; Rees, Zweigenthal and Joyner, 2014; Pallitto *et al.*, 2016).

Third, the use of quality improvement programs that utilize order sets, clinical pathways, and national policies or international clinical guidelines. This is a complicated task in a resource limited setting. The studies that utilized these methods in the review predominantly used electronic medical records. Electronic medical records make the use of order sets, clinical pathways, and clinical guidelines or policies readily available at the bedside. This makes their implementation and adherence more feasible (Chan *et al.*, 2012; Britton *et al.*, 2013; Schilling *et al.*, 2015). However, an electronic medical record or digital platform is not mandatory when implementing order sets, clinical pathways, policies and guidelines. Implementation of order sets and pathways into the handwritten medical notes has been successful in improving post sexual assault care in studies in resource limited settings (Kilonzo, 2009; Ranney *et al.*, 2011). Order sets and clinical pathways have also been demonstrated to be successful in other medical fields in resource limited settings, such as neonatology (Hansen *et al.*, 2015). There is a shortage of studies examining the efficacy of order sets in the South African context, and none specifically looking at post sexual assault care.

Forth, the efficacy of one-stop crisis centres; that can integrate and provide all aspects of post-sexual assault care; is a finding that has already been implemented in resource limited settings. Studies have shown these to be successful in improving post-sexual assault care in sub-Saharan Africa and in South Africa (Kilonzo, 2009; Ranney *et al.*, 2011; Briginshaw *et al.*, 2018; Sepeng and Makhado, 2019). However these centers still struggle with many of the same structural challenges as national hospitals and emergency departments, such as the lack of modern forensic care, and resources for acute mental health care. Therefor crisis centers can only be as successful as the national health care infrastructure allows it to be, especially in resource limited settings.

Fifth is the introduction of SANE and SART programs. There has been promising work done in Africa (Ranney *et al.*, 2011), and in South Africa (Kim *et al.*, 2009; Sepeng and Makhado, 2019) to create nurse driven post-sexual assault care. However there remains a reluctancy for nurses to conduct the physical examination, and in some instances legislation or national policy stipulates that the physical examination must be performed by a doctor (Kim *et al.*, 2009; Ranney *et al.*, 2011).

The field of forensic nursing remains poorly developed in South Africa, largely due to systemic and institutional barriers. Although the South African Nursing Council (SANC) has published defined core competencies for a specialized forensic nurse (SANC, 2014), they have not recognized it as a formal speciality in nursing. This means that forensic nurses are excluded from the occupation specific dispensation (OSD benefit, a government incentive to attract and retain talent and skill in essential fields in health care. The forensic nurses' role remains poorly defined, by the South African Nursing Council (SANC), by the government, and in terms of legal credibility in the courtroom (Duma and De Villiers, 2014; Sebaeng and Duma, 2017). According to the SANC website, there are no public or private educational institutions that offer a specialized course in forensic nursing ('Education Institutions – SANC', no date). There is frustration on behalf of South African higher education institutions on the lack of recognition and prioritization of forensic nursing from SANC and the nursing profession in South Africa ('Training of Forensic Nurses: what universities say', 2013). Implementation of SANE and SART programs have the ability to greatly improve post-sexual assault care in resource limited settings. However this would require large structural and educational transformations in order to train knowledgeable and highly skilled nurse practitioners, and the cost involved in such changes is unknown. Such an effort and investment should be justified given the prevalence of sexual violence in our country, and the myriad of negative public health effects it causes.

Lastly, technological advancements are usually expensive and not replicable in a resource limited setting. However, as demonstrated in a US study (Walsh, Meunier-Sham and Re, 2019), utilizing telehealth for SANE examinations and care does have the ability to make specialized skills and expertise available in remote or rural areas, including a resource limited settings, such as a tribal hospital on Native American land. In this way telehealth or telemedicine has the ability to address many of the barriers to quality healthcare in a resource limited setting; "geographic complexity, urban-rural disparity, poor accessibility, shortage of healthcare professionals, inadequate health facilities, higher cost, and time" (Siddiquee *et al.*, 2020). Telehealth has been adapted to many resource limited countries around the world, including sub-Saharan Africa (Scott and Mars, 2015). Although isolated projects have shown good results in sub-Saharan Africa and in South Africa, much work still has to be done in order to establish the infrastructure and protocols that would integrate telehealth into health care processes (Rabe, 2022). More research is needed to test the feasibility of telehealth in post-sexual assault care in resource limited settings and in South Africa.

6.3 Research Summary

The purpose of this study was to explore the research literature around the emergency management of patients who have experienced sexual violence. From this literature, the study aimed to collate a set of advancements and innovations to care, which have been shown to improve patient outcomes or satisfaction. These advancements and innovations would then be critiqued on their feasibility to resource limited settings, and specifically to the South African context with its unique challenges.

6.3.1 Research Objectives

The fulfil this purpose, the study was broken down into 4 objectives:

1. To compile and distil the current research on the emergency management of patients who have experienced sexual violence.
2. To synthesize the findings into a set of advancements and innovations in the emergency management of patients who have experienced sexual violence.
3. To examine which practices and interventions are applicable to a resource limited setting.
4. To examine which practices and interventions are applicable to the South African setting.

The first objective is fulfilled as 2142 original articles were assessed from five different databases and from grandfather searches. A total of 300 articles were read and analysed in full, and 47 articles were then included and coded for thematic analysis using qualitative coding software. Eight major themes, and 34 subthemes were identified.

The second objective was fulfilled, as majors findings were identified in 8 thematic groups: screening for sexual violence, emergency medical care, forensic care, mental health care, follow up care, health care worker factors, technological advancements, and those applicable in a resource limited setting.

The third and fourth objective was explored in the discussion session. Certain interventions were tested and shown to be beneficial in resource limited settings. However, further research is required to test the hypothesis of which finding would and wouldn't be applicable in a resource limited setting, and in the South African context.

The integrative review research design proved effective and appropriate at fulfilling the research objectives. The integrative review is particularly useful at exploring a complex health care issue like sexual violence. It is effective as it is able to synthesize a wide variety of research methods and designs, which allows a greater holistic understanding of complex issues (Whittemore et al., 2014; Whittemore & Knafl, 2005).

6.4 Strengths of the Research

The scope of the integrative literature review allowed for a broad search of the literature on the topic. The flexible inclusion criteria allowed for the inclusion of diverse research methodologies, settings, and sample sizes. This allowed for a comprehensive investigation of a broad and complex topic, the emergency management of sexual violence.

6.5 Limitations of the Research

The integrative review excluded studies that weren't conducted in English. The databases included in the review also had a western-centric focus. This presented a selection bias, and possibly skewed our results to more western-centric and high income countries. Only two studies were included that represented low or middle income countries. Results may there for not be applicable to all contexts.

The search terms used in the integrative review attempted to limit the search results to the emergency care setting. This may have had the unintended effect of excluding articles that were relevant to the research question. For practical reasons the database search had to be focused and narrowed, all literature on sexual violence could not be feasibly reviewed.

The synthesis of knowledge from different research designs, methodologies, and quality may result in lack of rigor. All attempts to guard against threats to validity and rigor were made, including critical appraisal of the data, and transparent evaluation of the data.

Survivors of sexual violence represent a vulnerable population group. Studies can there for be difficult to conduct, due to ethical considerations. The nature of sexual assault also makes it difficult to get large sample sizes for interventions. This can be a threat to the validity of studies included in the review.

Interventions for survivors of sexual violence are also hard to assess due to poor adherence and follow up rates. Large attrition of patients due to dropping out rates also signifies a threat to validity and reliability.

6.6 Recommendations

6.6.1 Recommendations for practice

It is the recommendation of the research that trauma informed care theory and practice be integrated into the care for survivors of sexual violence. Screening tools should be integrated into emergency departments to screen vulnerable populations for various forms of sexual violence. This recommendation is strongest for paediatric patients presenting to an ED.

The research also recommends that order sets, clinical pathways, and staff training be used to improve the care for survivors of sexual violence.

Innovative solutions should be implemented to improve access to mental health care services and follow-up care services. Proactive follow-up methods should be introduced to improve follow-up rates.

CBT and DBT related psychological interventions should replace reflective debriefing and supportive counselling where feasible and sustainable.

6.6.2 Recommendations for education and training

It is the recommendation of the research that a course for forensic nursing, and for sexual assault nurse practitioners, which is relevant and contextual to the South African context, be developed and initiated.

Trauma informed care should form the basis of any course or training regarding the case of survivors of sexual violence. Nurses caring for survivors of sexual violence are in need of training in the effective collection and storage of forensic evidence and DNA material; to improve forensic and judicial outcomes of sexual assault cases.

It is also recommended for holistic care, that nurses caring for survivors of sexual violence are trained to provide CBT and DBT based psychodynamic interventions in the acute presentation phase; and then be able to refer onwards for continuity of care.

6.6.3 Recommendations for research

Research is needed to validate screening tools for the South African context, for in hospital screening for child abuse and screening for other forms of sexual violence.

The integration of the Thuthuzela crisis centers with pre-existing long term mental health care services, in order to improve the access to psychological care for survivors of sexual violence must be investigated to improve collaboration between services offered to this cohort of patients.

Urgent research is needed on the health care factors that lead to poor forensic and judicial outcomes amongst sexual assault cases in South Africa. As such, research is needed on how to adapt US SANE programs to the South African context so that patient centred care and culturally appropriate care can be implemented. The sustainability of these programs should also be researched.

Explorative research and pilot studies should be done on the development of technological aids to assist post-sexual assault care in South Africa. Research should explore the feasibility and effectiveness of telephonic consultation or oversight from sexual assault specialist to HCP in rural and low resource settings. This includes the testing of mobile telephone apps that improve patient education and recovery, and refer them to services in their community. Research should also explore the utilization of community health care workers to improve utilization of follow up services.

Further research is needed internationally on the effectiveness of Prolonged Exposure (PE) therapy and eye movement desensitisation and reprocessing (EMDR) therapy in the acute emergency setting for survivors of sexual assault. Research in South Africa is needed to investigate the effectiveness of nurse led PE and/or EMDR therapy.

6.7 Conclusion

This integrative research review presents a synthesis of current knowledge around the acute medical, forensic and psychological care for survivors of sexual violence. There are numerous major

advancements in care for this vulnerable group. However large deficits in care remain. Future research should focus on screening patients for sexual violence, incorporating trauma informed care for survivors of sexual violence, improving mental health care and psychological outcomes for survivors, and improving the provision of acceptable follow up services. South Africa has a tremendous need to improve the prevention of sexual violence, and to improve the care for the many survivors of sexual violence in our country.

ANNEXURE 1: JOHN HOPKINS PERMISSION STATEMENT FOR CRITICAL APPRAISAL TOOLS

JOHNS HOPKINS EBP MODEL AND TOOLS- PERMISSION

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ANNEXURE 2: JOHN HOPKINS RESEARCH EVIDENCE APPRAISAL TOOLS (APPENDIX D)

Hierarchy of Evidence Guide

Appendix D

Note: Refer to the appropriate Evidence Appraisal Tool (Research [Appendix E] or Nonresearch [Appendix F]) to determine quality ratings.

	Evidence Level	Types of Evidence
Research Evidence (Appendix E)	Level I	• Experimental study, randomized controlled trial (RCT) • Explanatory mixed methods design that includes only a Level I quaNtitative study • Systematic review of RCTs, with or without meta-analysis
	Level II	• Quasi-experimental study • Explanatory mixed methods design that includes only a Level II quaNtitative study • Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis
	Level III	• Nonexperimental study • Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis. • Exploratory, convergent, or multiphasic mixed methods studies • Explanatory mixed methods design that includes only a Level III quaNtitative study • QuaLitative study • Systematic review of quaLitative studies with or without meta-synthesis

Nonresearch Evidence (Appendix F)	Level IV	Opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence. Includes: • Clinical practice guidelines • Consensus panels/position statements
	Level V	Based on experiential and non-research evidence. Includes: • Scoping reviews • Integrative reviews • Literature reviews • Quality improvement, program or financial evaluation • Case reports • Opinion of nationally recognized expert(s) based on experiential evidence

ANNEXURE 3: JOHN HOPKINS RESEARCH EVIDENCE APPRAISAL TOOL (APPENDIX E)

Does this evidence answer the EBP question?	☐ Yes → Continue appraisal ☐ No → STOP, do not continue evidence appraisal
Article Summary Information	
Article Title:	
Author(s):	Number:
Population, size, and setting:	Publication date:
Complete after appraisal	
Evidence level and quality rating:	
Study findings that help answer the EBP question:	

Article Appraisal Workflow

Is this study:

☐ **QuaNtitative** (collection, analysis, and reporting of numerical data)

Numerical data (how many, how much, or how often) are used to formulate facts, uncover patterns, and generalize to a larger population; provides observed effects of a program, problem, or condition. Common methods are polls, surveys, observations, and reviews of records or documents. Data are analyzed using statistical tests.

➔ Go to Section I for QuaNtitative leveling

☐ **QuaLitative** (collection, analysis, and reporting of narrative data)

Rich narrative data to gain a deep understanding of phenomena, meanings, perceptions, concepts, and experiences from those experiencing it. Sample sizes are relatively small and determined by the point of redundancy when no new information is gleaned, and key themes are reiterated (data saturation). Data are analyzed using thematic analysis.

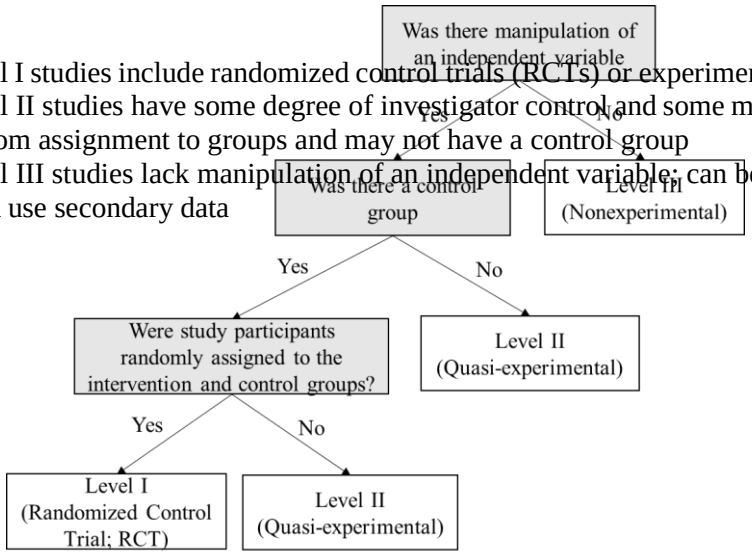
Often a starting point for studies when little research exists; may use results to design empirical studies. Common methods are focus groups, individual interviews (unstructured or semi-structured), and participation/observations.

➔ Go to Section II for QuaLitative leveling

☐ **Mixed methods** (results reported both numerically and narratively)

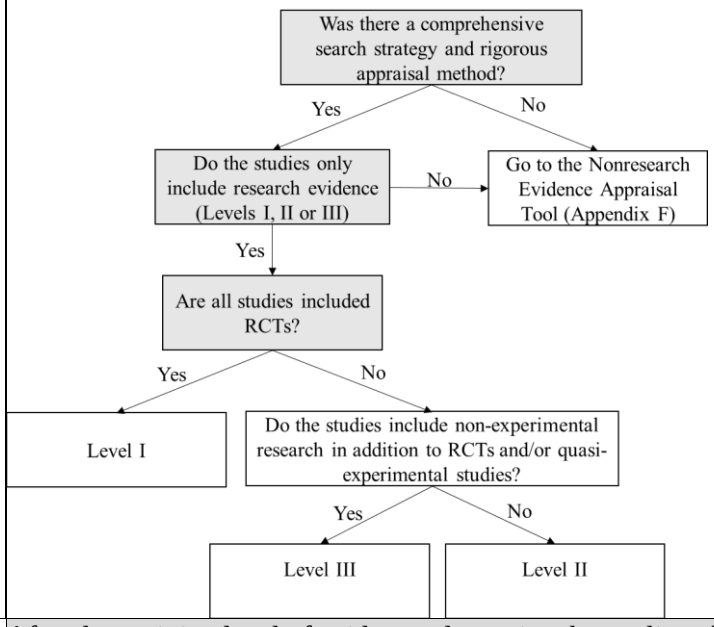
A study design (a single study or series of studies) that uses rigorous procedures in collecting and analyzing both quaNtitative and quaLitative data. *Note*: QuaNtitative survey designs with open-ended questions do not meet criteria for mixed methods research because those questions are not approached using strict quaLitative methods. Mixed methods studies provide a better understanding of research problems than using either a quaNtitative or quaLitative approach alone.

➔ Go to Section III for Mixed Methods leveling

Section I: QuaNtitative Appraisal				
A	Is this a report of a single research study?	☐ Yes → Continue to decision tree ☐ No → Go to Section I: B		
Level	Level I studies include randomized control trials (RCTs) or experimental studies Level II studies have some degree of investigator control and some manipulation of an independent variable but lack random assignment to groups and may not have a control group Level III studies lack manipulation of an independent variable; can be descriptive, comparative, or correlational; and often use secondary data 			
Quality	After determining the level of evidence, determine the quality of evidence using the considerations below:			
	Does the researcher identify what is known and not known about the problem?	☐ Yes	☐ No	
	Does the researcher identify how the study will address any gaps in knowledge?	☐ Yes	☐ No	
	Was the purpose of the study clearly presented?	☐ Yes	☐ No	
	Was the literature review current (most sources within the past five years or a seminal study)?	☐ Yes	☐ No	
	Was sample size sufficient based on study design and rationale?	☐ Yes	☐ No	
	If there is a control group: • Were the characteristics and/or demographics similar in both the control and intervention groups? • If multiple settings were used, were the settings similar? • Were all groups equally treated except for the intervention group(s)?	☐ Yes ☐ Yes ☐ Yes	☐ No ☐ No ☐ No	☐ N/A ☐ N/A ☐ N/A
	Are data collection methods described clearly?	☐ Yes	☐ No	
	Were the instruments reliable (Cronbach's α [alpha] ≥ 0.70)?	☐ Yes	☐ No	☐ N/A
	Was instrument validity discussed?	☐ Yes	☐ No	☐ N/A
	If surveys or questionnaires were used, was the response rate ≥ 25%?	☐ Yes	☐ No	☐ N/A
	Were the results presented clearly?	☐ Yes	☐ No	
	If tables were presented, was the narrative consistent with the table content?	☐ Yes	☐ No	☐ N/A
	Were study limitations identified and addressed?	☐ Yes	☐ No	

	Were conclusions based on results?	☐ Yes	☐ No	

Section I: QuaNtitative Appraisal (continued)	
Quality	Circle the appropriate quality rating below:
	A High quality: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence. **B Good quality:** Reasonably consistent results; sufficient sample size for the study design; some control; fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. **C Low quality:** Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.
Record findings that help answer the EBP question on page **1**	

Section I: QuaNtitative Appraisal (continued)			
B	Is this a summary of multiple sources of research evidence?	☐ Yes → Continue to decision tree ☐ No → Use the Nonresearch Evidence Appraisal tool (Appendix F)	
Level			
Quality	After determining level of evidence, determine the quality of evidence using the considerations below:		
	Were the variables of interest clearly identified?	☐ Yes	☐ No
	Was the search comprehensive and reproducible? • Key terms stated • Multiple databases searched and identified • Inclusion and exclusion criteria stated	 ☐ Yes ☐ Yes ☐ Yes	 ☐ No ☐ No ☐ No
	Was there a flow diagram that included the number of studies eliminated at each level of review?	☐ Yes	☐ No
	Were details of included studies presented (design, sample, methods, results, outcomes, strengths, and limitations)?	☐ Yes	☐ No
	Were methods for appraising the strength of evidence (level and quality) described?	☐ Yes	☐ No
	Were conclusions based on results? • Results were interpreted • Conclusions flowed logically from the research question, results, and interpretation	☐ Yes ☐ Yes	☐ No ☐ No
	Did the systematic review include a section addressing limitations and how they were addressed?	☐ Yes	☐ No

Section I: QuaNtitative Appraisal (continued)	
Quality	Circle the appropriate quality rating below: **A High quality:** Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; recommendations consistent with the study's findings and include thorough reference to scientific evidence **B Good quality:** Reasonably consistent results; sufficient sample size for the study design; some control; fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence **C Low quality:** Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.
Record findings that help answer the EBP question on page **1**	

A	Is this a report of a single research study?	☐ Yes → This is Level III evidence ☐ No → Go to Section II: B

Quality	After determining level of evidence, determine the quality of evidence using the considerations below:		
	Was there a clearly identifiable and articulated: • Purpose? • Research question? • Justification for design and/or theoretical framework used?	 ☐ Yes ☐ Yes ☐ Yes	 ☐ No ☐ No ☐ No
	Do participants have knowledge of the subject the researchers are trying to explore?	☐ Yes	☐ No
	Were characteristics of study participants described?	☐ Yes	☐ No
	Was a verification process used in every step of data analysis (e.g., triangulation, response validation, independent double check, member checking)? (Credibility)	☐ Yes	☐ No
	Does the researcher provide sufficient documentation of their thinking, decisions, and methods related to the study allowing the reader to follow their decision-making (e.g., how themes and categories were formulated)? (Confirmability)	☐ Yes	☐ No
	Does the researcher provide an accurate and rich description of findings by providing the information necessary to evaluate the analysis of data? (Fittingness)	☐ Yes	☐ No
	Does the researcher acknowledge and/or address their own role and potential influence during data collection?	☐ Yes	☐ No
	Was sampling adequate, as evidenced by achieving data saturation?	☐ Yes	☐ No
	Does the researcher provide illustrations from the data? • If yes, do the provided illustrations support conclusions?	☐ Yes ☐ Yes	☐ No ☐ No
	Is there congruency between the findings and the data?	☐ Yes	☐ No
	Is there congruency between the research methodology and: • The research question(s) • The methods to collect data • The interpretation of results	☐ Yes ☐ Yes ☐ Yes	☐ No ☐ No ☐ No
	Are discussion and conclusions congruent with the purpose and objectives, and supported by literature?	☐ Yes	☐ No
	Are conclusions drawn based on the data collected (e.g., the product of the observations or interviews)?	☐ Yes	☐ No

Section II: QuaLitative Appraisal (continued)

Quality	Circle the appropriate quality rating below: **A/B High/Good Quality:** The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; it describes the specific techniques used to enhance the quality of the inquiry. Evidence of at least half or all the following is found in the report: • *Transparency*: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. • *Diligence*: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. • *Verification*: The process of checking, confirming, and ensuring methodologic coherence. • *Self-reflection* and *self-scrutiny*: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. • *Participant-driven inquiry*: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. • *Insightful interpretation*: Data and knowledge are linked in meaningful ways to relevant literature. **C Low quality:** Lack of clarity and coherence of reporting, lack of transparency in reporting methods; poor interpretation of data and offers little insight into the phenomena of interest; few, if any, of the features listed for high/good quality.
Record findings that help answer the EBP question on page **1**	

Section II: QuaLitative Appraisal			
B	Is this a summary of multiple sources of qualitative research evidence with a comprehensive search strategy and rigorous appraisal method (Meta- synthesis)?	☐ Yes → This is Level III evidence ☐ No →Use the Nonresearch Evidence Appraisal tool (Appendix F)	
Quality	After determining level of evidence, determine the quality of evidence using the considerations below:		
	Were the search strategy and criteria for selecting primary studies clearly defined?	☐ Yes	☐ No
	Was there a description of a systematic and thorough process for how data were analyzed?	☐ Yes	☐ No
	• Were methods described for comparing findings from each study?	☐ Yes	☐ No
	• Were methods described for interpreting data?	☐ Yes	☐ No
	• Was sufficient data presented to support the interpretations?	☐ Yes	☐ No
	Did synthesis reflect: • New insights? • Discovery of essential features of the phenomena? • A fuller understanding of the phenomena?	 ☐ Yes ☐ Yes ☐ Yes	 ☐ No ☐ No ☐ No
	Are findings clearly linked to and match the data?	☐ Yes	☐ No
	Are findings connected to the purpose, data collection, and analysis?	☐ Yes	☐ No
	Are discussion and conclusions connected to the purpose, objectives, and (if possible) supported by literature?	☐ Yes	☐ No
	Did authors describe clearly how they arrived at the interpretation of the findings?	☐ Yes	☐ No
	Circle the appropriate quality rating below:		
	A/B High/Good Quality: The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report: • *Transparency*: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. • *Diligence*: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. • *Verification*: The process of checking, confirming, and ensuring methodologic coherence. • *Self-reflection* and *self-scrutiny*: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. • *Participant-driven inquiry*: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. • *Insightful interpretation*: Data and knowledge are linked in meaningful ways to relevant literature. **C Low quality:** Lack of clarity and coherence of reporting, lack of transparency in reporting methods; poor interpretation of data and offers little insight into the phenomena of interest; few, if any of the features listed for high/good quality**.**		
Record findings that help answer the EBP question on page **1**			

Section III: Mixed Methods Appraisal

You will need to appraise both parts of the study independently before appraising the study as a whole. Evaluate the quaNtitative part of the study using Section I. Evaluate the qualitative part of the studying using Section II, then return here to complete appraisal.

Level

	Level	Quality
QuaNtitative Portion		
QuaLitative Portion		

The level of mixed methods evidence is based on the sequence of data collection. Quantitative data collection followed by quaLitative (explanatory design) is based on the level of the quaNtitative portion. All other designs (exploratory, convergent, or multiphasic) are Level III evidence.
Explanatory sequential designs collected quantitative data first, followed by qualitative. Exploratory sequential designs collect qualitative data first, followed by quantitative.
Convergent parallel designs collect quantitative and qualitative data at the same time.
Multiphasic designs collect qualitative and quantitative data over more than one phase.

Quality

After determining the level of evidence, determine the quality of evidence using the considerations below:

Was the mixed-methods research design relevant to address both quaNtitative and quaLitative research questions (or objectives)?	☐ Yes	☐ No
Was the research design relevant to address the quaNtitative and the quaLitative aspects of the mixed-methods question (or objective)?	☐ Yes	☐ No

Circle the appropriate quality rating below:

A High quality: Contains high-quality quaNtitative and quaLitative study components; highly relevant study design; relevant integration of data or results; and careful consideration of the limitations of the chosen approach.
B Good quality: Contains good-quality quaNtitative and quaLitative study components; relevant study design; moderately relevant integration of data or results; and some discussion of limitations of integration.
C Low quality: Contains low quality quaNtitative and quaLitative study components; study design not relevant to research questions or objectives; poorly integrated data or results; and no consideration of limits of integration.

Record findings that help answer the EBP question on page **1**

ANNEXURE 4 : DATA ANALYSIS TABLE

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
1. Kaplan et al. **2021**	Single centre at an urban-based tertiary care children's hospital Evaluated in the	182 patients Included patient younger than 18 years presenting to the ED.	Non-experimental Quantitative Descriptive	Nil	1. Examine adherence to a comprehensive outpatient medical follow-up protocol after evaluation	1. This study with a follow up protocol showed higher rates of follow up for pASA (60.4%) and for those started on HIV PEP (67.7%) compared to other studies. 2. Younger patients, patients with anogenital injuries, patients prescribed PEP, and patients with legal involvement in their case, had higher rates of follow up. Shows that follow ups are important to address multifaceted short and long term needs of survivors.	1. Follow up protocols could be useful in increasing rates of follow up among survivors of pASA and those started on HIV PEP.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	paediatric ED. Consultation & follow-up services provided child protection center.	ICD discharge diagnosis suggestive of sexual assault/abuse. Patients presented within 96	Retrospective medical record review. Medical record review w/ data extraction was completed for both initial presentation to ED &		in the emergency department in a paediatric population 2. Identify characteristics associated with patient	3. Vast majority of patients (90%) had a parent/caregiver accompany them to both ED and outpatient appointments. Important that information and guidance be provided to the patient and caregivers; to inform and encourage ongoing medical visits and mental health interventions. 4. Most patients 130 out of 182, presented with normal anogenital examination in the ED. Anogenital examination findings after pASA	2. At follow up a child abuse specialists should be consulted to facilitate specific interventions and recommendations. This can be done in person, by educational

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	From January 1, 2010 - December 31, 2013.	hours of last sexual contact.	presentation to at least first outpatient follow-up appointment.		adherence to inform the utilization of a medical follow-up protocol after pediatric acute sexual assault.	are uncommon. Role of HCP or Physician to reassurance that the absence of examination findings after pASA is common; and neither confirms nor excludes a history of sexual assault. 5. Six patients assessed on follow up found to have anogenital injuries not initially documented in ED. Possible reasons: outpatient clinic delivers trauma-informed care, uses resources such as colposcopic magnification, a child life specialist, and subspecialty trained child abuse pediatricians. Reinforces need for follow-up with	Web-based tools and/or telemedicine. 3. professionals working with survivors should work within a multidisciplinary team.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						a specialist who has expertise in anogenital examination findings. 6. Patients with anogenital injuries need to be scheduled for follow up sooner. Importance of prompt examination, given that anogenital injuries heal quickly and often completely. And are important to identify for forensic and medical reasons. All 29 patients with anogenital injuries identified in ED completed follow-up evaluations.	Communication with other professionals (eg, law enforcement, social services) as an MDT is important for transition of care from the ED to the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						7. Patients started on PEP also require sooner follow-ups, to assess adherence and tolerance. Majority (93.9%) of patients accepted HIV PEP when it was offered; of those patients, 67.7% followed-up. Protocols in other institutions may include having a separate visit with an infectious disease specialist to assess HIV PEP adherence. Having more than 1 specialist to visit may be a barrier for some patients owing to access, increased number of co-payments, and transportation. It is recommended that follow-ups involve using a	outpatient setting. 4. Patient's psychological status should be evaluated, acutely and in follow-up. Strongly recommend mental health interventions.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						specialist in addressing the many needs of the patient and family. 8. Other comprehensive protocols for ED to outpatient followup are not reported in the medical literature. Our protocol is based on well-established relationship between the ED and child abuse pediatrics clinic; with immediate communication between these 2 services, when a patient presents for an acute sexual assault. Beneficial to have communication with child abuse specialist	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						is that is trained to provide age- and risk-based recommendations regarding medical and legal interventions. 9. Legal involvement includes patients who accept an FEK, file a police report, and/or have CPS involvement; All these patients in these groups have higher odds of completing follow-up evaluations. Patients and caregivers may require guidance during follow-up with regard to legal proceedings, CPS investigations, and the status of an	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						FEK. Child abuse specialists frequently work within an MDT, such as with law enforcement and CPS. An MDT approach improves communication between the different agencies to address the complex needs of these patients. 10. Important that a plan for outpatient follow-up is communicated to the ED based on key risk factors. Patient must leave ED with a confirmed appointment, which may improve compliance.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						11. When Child Abuse Specialist not available, Web-based and telemedicine resources should be utilized to provide expert consultation to the HCP conducting the follow up. 11. Pediatric acute sexual assault is associated with serious long- and short-term psychological comorbidities. Acutely, 18.6% of patients had documented SI, and 2% required hospitalization during the ED assessment. Psychiatric assessment is an important component of the initial ED evaluation.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						12. Psychiatric comorbidity was not associated with increased of follow-up. In patients who followed-up, 3% required acute hospitalization and 1% had continued SI - highlighting ongoing mental health risks and needs. Protocol emphasizes the need to frequently reassess the patient's psychological well-being at each encounter. Starts with an initial phone call after 1st presentation. Phone call provides guidance, answer questions, and offer referrals for mental health treatment if this was not done in the busy ED setting.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						13. Psychological symptoms related to pASA (eg, PTSD, anxiety) may take months to develop. Longitudinal follow-up is necessary. Counseling resources are provided for each patient, in addition to family members who are navigating the trauma alongside the patient. In cases where the patient expresses not needing mental health intervention, the clinician must emphasize the potential for delay in developing symptoms. These patients who decline a mental health referral may require closer followup than	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						those who will subsequently see a mental health clinician.	
2. Gilmore et al. **2022**	Emergency Room Medical university in the South-	939 individuals Participants included those who received a SAMFE.	Non-experimental Quantitative Descriptive	Nil	1. The goal of this study was to examine factors associated with medications	1. Genital injury associated with increased prescription for antiviral medication. 2. Non-genital injury associated with over the counter and prescription pain medication prescription.	1. Current findings suggest that some characteristics of a sexual assault event were associated with the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	eastern United States - Five-year period, between July 1, 2014, to May 15, 2019	Consented to the release of their medical records for research. Female (93.9%, *n* = 882),	Retrospective study- electronic medical records Demographic variables & outcome variables pulled directly from patient's		prescribed the same day as a sexual assault medical forensic examination (SAMFE). 2. Demograp	3. Assaults perpetrated by an intimate partner had a decreased likelihood of antibiotic and emergency contraception prescription; and increased likelihood of psychiatric prescriptions. Individuals may believe that they are more aware of whether the perpetrator is infected by an STI, and thus less likely to be prescribed antibiotics. 4. Strangulation associated with greater likelihood of prescription for over-the-counter pain and psychiatric medication.	prescriptions a patient receives. 2. These findings warrant replication in larger and more generalizable samples across geographic

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Male (6.1%, *n* = 57) Ages ranged from 18-81, mean age of participants 28.92	electronic medical records. Sexual assault characteristics were analyzed using the SANE notes for each participant.		hic and assault characteristics were examined as correlates of medications prescribed at the emergency departmen	5. Rape (Penetrative assault) was a significant predictor of antiviral prescriptions, with males more likely to be prescribed antiviral medication as compared to females. 6. Contrary to previous findings related to some medications (i.e., post-exposure prophylaxis), alcohol or drug use during the event did not increase the likelihood of any prescriptions examined in the current study.	regions and extension to more thoroughly examine prescribing practices and patient experiences with medication utilization following rape.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Two trained research assistants manually coded the medications to one of the six categories.		t within the same day of a SAMFE.	7. Racial/ethnic identity was not associated with differential likelihood of receiving a prescription for any type of medication. 8. Notably and contrary to expectations, prescription pain medications were only associated with nongenital injury. Given the vast and highly visible negative sequelae associated with prescription pain medication misuse, diversion, and dependence; and data indicating increasing prescriber judiciousness for pain medication, it is possible national initiatives influenced this outcome.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						9. Results show that sexual assault characteristics may predict which medications are prescribed at a SAMFE. Likely that both survivors and SAMFE medical providers are affected by rape characteristics.	
3. Silva-Nash et al.	Single site UAMS Emergenc	147 patients	Quasi Experimental Quantitative	Implementation of an nPEP programme:	Aim of this study was to measure	1. This study adds supporting evidence for the effectiveness of a comprehensive nPEP programme, including and EMR order sets, for implementation of nPEP protocols.	1. Standardization of an nPEP ED protocol for sexual

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2021	y Department - Academic medical centre ED Clinical data collected for 1-year (July 2016 to June	59 pre-intervention 88 post-intervention All patients who presented during the	Pre-Post interventional study Patient demographic information, including age, gender and race, as well as medication	1. Order set embedded in EMR 2. Collaboration between ED	the impact of implementing an nPEP programme for patients presenting for medical evaluation following	Non-occupational PEP was offered (72.2% vs. 100%) and ultimately prescribed (51.9% vs. 86.1%) to nPEP candidates more frequently in the post-intervention period. Additionally, nPEP prescriptions were more commonly determined to be appropriate in the post-intervention period (55.2% vs 97.2%) 2. After the intervention patients more frequently received appropriate baseline laboratory evaluation, STI screening, hepatitis B vaccination, and scheduled follow up.	assault patients resulted in increased nPEP administration, appropriateness of prescription, screening for STIs, hepatitis B vaccination and scheduling 1 month

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	2017) pre-intervention period. Then 1-year washout period during which the nPEP	pre-and post-intervention periods AND were evaluated by a sexual assault nurse examiner AND completed a sexual	administration data, prescription data, laboratory data and follow-up data were extracted from the EMR.	providers, sexual assault nurse examiners (SANE), and HIV pharmacist for nPEP cases	sexual assault. 1. Primary goal was to increase percentage of post-sexual assault patients who were correctly	- HIV screening on initial presentation increased from 28.8% to 95.5% ($p < 0.005$). - Adherence to the appropriate performance of laboratory evaluation and administration of the HBV vaccine (8.5% vs. 22.7%) greatly improved. - Rate of STI prophylaxis administration remained stable throughout. 3, Prior to nPEP programme medical evaluation and treatment was dependent on individual HCP knowledge, and follow-up visits were not made at time of the initial ED visit. Studies have found	follow-up care. 2. Evidence supports the effectiveness of a comprehensive nPEP programme, including EMR order sets, for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	programme was installed (July 2017 to June 2018). And 1-year (July 2018 to August 2019)	assault forensic examination record were included. Patients included if sexual encounter occurred ≤ 72 h from	- ARV prescriptions for nPEP considered appropriate if three-drug regimen outlined in the 2016 nPEP guidelines was provided to a sexual assault victim within	3. Initial nPEP dose in the ED 4. On-site speciality pharmacy to provide 28-day nPEP prescription directly	offered nPEP & subsequently given an appropriate nPEP prescription. 2. Secondary	that less than half of primary care physicians have a 'good' understanding of nPEP and this is supported by the pre-intervention data from this study, with only 55.2% of nPEP prescriptions being appropriate. Effective and sustainable methods to improve nPEP administration should therefore target simplified order-sets. 5. Our study failed to achieve a high rate of in-person follow-up for repeat HIV screening. Twenty-eight day follow-up for patients prescribed nPEP was more frequently	implementation of nPEP protocols. 3. However, the rate of confirmed medication dispensation and follow-up remained low.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	post-intervention period	presentation, AND if exposure carried considerable risk of HIV Acquisition, AND if patient was not	72 h of an exposure considered to be of substantial risk for HIV acquisition for a duration of 28 days [2]. Verification of dispensed ART prescriptions	to patient with medication counselling and setting up patient assistance programmes during business hours.	goals included standardizing screening and treatment for other STIs, increased vaccination administration, and	recommended by ED providers in the post-intervention period (86.2% vs. 94.4%). However, patients rarely presented for these visits in both groups (3.5% vs 11.3%) 6. Of note, 44% of patients who completed a tele-health visit with an HIV pharmacist while on nPEP presented for in-person 28-day follow-up. These tele-health visits allowed for real-time medication counselling and stressed the importance of need for follow-up HIV testing.	3. Recommend implementation of nPEP programmes in EDs to improve medical treatment for sexual assault patients. 4. Further research

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		known to already have HIV	was obtained by reviewing insurance and pharmacy records.	5. ED to provide 3-day nPEP prescription overnight & on weekends to bridge medication need	increasing the rate of follow-up.	Efforts to improve follow-up are still needed and these findings are supported by other studies. 6. Our study highlights the need for standardizing nPEP administration showing improved compliance. An important consideration is whether patients receive medication after discharge from the ED. By incorporating the on-site speciality pharmacy, we have shown a significant improvement in verification of dispensed prescriptions (35% vs. 56%; $p < 0.05$).	needed to investigate barriers to medication adherence and completion of follow-up to better address gaps in post-sexual assault care.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				6. Tele-health visit with HIV pharmacist on day 5 of treatment course. 7. In-clinic			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				visit with ID physician scheduled while in ED for 28 day follow up and repeat laboratory testing.			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
4. Scannell & Berger 2018	Urban level 1 academic trauma center in Boston, Massachusetts Emergency	SA patients in the emergency department Patients who presented to the	Quasi Experimental Quantitative Pre-Post interventional study	1. Improved educational preparation of emergency nurses with a simulation course:	The purpose of the quality improvement project was to improve health care delivery to survivors of SA, with a focus on	1. Intervention had an effect on the average time of administration of n-PEP for SA patients. Although not statistically significant, there was a trend toward a decrease in the time n-PEP was administered to SA patients. Although emergency nurses administer n-PEP, the time of administration is often dependent upon the time that the health care provider orders the medication. Once a medication has been ordered, the emergency nurse has 30 minutes to administer the medication. Further educational measures may need to expand to other health care providers	1. Prompt initiation of n-PEP is the only preventive measure against HIV for SA patients. Implementing a training course and checklist improved

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	department	ED with reported or suspected sexual assault AND met the criteria for n-PEP. Exclusion criteria:	Time of administration of n-PEP and LOS were chosen as measurements for this intervention. SA patients ED charts reviewed.	1. Didactic lecture on current issues & updates. 2. Video presentation of SA patient going through	addressing the critical time-sensitive administration of n-PEP.	who may also have an effect on the time that n-PEP is administered, such as having the emergency providers order the medication sooner. 2. Intervention also caused a change in the association of administration of n-PEP and Length of Stay (LOS). This change in association has significance in clinical outcomes. Time of administrating n-PEP and time of LOS should be independent of each other; the time n-PEP is initiated should have no bearing of LOS.	prompt initiation of n-PEP administration. 2. However, it did not have an impact on shortening LOS. Future research should explore other possible

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Patients who were admitted into the hospital or to the observational unit. Patients with acute mental health issues		forensic medical examination. 3. 6 hands-on skill stations. 4. Simulation training.		In essence, the longer the LOS for these patients, the longer the delay was in initiating n-PEP. One possible explanation is that n-PEP was being administered closer to the completion of the examination and viewed as part of the discharge process. Data suggest that, on average, in 2016, n-PEP was being administered more consistently earlier in the ED visit with fewer cases of n-PEP being administered toward the discharge phase of the visit. 3. One possible reason for increase in the LOS of SA patients could be explained by the increase in comprehensiveness of care now given to these	methods in reducing the LOS, especially among patients who need extensive testing and evaluation.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		requiring psychiatric interventions. Medical records in which information was not documented.		2. Development of a checklist called Provider Sexual Assault Checklist (P-SAC): 1. Follows hospital		patients. In previous years, medications and referrals may have been delayed or omitted. These are now being completed on a more regular basis. Patients who may have left without referrals or other components of care are now accessing much more comprehensive care. 4. Another possible reason for increased LOS is the initiation of new protocols in the emergency department within this period. For example, a new strangulation policy with a detailed algorithm was implemented at this hospital, which included the recommendation for	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Pre-Intervention Data collected from January 1, 2011, through December 31, 2011		policy, which is based on national, state, and local protocols. 2. All components of hospital's		Medical/Radiographic Evaluation of Acute Adult, Nonfatal Strangulation.19,20 Rates of strangulation have been noted to be as high as 33.9% among women who have been sexually assaulted by their partners. A positive screen initiates other medical evaluations such as radiology examinations, ultrasound examinations, computed tomography scans, and magnetic resonance imaging. 5. Important consideration for all health care professionals is limiting the possibility of secondary victimization from the lack of response	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		AND Post Intervention data from January 1, 2016, through December 31, 2016.		policy included. 3. Checklist is action oriented. 4. Related aspects of care are grouped		or negative response of health care providers when caring for SA patients. Secondary victimization can lead to an increase in post-traumatic stress symptomology. A medical forensic examination with collection of evidence is a lengthy process. Care should be well coordinated to allow for more efficient time. However, for some SA patients, the process is distressing. The health care provider may need to pause, stop, or allow the patient to take a break. The survivor may want to wait for an advocate or support person to arrive before starting the examination. As health care providers, we must take care of these patients efficiently in a	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				into sections, allowing for care to be grouped and streamlined.		sensitive manner that allows them the time they need to move through the examination.	
5. Saadatzadeh et al.	Academic hospital	n=42 respondents from a	Quasi Experimental	The IN-STEP project	The IN-STEP project	IN-STEP project, we successfully implemented improvements in HIV screening and prevention in our ED.	1. IN-STEP resulted in successful

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2021	Emergency Department (ED) UNM Emergency Department	group of 114 36.8% response rate N=26 Post intervention 22.8%	Quantitative Pre-Post interventional study MDT group of stakeholders - trainees, faculty, and staff - representing	(Integrating nPEP after Sexual Trauma in Emergency Practice): 1. Training of ED providers to perform	was designed to improve access to HIV screening and prevention for patients evaluated in the Emergency	1. Respondents expressed awareness of nPEP's use (90.5%) yet only moderate confidence in performing nPEP assessments in the ED (median 3 on a 5-point Likert). Providers also acknowledged uncertainty about where to locate nPEP decision support tools and indicated a preference that such tools, if developed, be short, uncomplicated, and easy to locate to afford prompt reference at the point of care.	improvements in HIV screening and prevention for patients evaluated after sexual assault and other indications. 2. We applied iterative Quality

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Outpatient HIV care setting Only academic health system in our geographically large state	Respondents: 1. ED attendings 2. ED advanced practice providers 3. Fellows	expertise in infectious diseases, emergency medicine, sexual assault care, pharmacy, nursing, clinical laboratory science, and population health. Group	nPEP assessments. 2. Access to HIV testing in the ED. 3. Provision of nPEP medications, using a	Department (ED) of our academic hospital after a sexual assault.	2. To guide educational efforts, the survey included a series of hypothetical patient care scenarios regarding nPEP use and questions about nPEP safety in specific cases (e.g., pregnancy, breastfeeding, adolescence). IN-STEP educational materials made to focus on areas where providers expressed more uncertainty or where nPEP decisions were not closely aligned with current guidelines. 3. Development of a nPEP decision support tool for use when patients are evaluated after a sexual	Improvement methods to each of four key areas: nPEP assessment, HIV testing, nPEP delivery, and continuity of care. 3. Consistent leadership and

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		4. Residents.	focused on identifying needs and opportunities for improvement of nPEP care and implementing systematic improvements to meet these needs.	patient-centred approach. 4. Continuity of care between the ED and follow-up sites in the		assault; a series of short educational sessions; and an online repository of clinical support resources. 4. need to perform baseline HIV testing at the point of care was a key practical barrier to nPEP delivery. HIV testing was available in the ED, but two practical barriers limited its use: (1) Test results were not immediately available to providers. (2) the mechanisms for ensuring follow-up of HIV test results after ED discharge were not clearly developed.	advocacy by a multidisciplinary team. 4. Augmented by a defined, patient-focused objective 5. A coordinated

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Sought input about perceived barriers to nPEP assessment and nPEP-related care among our ED's providers through in-person and email-based discussions	community. - Applied & given local grant funding to cover the cost of a full course of nPEP medications.		Addressed these barriers by implementing a rapid HIV screening assay in the ED to ensure that all positive screens were confirmed, and each patient connected to follow-up care. 5. Local grant funding supported the purchase of full course nPEP medications for patients in whom nPEP was indicated, offered, and accepted. Led by pharmacy colleagues on the team, we developed take-home medication packs that ED providers could order and dispense from the ED's automated medication dispensing station.	approach to simultaneous Quality Improvement across multiple key areas, led to significant improvements in HIV screening and prevention.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			and through a deidentified provider survey. A follow-up survey requested input about key aspects of our initiative after implementatio	This funding allowed us to dispense nPEP at the time of the ED visit at no cost to the patient or insurer.		6. In collaboration with health literacy and language translation staff, we prepared nPEP-related and sexual assault-related discharge instructions and informational inserts for the nPEP take-home packs. The take-home packs included full course nPEP medications, easy-to-read information about nPEP, and direct contact information for follow-up clinics in the community.	6. Similar approaches may be useful in other complex QI initiatives.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			n to facilitate ongoing improvements. Encourage input from a broad range of providers, including those who declined to participate in			7. Recognized the need to achieve continuity of care after ED discharge as a critical component of our initiative. After nPEP is initiated, patients should receive follow-up laboratory tests, emotional and psychological support, medication adherence counseling, and ongoing education about HIV risk reduction. 8. Identified a total of 10 outpatient clinic sites that were willing to provide nPEP follow-up after ED discharge. Clinics offering care to adult and pediatric patients, insured and uninsured patients, Veterans Affairs and Indian Health Services	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			the survey based format – providers were invited to provide input about IN-STEP via email or at meetings and presentations related to the project.			patients, university students, and homeless persons agreed to participate. 9. In collaboration with IN-STEP, our state's AIDS Education and Training Center offered specialized, on-site nPEP training to participating clinics. ED providers could contact any of the 10 clinic sites to arrange referral. Patients accepting nPEP initiation in the ED also received detailed contact information for the follow-up clinical sites in the discharge instructions.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						Complex challenges to evidence-based healthcare delivery and clinical infrastructure development may best be addressed using a systematic, multidisciplinary approach. 1. Assembled a core leadership team to design, implement, and evaluate the project over time. This included a diverse group of stakeholders, and input from ED providers. The consistent, dedicated leadership of the team helped to advocate for patient- and project-related needs and sustain the project's momentum over time.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						2. We defined a main patient-focused objective—in our case, improving nPEP delivery for patients evaluated after sexual assault—around which we could focus our efforts. This allowed us to seek and obtain grant funding, build collaborations with other groups at our institution and community, and initiate infrastructural improvements that could influence broader aspects of HIV screening and prevention in the ED.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						3. Third, we envisioned each of the complex needs of the project as corresponding to one of four parallel areas of focus, which in turn required iterative input and improvement by team members whose interest and expertise aligned with each area. As the project expanded, we sought to iteratively improve communication across these areas, using a project-specific dashboard depicting the project's progress, next steps, and needs.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
6. Gilmore et al. **2021**	Emergency Department One of two medical centers in a Midwestern	*N* = 711 Excluded N = 466 Included N = 245 Completed	Experimental Random Controlled Trial (RCT) Quantitative Longitudinal	Prevention of Post-Rape Stress [PPRS] Video entitled Steps to Recovery. Female narrator providing	Assess the efficacy of a brief video intervention (PPRS) delivered during the SAMFE in terms of mitigating the developme	1. These findings add to the emerging literature aimed at preventing PTSD by assessing the effects of a scalable technology-based intervention on PTSD and perceived present control, a coping-related variable strongly associated with better outcomes among women who have experienced SA. The findings partially supported our hypotheses. 2. There was no support for main effects of the PPRS video on PTSD symptoms compared to TAU. There were also no significant differences between PPRS and PIRI; therefore, the PPRS	1. The PPRS did not significantly alter symptom trajectory post-SA, and there were no main effects on PTSD or perceived present control.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	metropolitan area	N = 233 PPRS N = 77 PIRI N = 77 TAU N = 79	Computerized random numbers generator assigned participants to each condition using a stratified blocked randomization procedure with variable block	information to prevent future emotional problems and substance abuse, such as instructions for implementation of	nt of post-SA PTSD and increasing perceived present control up to 6 months post-exam both over time and at each follow-up.	video does not appear to be more effective than a relaxation control condition. 3. However, among women with prior SA, those receiving PPRS had less frequent PTSD symptoms and higher perceived present control 6-months post-SA compared to those receiving TAU. These findings had a medium effect size, suggesting there may be some clinically significant differences in PTSD symptoms as well as perceived present control among those with prior SA who also received the video. Among those with prior SA, the PPRS may be a	2. However, the PPRS was effective at mitigating the development of PTSD symptoms and increasing perceived present control 6-months post-

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			sizes of 9 or 12. Primary outcomes were posttraumatic stress disorder (PTSD) symptoms and perceived present control.	self-directed exposure exercises, methods to recognize and terminate inappropriate avoidance, and strategies to		low-resource and expedient method to reduce PTSD symptoms and increase perceived present control. 4. This finding is consistent with previous literature suggesting that technology-based interventions are particularly useful for women with more severe SA histories. It is possible that women with prior SA may attend to, and learn from, coping skills presented in the PPRS video more than those without such histories because the relevance of this material is more apparent.	SA among women with prior SA. this group may have elevated risk for mental health sequelae, so this finding is promising. 3. Therefore, universal use
		154 (66%) completed one or more follow-up assessments Girls and women aged 15					

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		years or older. Were recent victims of Sexual Assault. Received a SAMFE within 7 days of assault.	Prior SA was examined as a moderator of treatment effects. Participants completed three structured telephone follow-up interviews	engage in activities that specifically did not involve substance use and to avoid situations or cues that have been		More work is needed to understand why the PPRS is effective for women with prior SA. 5. There were no significant findings regarding PTSD symptoms and perceived present control over time based on condition. There were significant changes over time based on prior SA, age, and race/ethnicity. Taken together, these findings suggest that video-based interventions can be effective within the ED among recently victimized individuals with prior SA.	of the PPRS may not be warranted; however, these initial findings are promising. 4. Future work should determine what components

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Comparisons to non-completers indicated no differences on age or race except that those who participated were	targeted at 1.5-, 3-, and 6-months post-SA conducted by Counseling Psychology doctoral students and the assessors were blind to the treatment condition of the	triggers for use. Treatment as usual [TAU] TAU involved completion of an SAMFE		7. Among those with no prior SA, women reported more perceived present control in the TAU than the PPRS condition. This finding was not anticipated, as it would be expected that providing the PPRS would have either no effect or a positive effect on perceived present control for women who experienced SA. 8. Finally, the majority of the sample identified as a racial/ethnic minority (59.7%) and this group was at particular risk for more severe PTSD symptoms as well as less perceived present control. In relation to PTSD symptoms, women	would be beneficial to add to PPRS to increase its effectiveness for individuals with no prior SA. 5. Currently, the standard practice of an SAMFE does

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		more likely to indicate more than one race than nonparticipants. Treatment groups also did not differ	participants. Covariates were examined including age, minority status, and whether the SA was drug or alcohol facilitated given the	performed by an SA Nurse Examiner. This includes a physical exam as well as information about local resources.		who identified as racial/ethnic minorities had more severe PTSD symptoms at the 1.5-month follow-up period compared to their White counterparts, although this difference was not maintained at the 3- or 6-month follow-ups. In relation to perceived present control, women who identified as racial/ethnic minorities had less perceived present control at each time point than their White counterparts. More work is needed to understand why this difference was found. 9. Previous work on perceived present control has largely focused on college samples that are	not provide individuals with prevention for post-SA mental health sequelae. The findings from this study, combined with the extant literature on post-SA mental health,

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		in terms of age, minority status, marital status, education, household income, student status, or employment status.	differential outcomes based on SA type. Changes in PTSD symptoms and perceived present control were examined both over time and	Pleasant Imagery and Relaxation Instruction [PIRI] Female narrator providing instruction		predominately White. It is possible that there are pre-SA racial/ethnic differences in this construct that have not yet been established in the literature. Certainly, racial/ ethnic minorities experience disparities in access to health care in addition to experiences of discrimination which may contribute to perceived present control. Future work is needed to elucidate the unique factors contributing to the maintenance of post-SA mental health symptoms among racial/ethnic minorities and ensure that prevention programs tailor to these unique factors.	suggest a need for prevention to be embedded within the SAMFE. 6. This research adds to the literature using technology-based

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			at each time point.	s in diaphragmatic breathing, use of words such as relax paired with exhalation, instructions regarding			interventions in ED settings, which can have broader implications for individuals receiving care within an ED setting.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				muscle relaxation, and pleasant nature-related imagery and sounds.			
7. Walsh et. al	Emergency	N=711	Experimental	Prevention of Post-Rape	The current study	1. The PPRS has numerous benefits including ease of dissemination within an ED setting, low costs, and potential to decrease a number of	1. The current study highlights the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2019	department. Two medical centers in a Midwestern metropolitan area.	Excluded N = 466 Included N = 245 Completed N = 233	Random Controlled Trial (RCT) Quantitative Longitudinal Participants self-reported	Stress (PPRS) Designed to reduce future emotional problems and substance abuse by providing instruction	tested whether a brief video intervention delivered in the emergency department was effective at reducing smoking	substance use and mental health symptoms associated with sexual assault. 2. Study found that the PPRS mitigated cigarette smoking among participants who had received a SAMFE. 3. Specifically, although smoking decreased on average for all groups, participants in TAU reported increases in cigarette smoking at the initial follow-up, while those in PPRS did not.	importance of studying smoking among recent SA victims as 20% who had not smoked in the two weeks prior to the assault initiated or resumed smoking in the 6-month

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Between May 2009 and December 2013.	PPRS N = 77 PIRI N = 77 TAU N = 79	on smoking in the year prior to the SA, the two weeks prior to the SA, and the two weeks prior to each follow-up assessment. Prior to the SAMFE exam,	on proper implementation of self-directed exposure exercises, methods to recognize and terminate inappropriate avoidance,	following SA.	4. No differences were found between PPRS and the active control condition PIRI, on cigarette smoking over follow-up. 5. The PPRS video content that focuses on coping using means other than substance use may be effective for cigarette smoking in addition to previously found effects for marijuana use and alcohol use.	period following the assault. 2. Importantly, these findings also suggest that the PPRS video has utility for preventing post-SA

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		154 (66%) completed one or more follow-up assessments Three treatment groups did	participants reported subjective units of distress (SUDS) on a scale from 0 (no distress) to 100 (unbearable distress). SUDS are commonly used during	and strategies to engage in activities that specifically did not involve alcohol or drug use and avoid situations or cues		6. More than two-thirds (68.8%) of women who presented for a SAMFE and provided follow-up data reported smoking prior to or after the SA. 7. Substantial proportion (19%) of women who reported that they had not smoked in the year prior to the SA reported smoking at some point during follow-up, suggesting that sexual assault	increases in smoking among recent SA victims. 3. This finding is promising in that the PPRS video is brief, and can be widely disseminated

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		not differ on age, minority status, marital status, education, household income, or employment.	exposure tasks in cognitive behavioral therapy for anxiety and related disorders or during stress inducing tasks to allow participants to report acute distress.	that have been triggers for use. Pleasant Imagery and Relaxation Instruction (PIRI)		may serve as a catalyst for some women to either begin smoking or start smoking again if they had previously quit. 8. Higher distress at the ED was associated with smoking more in the two weeks prior to the SA, suggesting that those who were more distressed at the ED may have been more distressed prior to the SA and thus smoked more to cope. It also is possible that this group represented more nicotine-dependent individuals	in the ED with minimal cost. 4. However no differences were found between the intervention and the active control.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Girls and women aged 15 years or older who were recent victims of SA and who participated in a SAMFE within 7	SAMFE participants provided written informed consent to participate in the study and allow access to both medical records and self-report information.	Provided instruction in diaphragmatic breathing, muscle relaxation, use of words such as relax		prior to the SA. When exposed to SA and faced with the prospect of a SAMFE, this group may have experienced more withdrawal and craving that heightened their distress. 9. Consistent with prior research, lower education and income were associated with increased smoking. Women who experience SA who are already disadvantaged educationally and economically may represent an underserved population with regard to smoking cessation needs.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		days of assault.	Participants were randomly assigned to one of three intervention conditions. Completed three structured telephone	paired with exhalation, and pleasant nature-related imagery and sounds.		10. Future research could focus on better identifying those who may struggle most with coping and refer them to intensive smoking cessation treatment.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			follow-up interviews targeted at 1.5, 3, and 6 months post-SA conducted by Counseling Psychology doctoral students. Nurses administering	Treatment As Usual (TAU) Involved completion of a SA examination performed by a Sexual Assault			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			the protocol and doctoral students conducting the follow-ups were blind to study condition.	Nurse Examiner.			
8. Gilles et al.	Emergency department	N = 362 survivors of sexual violence	Quasi Experimental	1. Computerized chart was	This study analysed whether the	1. After implementation of the new protocol and educational sessions for staff, we found that optimal care was provided to 90% of patients. An earlier audit showed that only 10% of patients	1. Demonstrates that a dramatic improvement

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2019	1 January 2010 to 31 December 2015 Belgium	Follow-up for infectious disease N = 168 (46%) gynaecological follow-up N = 79	Quantitative Pre-Post interventional study Retrospective record review.	developed specifically for the care of survivors of sexual violence. Based CDC guidelines. 2. Once a year, one-	implementation of a new protocol and educational sessions for staff increased the proportion of such patients who	had received optimal care. Previously emergency contraception had been offered to less than 40% of patients at risk and counselling had been recommended to only 25%. Optimal care may reduce the risk of post-traumatic stress disorder. 2. We failed, however, to sufficiently improve the follow-up of women who had been sexually assaulted, since only about half of them attended a follow-up visit at the HIV outpatient clinic and only about a fifth a follow-up visit at the gynaecological outpatient clinic. These results are	in the management of survivors of sexual violence may be obtained through the implementation of a strict protocol and educational sessions.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		patients (22%). Female patients aged over 15 years.	(Pre-test done in previous article by same authors in the same setting). Computerized chart was developed specifically for the care of survivors of sexual	hour course given by an expert in the field. Focused on protocol & use of computerized chart.	received optimal medical care.	not surprising, since we and others have observed low compliance with follow-up. 3. The strengths of the study include the demonstration of a dramatic improvement in the management of survivors of sexual violence, obtained through the implementation of a strict protocol and the provision of educational sessions for staff.	2. But optimal management also implies that victims are assisted in their social, psychological and legal needs. This aspect of care must be improved. We believe that this will be

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			violence. The new protocol indicates that biological tests must be performed, prevention of pregnancy, antibiotics for the prevention of sexually transmitted infections, antiretroviral				achieved only if a simplified patient pathway is implemented. 3. In Belgium, there is no standardized care pathway for survivors of sexual violence. The

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			therapy and prophylaxis for hepatitis B. All patients were seen by gynaecology trainees & nurses at the ED.				availability of medical, psychological and legal help, and the provision of preventive measures and follow-up, vary widely between hospitals and cities.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Once a year, a one-hour course for all of the staff members was given by an expert in the field. The programme focused on the protocol and the use of the computerized chart.				4. In order to improve the care of survivors of sexual violence, proper collaboration should be established between various political institutions.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							There is a consensus that survivors of sexual violence need adequate multidisciplinary management. 5. In England and the USA, sexual assault

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							centres' have been created. Following our results and others, the Belgian government decided to start a pilot project with the creation of three referral 'sexual assault centres', one

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							for each region of Belgium, with the aim of reducing both the short-term and the long-term morbidity associated with rape. This has already resulted in a doubling of number of

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							survivors seen in one year in the Brussels region.
9. Bragesjö et al. 2020	Emergency Clinic for Rape Victims. Stockholm	Screening N = 191 patients Excluded N= 179	Open trial design. Quasi Experimental	Prolonged exposure therapy Treatment consisted of three	The aim of this study was to translate and test the feasibility of the	1. Our hypotheses were partly supported: Of the 10included individuals, seven participants completed the full PE protocol, and these individuals had high degree of treatment adherence. Additionally, results indicated clinically meaningful reductions in PTSD symptoms in these individuals. However, it is important to point out that the treated sample	1. Early provided PE seems to be an acceptable and deliverable intervention for rape victims.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	South Hospital. Sweden Study period (170111-170404).	Declined N= 2 Included N= 10 Completed Treatment	Quantitative Pre-Post Intervention Exploratory Recruitment was conducted in two steps.	PE sessions provided on a weekly basis. Posttraumatic Stress Disorder Checklist (PCL-5; Blevins	brief PE protocol at the Emergency Clinic for Rape Victims in Stockholm, Sweden. We hypothesized that PE,	consisted of only a fraction (5.2%) of the total intake at the clinic during the study period. 2. As much as 40% of the screened sample was excluded due to the time criteria of 72 h. One well-reported factor in the literature is that only a small proportion of rape victims seek help from mental health professionals in the early aftermath of trauma and there is a general delay from traumatic event and psychological treatment of 10 years. One idea to increase scalability and to capture a larger population of rape victims would therefore be to extend the time criteria for early	2. However, of the 191 screened patients, we were only able to include 10 participants (5.2% of the screened sample) in the study. The main reason

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		N= 7 Patients of at least 18 years of age Attending at the Emergency Clinic	Clinical psychologist or licensed psychotherapist did a preselection screening in the medical records. Eligible patients were asked to participate in the study at a	et al., 2015), 20-item self-report measure, was used to assess PTSD symptoms after treatment period.	provided in the early aftermath of rape, would be an acceptable and deliverable early treatment for rape	intervention and test if condensed PE is effective also after a longer time period since the traumatic event. 3. As much as 75% of the screened patients attended at the clinic after office hours and – as we did not have 24/7 coverage of clinical psychologists in this study – this may have led to unnecessary waiting times and exclusions for otherwise eligible participants. An interesting venue for future implementation research would be to investigate if it is possible to have psychologists around the clock also at emergency	for this was an inability to recruit participants in the stipulated time window for this study of 72 h. We suggest an alternative approach which includes offering the first

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		for Rape Victims at Stockholm South Hospital, Sweden. Within 72 h After experiencing a	routine appointment. Patients who did not come to the routine appointment were instead reached by telephone. Patients signed informed consent at the assessment		victims at the clinic.	departments. This is to our knowledge very unusual in regular care and could be interesting to investigate further. 4. At least nine (4.7%) eligible patients could not be scheduled within 72 h due to lack of available appointments in the clinical psychologist or licensed psychotherapists schedule and additional 19 (9.9%) patients were not able to schedule to early PE treatment due to other logistical reasons (e.g., traveling, not able to come to the clinic). Beside more psychologist coverage around the clock, one idea would be to develop	intervention session when the patients present irrespective of time since rape and also to develop remotely delivered interventions. 3. Complementary

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		traumatic event meeting the DSM-5 criterion A for PTSD and who had memories from the event.	appointment and also completed baseline testing. Treatment consisted of three PE sessions provided on a weekly basis. Participants			complementary procedures to reach rape victims after office hours, e.g., posters in the waiting-room or automatized internet-screenings swiftly delivered via smart phone. 5. Ten percent of the screened sample was not fluent in Swedish and therefore excluded. Translator assisted trauma focused CBT for PTSD has proven to be effective (d'Ardenne et al., 2007), and one future scientific direction would be to investigate if this could work also in an early intervention approach. A complementary	interventions, delivered through other formats (e.g., online), that are easily accessible – irrespective of gender, language barriers, and geographical distances – are clearly needed

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Exclusion criteria (i) ongoing suicidal ideation/ attempted suicide within the last 2 months.	conducted weekly self-report measures and post-measures. All participants met an independent assessor who administered the Clinician-			way to solve linguistical barriers would be to develop more language free interventions. 6. About one-quarter of the screened sample was excluded due to the age criteria (at least 18 years old). Previous research indicate female adolescents as victims of sexual assault in a higher, disproportionately degree (Khadr et al., 2018). Adolescents are also overall more vulnerable to subsequent mental health problems after sexual assault than adults (Khadr et al., 2018), and studies has also indicated poorer educational outcomes for adolescent females	in order to swiftly reach the millions of rape victims around the globe.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		(ii) ongoing self-harm Behavior. (iii) ongoing intoxication. (iv) other serious psychiatric	Administered PTSD Scale to assess for PTSD 2 months after treatment completion. We also exploratory investigated if it is possible			exposed to sexual assault such as rape (Holmes and Sher, 2013; Martz et al., 2016). We are not aware of any research study investigating the efficacy of early psychological interventions for young rape victims. Consequently, developing early interventions for this particularly vulnerable group is imperative. 7. The Emergency Clinic for Rape Victims did only provide care to female rape victims during the main execution phase of this study which unfortunately excluded an additional 10% of the screened sample. About 4–10% of all reported	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Comorbidity. (v) low cognitive capacity (vi) not fluent in Swedish (vii) subjected to ongoing	for rape victims to daily record the number of intrusive memories during treatment. This was done using a daily pen and paper diary where the participant was instructed			rapes include a male victim (Siegel et al., 1987; Elliott et al., 2004; Snipes et al., 2017), and studies do indicate that male rape victims have higher degree of distress, psychiatric symptoms, and psychiatric hospitalizations than female rape victims (Kimerling et al., 2002; Tewksbury, 2007). Given that male rape victims may experience very high degree of stigma (Nasjleti, 1980; Rew and Esparza, 1990), it is important to develop low threshold scalable interventions for these individuals.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		violence or threat.	to tick a box for the day and corresponding time period (morning/ afternoon/ evening/ night) or indicate zero in the absence of intrusive memories.			8. Twelve (6.2%) patients were finally asked to participate in the study, and two of these individuals declined participation. Of the 10 included participants, three participants dropped out of treatment. Homework assignment completion rate was high among the seven participants that underwent the full treatment, between 85 and 100%. One important challenge for future research is how to overcome the degree of data loss found in this study (40% of the included participants did not show up at the 2-month follow-up assessment). As previously discussed, digital innovations (e.g., smart phone	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						apps, video-conference) may provide solutions to some of these problems.	
10. Hornor et al. 2011	Pediatric emergency department ED at Nationwide	Medical Records N = 464 Forensic Kits N= 336	Quasi Experimental Quantitative Pre-Post interventional study	In the fall of 2005, a P-SANE program was established in this clinical	The purpose of this study was to compare quality indicators of care in a pediatric emergency	1. Addition of P-SANE support to the PED team in providing care to child/adolescent victims of acute sexual abuse/assault resulted in improved detection and documentation of ano-genital injury, evaluation, and documentation of pregnancy status, and testing for N. gonorrhea and C. trachomatis. These indicators are essential to the care of sexual abuse/assault victims and suggest that the additional didactic and clinical	1. P-SANEs Pediatric sexual assault nurse examiner care play a vital supporting role in the care of child and adolescent

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Children's Hospital Large urban pediatric Hospital in the Midwest	P-SANE N= 204 (61%) Our pediatric sample included both male and female children	Retrospective record review. Variables collected from the medical and legal records chosen by research team.	site. pre-implementation of P-SANE support (PED physician care only) to post-implementation with	department (PED) before and after the implementation of a P-SANE program described in terms of trace forensic evidence yield,	training that P-SANEs receive may result in higher quality care. 2. P-SANE care was comparable to PED physician care in the yield of positive trace forensic evidence and judicial outcomes in our study. Given that more exams performed by pediatric SANE nurses yielded a higher detection rate of physical finding consistent with sexual abuse/assault, it is curious that judicial outcomes were similar for P-SANEs and PED physicians. It is possible that the younger age of child victim	victims of acute sexual abuse/ assault. 2. Acute sexual abuse/assault care involves the collection of trace forensic evidence, physical

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		and adolescents between the ages of 1–20 years. A retrospective review of medical and legal records	Medical records were reviewed for: 1. History of sexual abuse/assault. 2. Ano-genital examination and the presence of anogenital or other injury.	P-SANE support.	identification of perpetrator DNA, and judicial outcomes in pediatric acute sexual assault.	seen by P-SANEs may have contributed to the judicial outcomes. 3. This phenomena has been noted in previous studies. However, in one study, Patterson and Campbell (2009) found more cases where a plea bargain/conviction resulted when care was provided by a P-SANE compared to a pediatrician or ED physician. Further evaluation is necessary to describe the impact of P-SANEs on the prosecution of child sexual abuse/assault.	assessment including anogenital examination, STI/ pregnancy testing and prophylaxis, providing emotional support, providing appropriate follow-up

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		from 1/1/04 to 12/31/07. Fall of 2005, a P-SANE program was established in this clinical	3. STI and pregnancy testing. 4. Medical provider (Physician only vs. P-SANE & Physician). 5. Victim age. 6. Perpetrator age.				referrals, collaboration with child protective services and law enforcement, and later perhaps court testimony. P-SANE education and training prepares

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		site. The time frame of record abstraction: pre-implementation of P-SANE	7. Time between abuse/assault & exam. 8. Bathing since abuse/assault. 9. Changing clothes since abuse/assault.				registered nurses to competently complete these essential tasks. 3. This study documented P-SANEs to be more likely to recognize and document an abnormal ano-

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		(2004–2005) & post-implementation of P-SANE support (2006–2007).	Legal records were reviewed for: 1. Forensic evidence kit results 2. Prosecution outcomes.				genital exam finding and to evaluate for pregnancy and STIs, yet additional research is needed to fully document the impact of P-SANEs on patient care outcomes.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
11. Gilmore et al. **2019**	Emergency department Two medical centers in a Midwestern	Girls and women age 15 or older who received a SAMFE within 7 days postsexual assault were recruited.	Experimental Random Controlled Trial (RCT) Quantitative Longitudinal	Video-based intervention for reducing substance use and mental health symptoms.	The current study examined the efficacy of video interventions on Prescription Opioid misuse after	1. Given the increased public health concern of prescription opioid misuse among women, it is imperative to identify effective, scalable, and sustainable interventions that can be easily disseminated. The current findings provide initial support for one such intervention delivered in the context of the SAMFE. 2. The SAMFE provides a unique opportunity for screening and intervention given that individuals are in the presence of a medical provider who can deliver medication-assisted treatment if an individual is misusing prescription opioids.	1. These findings contribute to the emerging literature regarding prescription opioid misuse after a recent sexual assault. Although these findings

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	metropolitan area	Screened N= 711 Included N= 233 Completed N= 154	After providing informed consent, participants were randomly assigned to the PPRS, PIRI, or TAU conditions. All procedures (exam & intervention)	PPRS Video Video entitled Steps to Recovery and focused on information about how to prevent emotional	sexual assault. It was hypothesized that both the PPRS and the PIRI conditions would be associated	Further, it provides an opportunity for behavioral or technology-based interventions for individuals misusing other prescription medications. 3. Although the PPRS video was not associated with prescription opioid misuse at follow-up, the PIRI video was associated with reductions in prescription opioid misuse for those with a prior sexual assault at 1.5-month follow-up compared to those in TAU. It is interesting that the PIRI was associated with less prescription opioid misuse among those with prior sexual assault compared to TAU and the PPRS was not.	are limited to individuals who received a SAMFE, they provide an initial examination of prescription opioid misuse after a recent sexual assault.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Excluded N = 466 Completers did not differ from non-completers on age/ race/ ethnicity. Those that	were administered in a private room within the hospital. Participants completed structured telephone follow-up interview targeted at 1.5	problems and substance use after a sexual assault. Information included self-directed exposure exercises,	with lower prescription opioid misuse relative to TAU. Due to previous findings that treatment	4. The PPRS may not have been effective in reducing prescription opioid misuse because it did not directly address pain, only alcohol and drug use more globally. Whereas the PIRI used evidence based techniques to reduce pain including mindfulness and relaxation. It is likely that prescription opioid misuse is directly linked to experience of pain, and that the PIRI may have reduced pain. Pain was not assessed in the current study, but future research should examine if relaxation techniques taught in the ED is	2. The data were collected prior to the wide dissemination of medication-assisted treatments for prescription opioid use disorders within EDs

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		completed the follow-up survey were more likely to identify as more than one race than non-completers.	months after the SA conducted by Counseling Psychology doctoral students. Analyses was not possible at 3 and 6 months for these time	methods to recognize and stop avoidance, and strategies to engage in activities that did not involve	effects are more effective for those with a prior SA, it was hypothesized that the PPRS and PIRI would be associated	associated with reductions in prescription opioid misuse indirectly through reductions in pain. 6. This finding adds to the emerging literature that behaviorally focused interventions may be able to reduce prescription opioid misuse. Teaching mindfulness and relaxation techniques via technology-based interventions require only minimal burden to ED staff during the SAMFE. 7. Consistent with some of the previous research on technology-based interventions for alcohol	nationwide; therefore, current use rates may differ. 3. More research is needed to further understand the prospective correlates of

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			points due to low statistical power of people reporting opioid use.	alcohol or drug use. PIRI Video This 9-minute video included a female narrator providing	with reductions in prescription opioid misuse among those with a prior SA.	and drug use, results indicated that the PIRI was only associated with reductions in prescription opioid misuse among those with prior sexual assault. It may be that individuals with a prior sexual assault attend to the content of the video because they are more familiar with their own substance use trajectory after sexual assault. Future research is needed to not only understand why technology-based interventions are more effective for those with more severe sexual assault histories, but also to understand why these interventions are not as effective for individuals without prior sexual assault.	prescription opioid misuse among samples of individuals who recently experienced a sexual assault. 4. Providing the PIRI video, or

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				instructions on relaxation techniques including diaphragmatic breathing, use of words such as "relax" paired with		8. Previous research indicated that the PPRS video is associated with decreases in alcohol use, cannabis use, and mental health disorders for some individuals; however, these findings suggest that the relaxation content specific to the PIRI videos may be associated with reductions in prescription opioid misuse as well. Future work could consider incorporating some of these elements into brief interventions like the PPRS to maximally impact a variety of drug use disorders.	teaching other types of mindfulness or relaxation exercises, may be warranted as a secondary prevention for individuals during the sexual assault medical forensic exam for those with

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				exhalation, instructions regarding muscle relaxation, and pleasant nature-related imagery and sounds. The			a prior sexual assault history. This research provides an initial examination of the impact of mindfulness skills recently after traumatic event exposure on PO misuse.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				original video was edited for length and content. Treatment as Usual TAU Although all participants received			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				a SAMFE performed by a sexual assault nurse examiner, the TAU condition only received the SAMFE			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				and no videos were provided.			
12. Choi et al. **2013**	Ajou University Hospital, Suwon, South Korea.	Total population N = 1179 Enrolled	Quasi-experimental Quantitative	Single dose of levonorgestrel (1.5 mg) as emergency	Aim of this study was to assess the effectiveness of emergency single-	1. Our study shows that the emergency contraceptive, single dose levonorgestrel, is very effective for patients of sexual assault. The present study demonstrated a failure rate of 0.68%, which was less than or equal to previous reports on EC. This confirms that 1.5 mg of levonorgestrel in a single dose is a	1. Our study demonstrates that a single 1.5 mg dose of levonorgestrel as EC after an act of SA is

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	One-stop center for SA in the emergency department (ED) Cases from Nov 10 2006 - Nov 9 2009.	Gynecologic examination + follow up. N = 416 Excluded N= 71 + 43 = 114	Retrospective record review The medical records for all women who received a single dose of 1.5 mg of levonorgestrel for EC due to SA in the ED from Nov 10,	contraception.	dose levonorgestrel contraception in preventing unintended pregnancy to patients visiting the ED due to SA.	highly effective method of EC in preventing unintended pregnancy for patients of SA. 2. Emergency contraception is using a drug or copper intrauterine device (Cu-IUD) to prevent pregnancy after unprotected sex. This is a back-up and not a regular contraceptive method. Mifepristone, ulipristal acetate, and levonorgestrel are very effective with few adverse effects, and are preferred to a combined estrogen and progestogen regimen.	highly effective. 2. Although this study has certain limitations, it confirms the recommendation that all patients seeking care after SA

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Included N= 302 Attrition N= 10 Ten patients (3.3%)	2006 - Nov 9, 2009, were obtained. Majority received the medicine within 72 hours (97.4%). Eight patients visited the ED 72 hours after the SA and			3. Levonorgestrel could be used in a single dose (1.5 mg) instead of two split doses (0.75 mg) 12 hours apart. Two trials have compared single-dose 1.5 mg levonorgestrel with two doses of 0.75 mg 12 hours apart. There was no statistically or clinically significant differences between the two regimens in preventing pregnancy for all women. The key finding was that one dose of 1.5 mg levonorgestrel had efficacy equivalent with the divided two-dose regimen. In addition, the rate of side effects was very similar. Thus, there is no need to split the dose.	should be provided with an emergency single dose of levonorgestrel and encouraged to present for follow-up evaluation.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		did not return for follow-up examinations. This population did not differ demographically and therefore had no effect on	received EC between 72 hours to 120 hours after SA (2.6%). Complete medical records (electronic and hard copy) were reviewed by one of the			4. The Cu-IUD is the most effective emergency contraceptive method and is the only emergency contraceptive method to provide ongoing contraception if left in situ. 5. A new oral tablet for EC, ulipristal acetate (UPA), is a selective progesterone receptor modulator and can be used up to 120 hours following unprotected intercourse, without an increase in adverse effects or a decrease in efficacy. This selective progesterone receptor modulator is administered as a single 30 mg dose for EC. This agent provides a comparable, if not	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		the sample. All of the patients received 1.5 mg of levonorgestrel as a single dose, and	study investigators to ensure that the patients included did receive the medication and that the data were recorded properly.			better, efficacy and side effect profile than that seen with levonorgestrel or mifepristone. Because it has both agonistic and antagonistic effects on the progesterone receptors, ongoing clinical trials are documenting UPA's use for patients with endometriosis and as an extended use contraceptive. 6. During the period of this study, we did not have UPA as an EC, so it was impossible to compare the efficacy of the two products. In the future, comparing UPA with single dose	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Prophylactic treatment STIs given. Repeat serologic tests done at 6, 12, and 34 weeks. A urine pregnancy test was performed again 3 to 6 weeks after the assault.			levonorgestrel as emergency contraceptives would be a valuable study. 7. In our study, over 97% of women were given EC within 72 hours of the act of SA, but 11 subjects received the EC after 72 hours. No pregnancy was reported in the latter cases. As we can see from these results, prescribing EC within 120 hours after SA should be recommended. Low dose (<25 mg) mifepristone may be more effective than LNG (two doses of 0.75 mg each), but this finding was not conclusive. UPA may be more effective than LNG. LNG proved to be	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						more effective than the Yuzpe regimen. The Cu-IUD was the most effective EC method and was the only EC method to provide ongoing contraception if left in situ. 8. A recent Cochrane review recommends that intermediate-dose mifepristone (25-50 mg) is superior to the LNG and Yuzpe regimens and should be the first choice for hormonal emergency contraception, and where mifepristone is not available, as in South Korea, a single 1.5 mg dose of levonorgestrel should be offered.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
13. Walsh et al. **2021**	Emergency department (ED) South-eastern academic medical center.	Enrolled N= 442 N= 323 (73%) provided blood samples that were sufficient	Experimental Random Controlled Trial (RCT) Quantitative Longitudinal	Prevention of Post Rape Stress video (PPRS) 17-minute video developed by the senior author.	This secondary analysis of a randomized controlled trial (RCT) assessing the efficacy of	1. This secondary analysis found that a brief video intervention administered at the ED interacted with prior rape and cortisol measured at the ED to predict suicidal ideation over a 6-month follow-up among recent rape victims. Partially consistent with hypotheses that the video would be associated with reduced suicidal ideation, particularly for those with heightened ED cortisol, the video was associated with reduced suicidal ideation for women with a prior rape who had heightened ED cortisol.	1. The intervention conferred protection against suicidal ideation among women with elevated cortisol and a prior rape;

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		for cortisol analysis Included N= 235 (53%) completed a sexual assault medical forensic exam (SAMFE)	Randomly assigned to either receive a video intervention that addressed avoidance and promoted healthy coping strategies or standard care	Contained two components: First was designed to prevent distress during the forensic medical exam by providing a	a video-based intervention among women seeking a rape-related medical exam investigated whether the video intervention	2. However, contrary to hypotheses, there was not a main effect of the video on suicidal ideation; and women without a prior history of rape who had heightened ED cortisol did not benefit from the video. 3. The protective value of a brief video intervention at the ED among women with a prior rape and heightened ED cortisol is compelling given the heightened risk of suicide among women with rape experiences. Findings fit with prior studies suggesting that rape victims who receive aid and informational support have lower	2. However, it did not reduce risk for women without a prior rape, particularly those with elevated cortisol. 3. It may be important to

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		and at least one follow-up Video intervention N= 145 Non-Video (NV) Condition	prior to the exam. Participants also provided a blood sample for cortisol. And completed at least one of three follow-	description of the key elements of the exam. Second was designed to prevent future emotional problems and substance	n predicted post-rape suicidal ideation. Based on prior research suggesting that a prior history of rape and	levels of suicidal ideation. In this specific case, the video may have described problems consistent with their previous post-rape experiences, enabling women with a prior rape history to view the information as relevant and helpful. This may have been especially true for prior victims with heightened cortisol. Rather than the blunted cortisol response that is typical of individuals exposed to adversity, particularly rape, prior rape victims with increased cortisol at the ED may have had more adaptive HPA activity that enabled them to attend to and internalize the information presented.	consider the influence of prior rape and neuroendocrine reactivity in developing treatments to address suicidal ideation among rape victims.

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		N= 90 Participants were 235 female rape victims aged 15 or older who presented for a forensic medical	followups at 6 weeks, 3 months, or 6 months post-rape. Suicidal ideation was assessed at each follow-up assessment via the single item on the Beck	abuse. This second component focused on providing instructions for proper implementation of self-directed graded	associated blunted cortisol reactivity are associated with poorer outcomes, we also examined whether cortisol and prior	4. In contrast, prior victims with blunted cortisol may have had impaired stress responsivity that prevented them from concentrating on or taking in the information presented. 6. Unexpectedly, the video was associated with heightened suicidal ideation among women with elevated ED cortisol and no prior rape compared to women with elevated ED cortisol and prior rape. For this subsample without a rape history, heightened neuroendocrine reactivity may have increased focus on the video's discussion of negative consequences for which rape victims	4. More specifically, there appears to be value in screening victims for prior rape and administering this brief intervention to reduce suicidal ideation; however, other avenues

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		examinations at an academic medical center within 72 hours of being raped.	Depression Inventory-II (Beck et al., 1996): "I don't have any thoughts of killing myself (0). I have thoughts of killing myself, but I would	exposure exercises, methods to recognize and terminate inappropriate avoidance, and strategies to improve mood and to cope	rape history moderated the effects of the video on suicidal ideation over follow-up. Hypothesized that:	may need to be vigilant and perhaps led to a sense of hopelessness. It also is possible that unfamiliarity with the medical exam process and associated distress may have interfered with the ability to attend to and internalize video information. Findings reflect a secondary analysis thus additional interventions were not provided to this subgroup; however, careful assessment of subjective distress and qualitative interviews with this subset of victims in future research may better elucidate this unexpected finding and inform efficacious interventions for this group.	should be explored for victims without a prior rape history.

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			not carry them out (1). I would like to kill myself (2). I would kill myself if I had the chance (3).	with anxiety and distress. Non-Video (NV) Condition Involved standard care, which consisted	1) Video intervention would be associated with lower suicidal ideation, 2) Intervention effects would be more	5. Among participants not exposed to the video intervention, women with a prior rape with high cortisol were at the highest risk of subsequent suicidal ideation. Although some studies have found blunted cortisol for prior victims (Resnick et al., 1995; Walsh et al., 2013), other work suggests that rape victims with PTSD who are exposed to trauma-related triggers may have increases in cortisol. As such, women with a prior rape who did not receive the protective benefits of the video may have experienced the forensic exam as a trauma-related trigger that increased cortisol acutely. Because suicidality was lowest among women with a prior rape and high ER	

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				of a SAMFE performed by a trained nurse and physician trained in the presence of rape crisis counselor.	potent for participants with higher ED cortisol as they have been shown to respond more positively to the interventio	cortisol who received the video, the combined effects of these three variables may affect the salience and protective capability of this intervention.	

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					n in prior research.		
14. Campbell et al. **2012**	SANE program Police data collected from five largest law enforcement	Adult sexual assault cases Treated in county hospitals.	Quasi Experimental Quantitative Pre-Post interventional study	Implementation of SANE program in the community. The local rape crisis center was	The purpose of this study was to examine whether adult sexual assault cases were	1. The sampling design for this study was constructed such that the cases in the pre-SANE comparison group were equivalent to the post-SANE intervention group along several important dimensions: all victims were adult women assaulted in the focal county, their cases were reported to the same law enforcement agencies, all had a complete medical forensic exam, and the results of which were analyzed by the state crime lab. The key difference, which was the	1. Case progression through the criminal justice system significantly increased pre- to post-SANE: more cases reached the

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	agencies in this county. Local rape crisis center host for SANE program. Community based (rather than	Comparison group N = 156 cases Excluded = 15 Cases 5 years prior to the implementation	Longitudinal Retrospective record review. Nonequivalent comparison group cohort design. Rigorous	selected as the host for the program because of their 10-year history of providing comprehensive services to sexual assault	more likely to be investigated and prosecuted after the implementation of a SANE program within a large	very crux of this study, was whether the medical forensic exam was conducted by the non-SANE hospital personnel or the SANE program forensic nurses. 2. The results from the multilevel ordinal regression models indicated that there was a significant increase in criminal justice system case progression pre-SANE to post-SANE. More sexual assault cases were moving further through the system, reaching higher levels of case disposition (i.e., plea bargains and trials) after the implementation of the SANE program as	"final" stages of prosecution (i.e., conviction at trial and/or guilty plea bargains) post-SANE. 2. These findings are robust after accounting for

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	hospital based) and facilities established in medical office building easily accessible by public transportation.	of the SANE program (Jan 1994 – Aug 1999) Intervention group *N* = 137 Excluded = 9	quasi-experimental design that permits making causal inferences provided that two groups compared are as equivalent as possible & alternative threats to internal	victims. This group decided that the SANE program should be community based (rather than hospital based).	Midwestern county. We defined our outcome variable as case progression through the criminal	compared with before SANE. Case progression was higher for the SANE cases, and this effect was significant after accounting for department-level and county-level effects in this community over time. 3. Our results indicated that the particular law enforcement agency investigating the case was a significant predictor of case outcome. The five police departments in this study were not consistent in their processing of cases: one was significantly less likely to refer cases to the prosecutor. However, even in that individual	changes in operation at the focal county prosecutors' office and seasonal variation in rape reporting. Implications for policy and practice are discussed.

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	Consists of separate interview & exam rooms, separate waiting area for family & friends, private bathroom with	SANE program cases during its first 7 years of operation (Sept 1999 – Dec 2005)	validity have been reasonably ruled out. Compared criminal justice system outcomes for adult sexual assault cases 5 years prior to the		justice system. We examined changes over time in the number of cases that moved through these	department, there was still an increase from pre- to post-SANE. This department was by no means the most resource strapped as they did have one designated detective for sexual assault cases (but they did not have a semispecialized unit either). However, the departments with specialized investigation units did not have consistently higher referral/case progression. 4. Other effects in the multilevel model demonstrated the importance of organizational-level resources. We uncovered a seasonal effect such that cases processed in month of December	3. SANE programs appear to be a promising agent in changing the long-standing problems of low prosecution, victim-blaming

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	shower. The facility is also equipped with state-of-the-art medical forensic equipment.		implementation of the SANE - to cases treated by SANE program during its first 7 years of operation. The dependent variable for this study was		different stages of system progression—how many reached what outcome, and did this change after the implement	were significantly less likely to reach higher levels of case disposition outcome. It seems probable that less investigational time was put into cases due to holiday vacations. 5. Time to invest in cases also appears relevant at the prosecutorial level. During prosecution election years, cases were also somewhat less likely to progress to higher levels (p = .05). These effects highlight the importance of organizational-level factors, but do not resolve the issue of whether specialized detective units	treatment, and the ineffectual community response to sexual assault.

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	SANE services accessible 24-7 through crisis center's 24-hour crisis line. Team comprised of a nurse & victim advocate,		case outcome, which we assessed as an ordinal variable to capture case progression through the criminal justice system: 1 = not referred by the police for prosecution;		ation of the SANE program? It is hypothesized that there would be a significant increase in adult sexual assault case	are instrumental in advancing sexual assault cases for prosecution. 6. From a policy perspective, these findings suggest that increased advocacy may be necessary on behalf of survivors whose cases are processed during times of lower organizational resources. In addition, institutional advocacy by rape crisis centers with law enforcement agencies may be needed to draw attention to this problem and develop proactive strategies to prevent these decreases.	

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	is dispatched to the site by request of law enforcement, hospital, or the survivor. Geographically		2 = referred to the prosecutor but not warranted for prosecution; 3 = warranted by the prosecutor but later dropped or acquitted; 4 = guilty		progression post-SANE.	7. As expected, positive DNA evidence was also a significant predictor of higher case progression. It has been suggested that DNA evidence is particularly important in sexual violence crimes because it provides "hard" evidence to support survivors' accounts (Arndt, 1988; Littel, 2001). Although we were not able to capture the details of how the DNA evidence was used by law enforcement in their investigation or by prosecutors in plea bargains or trials, its presence was clearly influential.	

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	diverse county in the Midwest Population of 829,453 that included urban, suburban, and rural areas		plea or conviction. Police data were collected from the five largest law enforcement agencies in this county.			8. Unfortunately, we did not have sufficient statistical power to test an interaction effect between DNA and SANE intervention to see if positive DNA was more likely in the post-SANE era, which merits further investigation. Nevertheless, DNA evidence cannot be useful to the investigation and prosecution of a case if it is never collected, which highlights the importance of having highly trained medical professionals, such as SANEs, collect, store, and maintain the chain of forensic evidence to ensure that DNA samples can be obtained.	

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						9. The new federal Violence Against Women Act (VAWA) provisions for forensic exams (i.e., no cost to victims, effective January, 2009) are an important new policy development consistent with these research findings. Sexual assault survivors need to have information about the availability of medical forensic exam services. A multidisciplinary approach whereby legal and mental health professions refer survivors for a medical forensic exam is key. Taking this issue one step further, it is equally imperative that law enforcement submit the evidence kits to the crime lab for analysis, and that there are adequate resources for crime labs as DNA evidence	

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						appears to be instrumental in case processing outcomes.	
15. Ranney et al. **2015**	Sexual assault centre Moi Teaching & Referral Hospital	Treated 321 survivors over 13 months. Patients' mean age was 15.9	Non Experimental Quantitative Retrospective record review	The Center for Assault Recovery-Eldoret (CARE) Established to provide timely,	The primary objective of this research was to assess feasibility of implement	1. This analysis offers a unique perspective on the feasibility of a sexual assault treatment protocol in the ED of a sub-Saharan African hospital. It also proves that comprehensive treatment can be provided in an ED-based, sexual assault centre in East Africa, thereby offering assistance to other health institutions wishing to establish similar centres.	1. Sexual assault is a common presentation to the ED in western Kenya. Based on the characteristics of sexual

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	(MTRH), Eldoret, Kenya Kenyan emergency department (ED) May 2007 - May 2008	years; 50% were younger than 14 years old. Survivors were predominately female and single.	Descriptive Exploratory/ Feasibility study This study was a retrospective review of the records of	culturally sensitive treatment of Kenyan sexual assault survivors using standardised evaluation/ treatment protocol.	-ation of the Center for Assault Recovery-Eldoret (CAR-E) standardised treatment protocol. Hypothesised that	2. It provides an assessment of sexual assault patient demographics and assault characteristics, a little-documented but crucial element of sexual assault prevention efforts. In accordance with studies in other sub-Saharan African countries, the majority of CAR-E's patients were single women under the age of 16. The cause of this demographic pattern is unclear. It may reflect certain societal customs about sex with young girls; in this case, greater public education campaigns may be needed.	assault survivors treated by at the centre under consideration, prevention efforts should concentrate on averting rapes of young women by assailants

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		Perpetrators or patients who were mis-triaged to CAR-E were excluded from the review.	sexual assault survivors presenting to the CAR-E between May 2007 and May 2008. Measurements included: basic demographic information; details about	CAR-E has 3 primary goals. First, and most importantly, CAR-E aimed to provide a safe, kind and respectful	present programme would provide similar rates of of HIV prophylaxis, STI prophylaxis, and EC as programmes in	3. Equally likely, the predominance of minors among the patient population may be due to an unwillingness or inability of older women to identify their sexual assaults as worthy of treatment. This would imply that adult, and particularly married, women need to be better educated as to the definition of rape and the appropriateness of treatment throughout their life-cycle. 3. Corresponding to the theory that minors presented for care because their rape is less acceptable	known to them. 2. Increased education of adult women as to the applicability of treatment protocols to them should also occur. Further study

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		(CAR-E triage criteria are being either the person who is sexually assaulted or the perpetrator of the	relationship with the assailant and characteristics of the assault; and summary of tests performed, test results, and treatments given.	location for evaluation and treatment of sexual assault survivors. Second, CAR-E aimed to guide practitione	high-income countries, but that counsellin g and legal referrals would remain difficult to achieve.	than that of adults, is the fact that very few patients presented to the ED of their own volition; most were accompanied by their parents. Further substantiating the idea that only obvious rape cases presented for treatment, a higher rate of genital and a lower rate of non-genital injuries was seen as compared to injury rates reported in the literature from high-income countries. 4. Finally, the fact that marital rape is not illegal in Kenya may influence older women's willingness to present for treatment.	is needed, however, to further delineate the best means of preventing sexual assault among this population. 3. In addition, the present study shows

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		sexual assault.	CAR-E was established in response to an obvious perceived need. Its protocols were developed over period of 10 months as a collaborative effort between the A&E; the Dep of	rs in timely provision of locally available disease prophylaxis. A standardised set of treatment guidelines were developed.	Secondary goal was to better characterise sexual assault patients presenting for treatment in this region of	5. In terms of assault characteristics, it was found that most of the assailants were known to the patient. This contradicts a recent Kenyan paper, but agrees with a previous study of injury prevalence in a neighbouring community. This finding is also in accordance with international literature, which states that most sexual assault is conducted by perpetrators known to the person who is sexually assaulted. Community prevention efforts should, therefore, be concentrated on decreasing the societal acceptability of rape (eg with increased education about the illegality of sexual assault), rather than increasing safety	that the development of an ED-based sexual assault centre at a referral hospital in western Kenya using a standardised history, physical and

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Reproductive Health (RH); the Academic Model for Prevention and Treatment of HIV/AIDS; physicians from Brown University and Indiana University;	Finally, CAR-E hoped to facilitate prosecution of assault. Developed a standardised encounter form and to improve	Kenya and their injuries. Hypothesised that the majority of the patients would be female, aged less than 18, assaulted	behaviours of women in dangerous circumstances. 6. It was found that the protocol-based history and physical form resulted in thorough chart documentation. The only category of the chart with significant amounts of missing data was the drug and alcohol history; this is likely to reflect reluctance on the parts of patients and providers to address issues of substance use in the healthcare setting. The completeness of documentation suggests that the designed charting form could meet Kenyan legal standards.	treatment protocol is feasible. Using only the resources already present at the hospital, good documentation and high rates of provision of STI and HIV prophylaxis,

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			and community representatives, including police, lawyers and social workers. Evaluation and treatment protocol were created, and were edited over a 10-	reporting to the police force.	by an acquaintance and with significant injuries.	7. Unfortunately, no cases are known that progressed to prosecution over the year of study, so the legal usefulness of the chart could not be tested in reality. However, a rate of reporting to the police similar to that reported in high-income countries was achieved; to the authors' knowledge, the rate of police reporting has not previously been documented in Africa. Increased work must, however, be done to increase translation from police reporting to prosecution.	and EC were achieved. 4. Continued areas of challenge include improving counselling, police referral rates and prosecution of perpetrators.

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			month period. The final proforma reflected an adaptation of WHO, USA and Kenyan guidelines for treatment of sexual assault survivors.			8. One significant deviation from the treatment protocol occurred. Only 44% of patients were documented as receiving counselling. This low rate is most likely due to the fact that the entire A&E department had one counsellor, who was present only 40 h per week. It is possible that survivors who received medical treatment outside of the counsellor's working hours, or when the counsellor was working with other patients, were unwilling to return at a later date for further treatment. It is also possible that patients were not adequately advised of the availability of counselling.	The development of similar centres at other hospitals in sub-Saharan Africa would be of great benefit to the population.

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						9. Of note, since completion of the chart review, the hospital has hired a second counsellor for A&E. Most importantly, the chart review shows a high rate of appropriate testing and treatment of survivors. 10. Although documented rates of provision of post-exposure HIV prophylaxis, STI prophylaxis and EC are lower than those of some 24-h sexual assault response teams, they far surpass most	

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						reported statistics in the USA. This shows not only that it is feasible to institute a de novo sexual assault centre in the ED of a regional hospital in sub-Saharan Africa, but also that a protocol-based centre can achieve high rates of compliance with ideal care guidelines in this resource-poor setting.	
16. Reynolds et al.	Online search of Databases &	Total Included N= 21	Non-experimental Quantitative	Nil	The purpose of this study is to evaluate	1. Expert agencies recommend patient education reading materials should be at or below a 6th grade reading level. Materials at a higher reading level may reduce patient understanding of information. Health literacy includes	1. Expert agencies recommend a sixth-grade or below reading

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2022	government sources. Educational materials originated in various countries: United States, Canada, England,	Online searches yielded 19 of the patient educational materials. Secondary review of references yielded an additional	Retrospective Record Review Descriptive Study identified used patient educational		publicly available HIV PEP educational materials to determine the readability and health literacy levels.	understanding health information and having enough information to make a decision about necessary, next steps. Educational materials that score poorly on understandability or actionability may limit a patient's understanding of health information and which steps to take. 2. To our knowledge, this is the first study to examine the readability, understandability, and actionability of HIV PEP patient information. Our data showed that HIV PEP patient education materials are difficult to understand. None of patient education materials included in this study	level for patient education reading materials. Our data show that post-exposure patient education materials following sexual assault are difficult to understand.

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	Ireland, and Australia. Materials were derived from government-based health care authorities,	two. All eligible patient education materials were selected if they met eligibility criteria and were	materials as participants. Recruitment included the searching for and evaluating HIV PEP patient education materials for eligibility. Eligibility		The objectives of this descriptive study were to (1) assess the readability and (2) evaluate the health	adhered to recommended reading levels. Adherence to health literacy guidelines was mixed. Most of the patient educational materials met understandability cut scores, while most patient education materials fell below actionability cut scores. 5. The high readability scores among our sample demonstrated that a higher level of education was needed to understand the HIV PEP patient education information included our sample. The SMOG and Flesch- Kincaid readability tools indicated reading levels higher than the	2. This mismatch between the patient education material's readability and health literacy levels and the recommended standards will likely limit the

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	public healthcare institutions, government-based sexual assault programs, and HIV/AIDS	written within the past 10 years. Target population for materials varied. Some were developed	criteria included educational materials that focused on HIV post-exposure prophylaxis in a format intended to be distributed to patients in a clinical		literacy level of publicly available HIV post-exposure prophylaxis patient education materials following sexual assault.	recommended 6th grade level (Range 7th grade to college) [4,47] for 100%of our sample. Materials that require a higher reading level, such as the examples in this study, may reduce patient understanding of information resulting in misinformation. 6. In terms of health literacy, nearly all (81%) of patient education materials included in this study met the desired understandability level (≥70%). However, although the educational materials scored at a high literacy level, there were several notable differences among the materials. Only	success of post-exposure prophylaxis course of treatment following sexual assault. 3. Patient education materials that are too complex in

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	non-profit organizations.	for anyone with potential exposure to HIV, while other materials were targeted to specific circumstances, such	setting who have been prescribed HIV PEP medications and written in English. The investigators reviewed printed or printable			four of the patient educational materials used visual aids within the document to convey information. Three of the educational materials used pictures of the antiviral medications, illustrating exactly how the medication should appear. 7. In this study, the mean actionability score (62.38) was well below the desired level of 70% or higher. In total, only three of the 21 patient education documents were considered actionable. A few patient education materials included in this study show how the likelihood of actionability	readability, understandability, actionability, or any combination of these will reduce the likelihood that patients will adhere to recommended treatment plans.

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		as sexual exposure, sexual assault, needle stick injury, sharing needles with intravenous drug use, occupational	patient education materials identified through online internet & database searches over the course of two weeks.			can be improved, i.e., visual aids such as pictographs or the use of a chart, and can be used as a guide. Of note, the three highest actionability scores of the of the educational materials all used pictures of the antiviral medications, illustrating exactly how the medication should appear. 8. The materials with visual aids scored the highest in both understandability (94%) and actionability (Range 80–100%) despite their poor readability (Range 9th-11th grade). Healthcare providers should include pictures to enhance	4. It is important for healthcare providers to review their current HIV PEP patient education materials for readability, understandability, and

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		exposure in healthcare workers.	Databases searched included Ovid, CINAHL, Google Scholar, PubMed, Medline Plus, government sources, such as the Centers for Disease			understandability and actionability of educational materials when available. 9. Another measure healthcare providers can take to increase the understanding of information is using a tangible tool. The use of tangible tools was generally lacking within our sample; however, one document provided an exemplar. The NYC patient education document illustrates how a tangible tool can be used. A 28-day chart appears within the patient education document. The chart can be used by patients to mark each day medications are taken. The NYC patient	actionability in order to improve HIV PEP care.

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			Control and Prevention, National Health Services and HIV organizations. Lastly secondary references reviewed from published			education document also ranked at the lowest reading grade level, which is preferred. 10. Patients seeking or requiring HIV PEP are often in an acute stress after a trauma-related event in which exposure to HIV is likely, such as a sexual assault. The stress of the event can impact how patients comprehend information. Lower health literacy further complicates the capacity to understand information. Much of our sample was not specific to post-exposure education following sexual assault, and, instead, contained general information about post-	

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			review articles. Health literacy level was assessed using The Patient Education Materials Assessment Tool (PEMAT).			exposure prophylaxis resulting from a variety of exposures. The two patient education materials with the lowest scores were specifically indicated for patients who have been sexually assaulted and required to receive HIV PEP. These two educational materials scored the lowest in understandability (38% and 57%, respectively) and had the highest readability level (10th grade), indicating difficulty with understanding. This raises a concern a particular concern in patients who have been sexually assaulted, and may, in part explain the low compliance rate among this group.	

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			Two readability tools, the Simple Measure of Gobbledygook (SMOG) and the Flesch-Kincaid readability test were included in this study.			11. Contrary to previous findings, the *t*-test used to test for significant differences between the SMOG and Flesch-Kincaid readability tools scores indicated no significant finding between the two tools in our study. Other studies have indicated significant differences between these tools.	

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			Paired *t*-test was used to compare the SMOG and Flesch-Kincaid readability scores. A significance was assumed at an alpha value of 0.05.				

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17. Walsh et al **2017**	Emergency Dept. At 1 of 2 medical centers in a Midwestern metropolitan area	Girls and women aged 15 years or older who were recent victims of SA (rape, suspected rape, or attempted rape) and who	Experimental Random Controlled Trial (RCT) Quantitative Longitudinal	PPRS Video Intervention 9-minute video entitled Steps to Recovery included a female narrator providing	This study examined whether a brief video intervention (PPRS) delivered in the emergency department to recent SA victims reduced alcohol	1. Current study adds to the emerging literature concerning secondary prevention of substance use among recent SA victims using technology-based interventions that can be disseminated within EDs or other acute care settings. We extended previous findings comparing PPRS to TAU by also examining whether PPRS performed better than an active treatment comparison control that targeted peritraumatic distress by teaching relaxation, a technique that could have a broad impact on health.	1. Study adds to the literature on acute mental health treatments for recent SA victims. 2. Although there were no main effects for the

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		participated in a SAMFE within 7 days of assault. N= 154 Enrolled N= 711	Participants provided written informed consent at the time of the SAMFE. The study was designed as a parallel trial with an	information that could be used by victims to prevent future emotional problems and substance abuse	and marijuana use at 3 points over the course of a 6-month follow-up compared to treatment as usual (TAU) and	2. Our findings partially supported our hypotheses. There were no treatment condition main effects on substance use. However, we found several significant interactions suggesting that the PPRS video may be effective at reducing alcohol and marijuana use 6 months post-SA (T3) for some subgroups of women. 3. Considering alcohol, PPRS resulted in less use than PIRI or TAU for women who engaged in	interventions, moderation analyses suggested that the PPRS may be effective at reducing substance use following an acute assault for some recent SA victims who are at

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Excluded N= 466 Included N= 245 (233) Attrition	allocation ratio of 1:1:1. Initial sample size was determined via power analysis, and as many participants as possible were recruited	PIRI Video Intervention. 9-minute video included a female narrator providing instructions in diaphragm	an active control condition (PIRI). Prior assault history, minority status, and pre-SA substance use also	past-year binge drinking. PPRS also resulted in less alcohol use than TAU for minority women. 4. Patterns differed for marijuana use. PPRS resulted in less marijuana use days compared to TAU among those who reported no past-year pre-SA marijuana use. 5. Taken together, these results indicated that brief mental health videos can have effects on substance use up to 6 months after a recent SA for some victims.	particularly high risk of substance use, including those with a prior SA history, and those who reported binge drinking in the year prior to the SA.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		N= 12 PPRS video N= 54 PIRI video N= 48 TAU N= 52	before funding ended. Computerized random numbers generator was used to randomly assign participants to 1 of 3 conditions.	atic breathing, use of words such as relax paired with exhalation, instructions regarding muscle relaxation,	were examined as moderators of intervention efficacy. We hypothesized that individuals in the	6. There was a complicated interaction trajectory found for treatment condition (PPRS v PIRI) and prior SA history on number of marijuana use days. At T1 and T2, PPRS and PIRI had similar effects on marijuana use for those who had a prior SA history. However, at T3, among those with a prior SA history, those in the PPRS condition reported fewer days of marijuana use compared to those in the PIRI condition.	3. In addition, results indicated reduced marijuana use among those who did not report use in the year prior to rape.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Of 233 participants, 154 (66%) completed 1 or more follow-ups. Comparisons to non-participants indicated	Prior assault history, minority status, and pre-SA substance use also were examined as moderators of intervention efficacy.	and pleasant nature-related imagery and sounds. ***Treatment as Usual.*** ***TAU*** involved completio	PPRS condition would engage in less alcohol and marijuana use and abuse than those in the PIRI and TAU conditions.	7. For those without a prior SA history, PPRS was more effective at reducing number of marijuana use days compared to PIRI at T1. This complicated pattern suggests that the compounding effects of sexual revictimization may not be linearly related to subsequent substance use and that the PPRS may be initially more effective at reducing substance use among those without a prior SA history. In the long term, however, the PPRS appears to be more effective for those with a prior SA history.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		no differences on age or race (except that those who participated were more likely to indicate more than 1 race).	Measures used: Prior SA. Negative Affect at ED Visit. The negative affect subscale of the	n of a SA examination performed by a SA nurse examiner.		7. Providing recent SA victims with skills, related to either relaxation (PIRI) or other coping (PPRS), may be beneficial, using this universal approach, providing information to all. This universal approach also demonstrates feasibility of addressing substance use for recent SA victims within an ED setting. 8. As we have previously reported (Resnick et al., 2012, 2013), a more targeted approach to intervention that includes additional treatment content for those with problem use would be beneficial, beyond the current universal approach	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Positive and Negative Affect Schedule (PANAS) Alcohol Use and Problems. Alcohol Use Disorders Identification Test (AUDIT)			that delivers similar content to all victims of SA. There were no significant main effects or interactions with the treatment conditions on alcohol or drug abuse problems as assessed by standardized measures. Therefore, although video-based interventions may be effective at reducing nonproblem alcohol and marijuana use for some, as noted above, more intensive interventions may be warranted for individuals with substance use disorders. 9. Findings indicated a trend for minority status to serve as a protective factor for alcohol use at	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Marijuana Use and Problems. Drug Abuse Screening Test (DAST).			T3 (in the PPRS condition specifically), but it was a significant risk factor for marijuana use frequency at T1 and T3 (in the PPRS condition specifically). Findings fit with national data suggesting that some racial/ethnic groups have lower risk for alcohol use disorders but increased risk for marijuana use disorders compared to individuals who identify as White. These somewhat oppositional findings may relate in part to baseline differences in substance use among minority and White participants. Taken as a whole, these data underline the importance of taking into consideration minority status, pre-SA	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						substance use, and prior SA history when explaining substance use after an acute assault.	
18. Schilling et al. **2017**	The Children's Hospital of Philadelphia Emergency Department (ED).	N= 97 identified charts (pre-QI implementation period) N= 50	Quasi Experimental Quantitative Pre-Post interventional study	6 interventions implemented (QI period). 1. Standardiz	The aim of our project was to increase the rate of children who receive correct HIV-PEP	1. Aim of this quality improvement project was to increase the percentage of patients who received correct 28-day HIV-PEP regimens after being evaluated and treated for acute sexual assault at a single pediatric ED. We accomplished our aim and reduced errors in HIV-PEP prescriptions for this population.	1. A multifaceted quality improvement process improved the rate of receipt of appropriate HIV-PEP regimens for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	This is a single site ED of a large, urban, tertiary pediatric care center that has an annual census of over	post-QI implementation period)	Longitudinal Retrospective record review. Quality Improvement Study	ing the telephone follow-up ***assessment*** process by the child abuse team that occurs 2–3 days following ED discharge.	regimens among those diagnosed with acute sexual assault at our ED. Standardized Squire guidelines were used for quality improvem	2. A major contributor to the increased rate of appropriate treatment was revision of key clinical decision support aids to automatically include the dosages, duration, type, and number of indicated medications. This finding is not unexpected, as the goals of clinical pathways are to standardize care, improve outcomes, and reduce variability. 3. However, because of the reliance on clinical pathways to guide real-time care, pathways must contain accurate and relevant information to ensure that high quality care is delivered, and must be periodically re-evaluated to ensure the	pediatric victims of sexual assault. Decision support tools are instrumental in sustaining ideal care delivery, but require ongoing evaluation and improvement

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	90,000 patient visits. Pre QI-implementation: 2/2012–8/2014		MDT quality improvement (QI) team convened, consisting of ED and child abuse physicians, ED nurses, ED nurse practitioners, ED social workers, & ED child life	Identification of any barriers to getting 28-day course of HIV-PEP identified and addressed. Next 3 interventio	ent project planning and manuscript preparation.	care delivered is reflective of the intended high quality. 4. Issues related to the presentation of data on a clinical pathway itself may have unintended consequences and ultimately prove problematic in achieving the desired goals of patient care. In this case, the initial protocol developed in 2010 indicated that a 4-day starter pack be provided to the child during the ED encounter. While it was recognized as a “starter pack”, there was no explicit prompt on the pathway to ensure prescriptions were provided at discharge for the	in order to remain optimally effective. 2. Utilizing a QI approach to implement standardized follow-up practices, embed educational

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	QI-implementation: 9/2014–4/2015 Post QI-implementation: 5/2015–3/2016		specialists. Review the medical management of acute sexual assault patients presenting to our ED. Fall of 2014 identified an important area	ns were educational: 2. ***Screen saver*** reminding providers to order the 28-day supply of HIV-PEP.		remaining HIV-PEP treatment course. Following initial publication of the pathway, and the recognition of these prescribing errors through this QI project, modification was made on the pathway and order set to explicitly state, in addition to the 4-day starter pack, a prescription for the remaining 24 days should also be provided to the patient. 5. Regular and systematic scrutiny of existing clinical pathways is paramount to delivery of effective, high quality care. Because these improvements involved system changes to heavily relied upon clinical decision support work aids, we expect these improvements to be	initiatives within ED workflow, and improve the clinical decision support aids utilized in prescribing HIV-PEP measurably reduces the rate of errors

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			for improvement: review of the procedures involved in the provision of HIV-PEP after acute sexual assault. Correct HIV-PEP was defined as	3. HIV-PEP prescribing recommendations highlighted as a "***safety tip***" during ED		sustainable; to date the data support the longevity of our improvements. 6. Employment of the g-statistical process control chart, compared to other QI methodology, most effectively aids this ongoing surveillance of the success of our QI efforts. G-charts specifically track the number of normally occurring events (correct HIV-PEP prescriptions) between rarely occurring incidents (incorrect HIV-PEP), based on the assumption of a geometric distribution of data and variable time interval between events. Unlike conventional statistical process control	associated with medications indicated following acute sexual assault among pediatric patients. 3. Many centers have clinical

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			being prescribed a 28-day course with a recommended 2- or 3-drug regimen, and obtaining the full course from the pharmacy. We did not consider whether or not	clinician rounds. 4. HIV-PEP email "pearl," or key practice recommend-dation.		charts (p or c charts), which when utilized to track rare or infrequent events often result in subgroups being plotted too infrequently for real-time control of these problems, g-chart analysis based on inverse sampling detects process changes or verifies improvements faster. Relevant increases or decreases of the incidence of rare events (i.e., incorrect HIV-PEP) are easily detectable; a decrease in time interval between HIV-PEP prescribing errors will serve as an "alarm bell" indicating additional QI interventions.	pathways with associated order sets in place, and our work therefore offers an important lesson; clinical decision support tools such as clinical pathways and order sets

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			the decision to prescribe HIV-PEP was appropriate, rather we focused on whether the child received the HIVPEP once the decision was made to prescribe it.	Final two were clinical decision support tools: 5. ***Pathway.*** Revision of		7. When a child in whom HIV-PEP is indicated fails to receive this appropriate treatment, a potential serious adverse event may result i.e. the child may acquire HIV. If appropriate prophylaxis is prescribed, this outcome can more assuredly be avoided. Additionally, completing part, but not all, of a course of HIV-PEP (such as a 4 day starter pack only) has the potential to lead to HIV resistance within the community. 8. Families of children who have been sexually assaulted are often in crisis by virtue of this victimization. When there are prescribing errors,	require continuous evaluation, revision, and improvement in order to be effective and remain a valuable tool for the delivery of high quality clinical care.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			We excluded families who were offered but declined HIV-PEP.	schematics on SART clinical pathway. 6. Order set. Revision of the associated order set to auto-		or pharmacies are unable to fill the necessary preventative medications, families experience additional stress and loss of control in an already challenging situation. By achieving our project aims, we were successful in increasing the quality of care provided to this high-risk pediatric patient population. 9. Our project was conducted at a single center in which particular problems were identified. While these specific problems may not exist at other institutions, our approach to identify and evaluate the problems, and to develop and test	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				populate the number of days for the HIV-PEP prescription.		interventions to improve medical care for child victims of sexual assault, is generalizable. 10. Our study results also demonstrate internal validity, by virtue of our project consistency with the accepted methodological standards by Squire for quality improvement research (Davidoff et al., 2008).	
19. Britton et al.	Emergency	Included N= 453	Quasi Experimental	The study intervention was	We sought to determine	1. Although clear guidelines exist for recommended prophylaxis in the sexual assault patient, studies reveal that the CDC guidelines	1. We found that in this setting, the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2013	Department Maine Medical Center; academic, tertiary care referral hospital and Level I Trauma	Pre-order Set N = 322 Post-order Set N = 131 Excluded	Quantitative Pre-Post interventional study Longitudinal	implementation of standardized electronic order set that automatically offered clinicians pharmacologic orders that were	the effect of a standard; computerized order set for the treatment of adult victims of sexual assault on compliance with current	are applied to only a small minority of cases. Our study shows that simple steps to encourage evidence-based practice can change the practice of a large group of medical providers. This reduction in variability and adherence to best practice will pay great dividends in improving the health of the population and reducing costs of health care. 2. Although guidelines are recognized as having great potential to improve clinical care, low rates of guideline adoption into clinical practice have been documented. Extensive work aimed at	implementation of a standard, electronic order set for guiding the treatment of adult victims of sexual assault significantly improved medical provider

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Center located in Portland, Maine October 1999 - May 2009	N= 72 Patients treated in the ED after alleged sexual assault.	Retrospective record review. Conducted a pre-test post-test study to evaluate the effect of implementation of a standardized electronic order set.	adherent to CDC treatment guidelines for the patient population of interest.	Centers for Disease Control and Prevention (CDC) guidelines for the treatment of this population.	understanding the most effective ways to implement guidelines has been completed, and evidence suggests that education alone is not effective at changing the practices of physicians. 3.The most effective implementation methods seem to incorporate conveyance of the guideline's information at the point of care. Our results are consistent with these findings and illustrate that guideline uptake can occur in the absence of educational interventions when clinically useful information is provided to clinicians as they practice.	adherence to CDC treatment guidelines. 2. No differences in adherence to guidelines were noted based upon evaluation by a SANE/

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Patients who were under 12 years of age or who had a documented refusal of pharmacologic treatment were excluded.	Compared rate of adherence before and after order set implementation. Cases categorized as: 1) completely adherent to CDC	Three versions of the CDC guidelines were introduced during the study period, but antibiotic prescribing recommend-dations			SAFE nurse, patient sex, or patient race. 3. This research demonstrates that electronic clinical decision supports hold promise as a method for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Excluded patients <12 years of age because a separate set of treatment guidelines is utilized in the care of this	recommendations; 2) Omission of one, two, or three of recommended medications; 3) including a sub- optimal antibiotic choice;	did not change, thus allowing for the evaluation of only one order set during the study.			decreasing prescribing error, increasing the utilization of best clinical evidence, and improving the consistency of care delivered to ED patients. Thereby encouraging evidence-

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		patient population.	4) including inadequate antibiotic dosing. Cases could receive more than one of these designations. Also evaluated adherence to				based practices in clinical medicine.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			CDC guidelines based upon several covariates, including patient characteristics (sex and race) and whether or not the patient was evaluated by a (SANE/SAFE)				

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			while in the ED.				
20. Schilling et al. **2015**	Pediatric EDs 38 EDs in the Pediatric Hospital Informatio	12 687 included cases. At 38 EDs	Non-experimental Quantitative Descriptive	Nil	To examine rates of recommended testing and prophylaxis for chlamydia,	1. Overall, 44% of adolescents received recommended testing (chlamydia, gonorrhea, pregnancy) and 35% received recommended prophylaxis (chlamydia, gonorrhea, emergency contraception). Across EDs, unadjusted rates of testing ranged from 6% to 89%, and prophylaxis ranged from 0% to 57%. Presence of a specialized sexual assault pathway was associated with increased rates of prophylaxis	1. The evaluation and treatment of adolescent sexual assault victims varies significantly across pediatric EDs.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	n System database. January 1, 2004 - December 31, 2013.	Children 12 to 18 years of age discharged with ICD-9-CM diagnosis code of 995.53 (child sexual abuse),	Retrospective Medical Records Review Retrospective study of adolescents diagnosed with sexual		gonorrhea, and pregnancy in adolescents diagnosed with sexual assault across 38 pediatric EDs.	even after adjusting for case-mix and temporal trends. 2. In this large, multicentre study of adolescents evaluated in pediatric EDs for sexual assault, we found substantial variation in rates of performance of recommended testing and prophylaxis across hospitals. 3. Pathways were associated with higher rates of prophylaxis, but not testing. Teams were not associated with outcome performance. Our	2. Such variation raises concern over the quality of care for adolescents with sexual assault and highlights the importance of

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		E.960.1 (rape), or V71.5 (observation after rape) were eligible for inclusion.	assault at 38 EDs in the Pediatric Hospital Information System (PHIS). Survey of the EDs and validation of the accuracy of		To determine whether specialized sexual assault pathways and teams are associated with performan	survey demonstrated variation in reported practice, although not to the degree observed in the patient-level data. 4. As reported in prior studies, we found that STI prophylaxis was more common in females. Perhaps because boys are more likely than girls to make delayed disclosures, boys may have been more likely to present for care outside of the recommended timeframe (72 hours) for prophylaxis. Also possible that the younger boys in the study were more likely to be prepubertal compared with the younger girls, and therefore	dissemination of guidelines and standardization of medical care for this vulnerable population. 3. Our findings suggest that

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			International Classification of Diseases, Revision 9, Clinical Modification (ICD-9-CM) diagnosis codes and billing codes in PHIS to study this		ce of recommended testing and prophylaxis. Hypothesized that clinical care pathways &	clinicians may have opted not to treat them based on the adolescent guidelines. However, there could also be a difference in the clinician's perception of risk of acquiring STIs among girls and boys. 5. Rates of testing and prophylaxis were lower in younger patients, which may be because they were more likely to be prepubertal. We chose 12 for the lower age limit for our study, consistent with previous studies, because on average, girls begin puberty at ages 10–11 and boys at 11–12.	sexual assault pathways show promise in improving adherence to recommended treatments for this population, but further research is needed to better understand the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			population were also conducted. We surveyed ED and child abuse physicians from these 38 EDs to determine presence & year of		specialized teams would be associated with an increase in testing & prophylaxis rates.	6. Our results showed that clinical pathway presence was associated with modest improvement in hospital performance of recommended prophylaxis, even after adjusting for case mix and temporal trends. This finding is expected, as the goals of clinical pathways are to standardize care, improve outcomes, and reduce cost; pathways have proven successful in this regard for multiple pediatric conditions. 7. We were unable to review the clinical pathways directly, however, and pathway content and clinician uptake may have varied across	role of pathways in improving quality of care.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			initiation of specialized sexual assault clinical pathways or teams.			centers. Future research could explore factors associated with pathway adherence such as clinical decision support embedded into electronic medical records or designated pathway champions. 8. The lack of association of care with specialized sexual assault teams may be because the teams captured in our data do not represent a standardized model of care but are heterogeneous in nature.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						Additional investigation into the impact of such specialized teams on quality of care for sexual assault victims will need to include more detail regarding team composition and training. 9. The observed variation in rates of testing and prophylaxis across hospitals suggests underlying differences in the clinical approach to the care of this population. Our survey found that most EDs did not use a time cut off for STI testing in adolescents, yet only 44% of the adolescents in the study sample actually received the recommended testing.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						10. In spite of laws in all 50 states that limit the evidentiary use of a victim's previous sexual history to protect the credibility of the victim's testimony,11 26% of the EDs endorsed not performing STI testing during the acute evaluation at least some of the time due to this concern. 11. Most experts, including the AAP and CDC, favor universal screening of consenting adolescent victims of sexual assault to detect	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						preexisting and new infections. Perhaps some clinicians reason that if prophylaxis is administered for chlamydia or gonorrhea, obtaining the test does not influence medical care and thus is not cost-effective. This reasoning ignores the importance of reporting communicable diseases and the opportunity for the sexually active adolescent to inform his or her partner of a positive test and refer them for treatment as well. Furthermore, if this practice were occurring, we would expect the overall rate of prophylaxis to be higher than the overall rate of testing, which was not the case (35% vs 44%).	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						12. Some EDs might provide outpatient prescriptions for prophylaxis rather than administering the medication during the visit, and this would not be captured in our data. However, almost 70% of the EDs reported administering all prophylaxis during the ED encounter and therefore cannot account for the overall prophylaxis rate of 35%. 13. Thus, whereas our survey provides some insight into practice variation in the medical evaluation of adolescent sexual assault victims, the reported differences are not fully explained	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						by the observed differences. This suggests a knowledge-to-practice gap, and that clinician education and dissemination of existing guidelines could potentially lead to improvements in care. Future research may be helpful in understanding barriers to guideline implementation and interventions to improve adherence.	
21. Patel et al.	US emergency departments	National sample of US hospitals	Non-experimental	A 26-item telephone survey assessed	Aim of the present study was to	1. The long-term aim of the present research is to promote a concise and standardized model—CMCM—for the medical care of sexual assault patients. Before interventions are designed to	1. Present study provides an accurate

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2013	May 1, 2009 - March 31, 2010,	Sample N=964 Included N= 642 Excluded N=322	Quantitative Descriptive Cross sectional Survey	provision of services to sexual assault survivors in accordance with comprehensive medical care manageme	determine the percentage of US hospitals providing emergency medical care for survivors of sexual assault and to describe	expand acceptance and implementation of this model, these national data were collected to understand better the current standard of care. 2. Only 17% of surveyed emergency departments provided all elements of CMCM. High variability was observed among CMCM components, with 100% of hospitals providing care for acute physical trauma but only 40% providing short- and long-term mental health counseling. A low rate of comprehensive care, combined with high variability in institutional norms, results in many patients remaining at risk for some or all sequelae	overview of the current management of survivors of sexual assault and highlights key areas for improvement. 2. The need to implement the type of care proposed in

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		No Response N= 60 Response Rate N= 582 (90.6%)	A 26-item questionnaire was adapted from a previous survey of CMCM delivery in Illinois. Telephone surveys were conducted by	nt (CMCM). The patient-centered CMCM model is based on best-practice recommendations	to what extent these hospitals provided the 10 elements of CMCM. The secondary objective	of sexual assault, including pregnancy, STIs, and mental health problems. 3. For many survivors, the emergency department is the first—for some, the only—opportunity to receive both immediate therapeutic care and vital preventative services. Poor or inadequate medical care may contribute to the secondary victimization experienced by those who have undergone sexual assault. The present study documented a deficit in provision of preventative services. Rates of provision of CMCM elements do not necessarily coincide with the prevalence	the CMCM model is supported by numerous medical and public health organizations. The present study demonstrates that the quality of care provided to survivors of

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			trained study staff using standardized scripts. Calls were made Monday through Friday between 8:00 AM and 6:00 PM.	from expert US organizations: the CDC, the US Department of Justice, the American College of Obstetricians &	was to identify the percentage of hospitals that always provided all 10 elements of CMCM.	of the various conditions that the elements are intended to address (Table 4). 4. All of the surveyed emergency departments provided acute physical care to sexual assault survivors. Reported rates of physical injury in the form of non-genital trauma range from 25% to 45% of sexual assault survivors, while fewer (19%–22%) present with genital trauma [16].	sexual assault in hospital emergency departments is deficient and requires urgent attention and improvement to address acute and long-term sequelae.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			After reaching the main hospital number, surveyors asked for the hospital zip code, then requested to be transferred to the ED. Survey information	Gynecologists, the American College of Emergency Physicians. It also closely parallels UK national guidelines.		5. Rates of care provided for more common sequelae, such as mental health trauma, were lower. Current studies indicate that one-third of survivors develop post-traumatic stress disorder, and another one-third undergo at least 1 major depressive episode within the first year after assault. Individuals who have been raped have 75% higher odds of attempting suicide compared with individuals who have not been raped. Despite the fact that mental health issues affect the majority of survivors, only 40% of the emergency departments provided consistent same-day rape crisis counseling and follow-up referrals. Immediate rape crisis counseling and	3. This deficiency may be due to limitations in hospital resources or provider training, or lack of awareness of the range of consequences

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			was collected from a staff nurse, a charge nurse, a nurse manager, SAFE/ SANE, ED supervisor, or ED director. Maximum of 6 call attempts were made to each hospital,			long-term follow-up are essential to help survivors mitigate traumatic symptomatology. 6. The US rate of unintended pregnancy due to sexual assault ranges from 1% to 5%, accounting for approximately 32 000 pregnancies per year—half of which end in abortion. Emergency contraception could prevent up to 90% of these pregnancies if administered within 72 hours of assault. Despite this, 40% of surveyed emergency departments still failed to provide or counsel patients on emergency contraception. Alarmingly, no change	of sexual assault. 4. Strategies such as national and organizational guidelines, state laws, and expansion of evidence-based programming

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			after which hospitals were listed as non-responsive.			was observed from 2004 to 2009 in national provision of emergency contraception after assault. Although there has been no national study since 2009, smaller studies indicate inconsistent pattern changes in the intervening period. In a study of emergency room physicians in the mid-Atlantic region of the USA, 83% reported “always” or “usually” offering emergency contraception to survivors of sexual assault. 7. The estimated risk of acquiring STIs, not including HIV, as a result of sexual assault ranges	(e.g. SAFE/SANE) are methodologies to improve care for survivors of sexual assault. 5. Checklists are now widely accepted in

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						from 2% to 14%. The CDC recommends prophylaxis for Neisseria gonorrhoeae, Chlamydia trachomatis, Trichomonas vaginalis, and hepatitis B in all instances of sexual assault. Disappointingly, 18% of the surveyed hospitals failed to follow this guideline, requiring the patient to seek additional care. Although 82% of hospitals provided prophylaxis, 86% provided testing; this disconnect is a lost opportunity, as the purpose of testing would provide baseline status information again requiring additional follow-up by the patient. Testing for STIs and provision of prophylaxis serve different but important roles in sexual assault care; they were	many areas of medicine. The development of a CMCM checklist, aimed at both administrators and practitioners, may aid in standardizing the adoption of high quality care for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						seen consistently in only 77% of emergency departments. 8. The same issue holds true for HIV testing and prophylaxis. In the present study, 69% of hospitals reported “always” offering HIV prophylaxis to sexual assault patients. Although there is debate regarding routine provision of HIV non-occupational post-exposure prophylaxis (nPEP) for survivors of sexual assault, the CDC advises this decision to be made on a case-by-case basis, taking into account the risk profile of the	survivors of sexual assault. 6. The elements of CMCM are supported by current expert guidelines and based on evidence regarding mental health,

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						assailant and the patient. US Department of Justice guidelines call for healthcare providers to "meet or exceed CDC recommendations" with regard to nPEP. While nPEP may not be indicated for all sexual assault patients, this decision must take place in a patient centered model and should be offered and discussed with all sexual assault survivors seen in the emergency department. 9. One of the strengths of the present study is that it involved a nationally representative survey with a high response rate.	pregnancy, and STI risks among survivors of sexual assault. Broader adoption of CMCM during the small, but critical, window of emergency department care may

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							improve short- and long-term outcomes among sexual assault patients.
22. Walsh et al. **2019**	Emergency departments.	Information for sexual assault patients who	Non-experimental Online email surveys	Telehealth support & services.	The purpose of this process evaluation was to	1. This pilot study represents the first time synchronous telehealth services have been provided for adult and adolescent sexual assault patients. Results of the process evaluation support the use of telehealth technology to	1. These findings provide support that telehealth services for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Six sites in three states. Two U.S. Navy (Navy) hospitals; one rural hospital; and one tribal	presented at emergency departments; N = 215 Telephone and online surveys with clinicians who	Mixed method: Quantitative and Qualitative Descriptive Exploratory	Live sexual assault nurse examiner (SANE) services were provided via telehealth to support site clinicians	understand the experience of providing and receiving telehealth based assistance during adolescent and adult sexual	improve the quality of care provided to patients experiencing sexual assault. 2. Potential barriers such as patients not consenting to a live video stream of a SANE during the forensic examination, technology disruptions, and clinician challenges working remotely were largely not found. Most patients (86%) who sought evidence collection accepted telenursing services. When the Navy sites were removed from the analyses because of lower rates of consent, 97% of civilian patients accepted services. This suggests that there could be some	sexual assault examinations is a promising practice. 2. Telehealth impacted site clinician confidence in providing an effective examination, their ability to provide their patient with

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	hospital in the United States, with SANE programs and some newly established. Also two community hospitals	provided or received telehealth services; N= 178 The response rate was 79% for teleSANEs; 55% for	129 patients and site clinicians received services via telehealth & additional 86 site clinicians received consultation advice via telehealth.	conducting sexual assault forensic medical examinations for adult and adolescent patients. The assistance	assault forensic medical examinations at six hospitals across the country. Aims of the study:	differences in the messaging about telenursing at the military sites or there could be differences in how patients in the military perceive civilian assistance. 3. Interviewees reported few problems related to the technology that disrupted telenursing services. When problems were mentioned, they tended to be minor. The lack of technological disruptions is especially notable given that the average length of live telehealth services was 2.5 hours.	the best care, and their sense of feeling supported. 3. TeleSANEs provided a wide range of assistance to site clinicians, providing specific advice

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	without SANE programs also served as pilot sites. Between May 1, 2015 - March 31, 2018.	site Clinicians; 39% for Navy corpsmen, with an overall rate of 63%.	Most patients consented & accepted SANE services via telehealth (86% overall and 97% in non-U.S. Navy sites).	provided remotely by SANEs to site clinicians included: guiding clinicians through history taking & documentation; forensic	(a) Determine the extent to which patients consent to synchronous telehealth services after experiencing a	4. Nearly all interviewees reported they felt comfortable working together and they had an open and professional relationship during the examination. Without the ability to have such positive relationships, it would be difficult to have an effective telenursing experience. 5. Site clinicians consistently rated teleSANEs highly and valued their assistance and identified a range of ways in which the teleSANEs were helpful. Site clinician acceptance is necessary to the success of telehealth programs, which are unsustainable without it. The positive experience	consistent with best practice. These successes suggest that telehealth deserves further exploration as an intervention model for sexual assault patients in

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				examination & evidence collection techniques; identifying & documenting injuries; and guiding	sexual assault; (b) Examine how well the technology worked during examinations; (c) Explore the range and types	of the site clinicians with telehealth for sexual assault patients is a significant achievement. Showing recipients experienced this new intervention as helpful is a critical first step in the development of telehealth as a viable component in the response to sexual assault. 6. Increasing access to SANEs is important. A number of studies have documented the increased quality of evidence collected by SANE versus non-SANE trained providers, as well as high attrition rates and professional burnout when	underserved communities.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				clinical practice. Important part of the NTC protocol was for teleSANEs & site clinicians to have an opportunit	of assistance teleSANEs provided to site clinicians conducting examinations; (d) Explore how teleSANEs and site	clinicians and SANEs provide trauma care without adequate supports. 7. As shown through this project, telehealth offers a mechanism for mentoring and training of less experienced forensic examiners as well as providing peer review of sexual abuse cases, and support and debriefing. These additional support and expertise result in an improved quality of examinations, a sense of teamwork, and a decreased sense of isolation for clinicians.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				y to speak together immediately before they worked with the patient – Opportunity for teleSANE to learn what the site	clinicians worked together; and (e) Assess the impact of the assistance as rated by site clinicians conducting examinati	8. It is possible for teleSANEs to successfully contribute to forensic examinations remotely by guiding clinicians through history taking and documentation, forensic examination and evidence collection techniques, identifying and documenting injuries, and guiding clinical practice. Some clinicians mentioned their biggest fear was collecting forensic evidence incorrectly and teleSANEs helped enormously with this.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				clinician already knew about the assault & the patient, and to talk about the type of assistance the site clinician wanted.	ons and to explore whether the non-SANE sites had a different experience compared with the other sites.		

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				Talked immediately after the patient left - time for teleSANEs to help clinicians with documentation and debrief about the			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				experience. Video conferencing technology was used during the examination -			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				teleSANE, site clinician, and patient were able to communicate with each other.			
23. Gilmore et al	South Carolina	Sample N= 149	Non-experimental	SC-Safe	The current study	1. The current study presented initial usability findings of SC-Safe, a mHealth application for	1. The current study assessed the initial

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
2019		Responded / Participated N = 13 (11.46%). This participation rate is consistent	Online email surveys Mixed method: Quantitative and Qualitative	Mobile health application. for individuals who have experienced recent sexual assault.	assessed the usability of a mobile health application for individuals who experienced recent sexual assault,	post-sexual assault mental health, from both individuals who received a SAMFE and providers who work with individuals who have experienced sexual assault. 2. Similar to previous research [6–8], participants in this study indicated experiencing significant barriers to receiving services after sexual assault. Therefore, SC-Safe may be one way to address perceived barriers to accessing follow-up care given that it can be freely accessed any time that is convenient, and provides information in a	usability of SC-Safe and findings suggest that the application is usable and fit for future effectiveness testing, filling an important gap in treatment for individuals

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		with other research from the emergency department. Providers N = 25 Participants were:	Descriptive Exploratory Purpose of usability testing: obtain objective metrics and identify opportunities to strengthen	SC-Safe has five major intervention modules and a referral to treatment component: (1) alcohol &	SC-Safe, using a mixed method approach. We also assessed initial usability and likelihood of recommending this	manner that is trauma-informed and addresses stigma-related concerns. 3. Overwhelmingly, the participants indicated that SC-Safe would be a helpful resource for individuals who experience sexual assault due to the pervasive barriers that these individuals face to accessing care. 4. Providers indicated that they believed SC-Safe would be helpful for individuals who experienced	who experience sexual assault. 2. Future work should assess the efficacy of SC-Safe among a diverse group of individuals who experienced

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		(1) individuals who experienced sexual assault; (2) providers who serve individuals who experience recent	the quality of a product. Common usability problems include issues that prevent task completion, take the user off course from the task, create confusion,	substance use; (2) suicide prevention; 3) posttraumatic stress & depressive symptoms; (4) adaptive	application to individuals who recently experienced sexual assault among community providers.	recent sexual assault and that they would recommend it if it were freely available. 5. Further, participants who received a SAMFE provided useful feedback regarding the usability of the application. Regarding the aesthetics and usability, participants indicated that SC-Safe was simple and not overwhelming and the layout allowed for privacy. 6. Suggestions for improvement included to increase the color brightness and font size and to	recent sexual assault prior to disseminating this intervention. to the general population. Although SC-Safe was created initially for individuals who experienced

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		sexual assault. Individuals over the age of 18 residing in South Carolina who have experienced sexual assault.	and/or decrease satisfaction with the product. Several studies have examined how usability testing can improve user experiences with direct-to-consumer online	coping skills including mindfulness, distress tolerance, & emotion regulation; (5) physical health including		make navigation functions clear and uniform throughout the application. 7. Participants provided useful feedback regarding the content of SC-Safe. Specifically, they indicated that the modules on behavioral health topics (i.e., substance use, suicide, posttraumatic stress disorder, depression) were informative and helpful and that they specifically enjoyed the general coping skills (e.g., mindfulness, emotion regulation) that would be helpful even if one is not experiencing clinically significant levels of mental health symptoms.	sexual assault within the state of South Carolina, this application has the potential to address the gap of post-sexual assault healthcare needs of individuals

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Recruited from local hospital in South Carolina if they experienced a SA & received a SAMFE within 120 h of a SA. Recruited	products targeting health conditions. Once the participant finished using the application, the interviewer administered a final	sexual health & sleep; and (6) referral to formal assistance through various community resources. Upon completio		8. Overall, the findings suggested that the usability of SC-Safe was successful and it would be useful to examine the efficacy of this application. 9. Although the participants indicated that SC-Safe was discreet, additional precautions may be needed to protect individuals if they experienced sexual assault in the context of intimate partner violence. Given that experiencing sexual assault in the context of intimate partner violence	who experience recent sexual assault nationwide.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		from a database of individuals who had received a SAMFE in the past two years. Providers were	set of semi-structured interview questions to learn more about participants' experiences with SC-Safe. Interviewers were permitted the flexibility to probe and ask relevant	n of a brief survey, users receive a recommend-dation about which modules to use based on their responses. Modules consist of		decreases the likelihood of engaging in follow-up services [10], it is imperative to address the service utilization gap that exists with these individuals and the unique concerns that exist for safety.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		recruited to complete an anonymous survey about the mHealth application. Providers were recruited during a local	follow-up questions. Measures 1. Sexual Assault Characteristics: Adapted from Sexual Experiences Survey. 2. Current Mental Health and Substance	personalized psycho-education and skills in the form of brief descriptive text and interactive learning exercises. Users can access all of the			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Sexual Assault Response Team meeting.	Use Symptoms: The Patient Health Questionnaire 3. Posttraumatic stress symptoms (PTSD): PTSD Checklist (PCL-5)	modules if they prefer.			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			4. Alcohol misuse: Alcohol Use Disorders Identification Test (AUDIT-C) Provider Experiences and Feedback:				

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Providers completed 3-item survey about their experiences working with SA survivors; & completed following questions regarding SC-Safe:				

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			1. “How helpful do you think SC-Safe (app) would be for individuals who have experienced sexual assault”; 2. “How likely would you be to recommend SC-Safe to				

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			individuals who have experienced sexual assault".				
24. Lecher et al **2021**	13 emergency care centers & community-based programs	Screened n = 11 781 Missed N = 1091 Excluded	Non-experimental Surveys	Nil	This study investigated the perceptions of a large, diverse	1. To our knowledge, this study is the first to examine assessments of SANE care by a large group of female patients who had been sexually assaulted and who presented to diverse SANE programs in the US. Our results are consistent with smaller studies in showing that most of the	1. Results strongly reinforce the importance of including SANEs whenever

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	in United States. From 2015-2019 13 geographically distributed US	N = 7848 Declined Participation N = 1762 Included N = 1080 Attrition/Lost	Quantitative Descriptive Exploratory This research is part of the Women's Health Study:		group of female patients who had been sexually assaulted and who received care from SANEs working at 13 geographi	patients who participated view the SANEs as providing high-quality care. 2. Our results extend this past research by showing that this is true for each of the 5 care domains examined in this study, including taking patients' needs/ concerns seriously, not acting as though the assault was the fault of the patient, showing care and compassion, explaining the sexual assault examination, and providing follow-up information.	possible in treating female patients who have been sexually assaulted. SANEs provide an emotionally supportive and respectful environment for patients while

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	programs.	N= 374 Study participants N= 706 Sample N= 695 A power analysis	First large-scale, emergency care–based, multisite longitudinal cohort study of adult female patients who have been sexually assaulted.		cally distributed emergency care & community-based programs in the US. We addressed 2 questions:	3. In addition, our results also extend previous findings by demonstrating that most female patients who had been sexually assaulted and were willing to participate in research view their SANE care as high quality across geographically, demographically, and administratively (ie, emergency care–based and community-based) diverse SANE programs, diverse demographic groups consisting of patients who had been sexually assaulted, and female patients who had been sexually assaulted with diverse mental and physical health statuses.	performing evidence collection and/or providing health-related services in the immediate aftermath of assault, and these services are critical in helping to begin the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		for the sample size was based on the proposed main outcomes for the overall study.	Participants completed self-administered survey 1 week after receiving SANE care at a follow-up visit. Completed on laptop computers in private rooms.		1. To what extent did patients perceive that the SANEs provided high-quality care, including taking the	4. These quantitative findings are consistent with the participants' qualitative reports. For example, 1 female patient who had been sexually assaulted wrote, "The SANE nurse that I experienced was phenomenal. Her general attitude and humor greatly affected me in positive ways after the assault." Another patient who had been sexually assaulted wrote, "Everything was really good. I didn't even know they had that SANE organization. You guys are doing everything right."	emotional and physical healing process. 2. Most adult female patients who had been sexually assaulted and were seen by SANEs at

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Women who were aged at least 18 years & presented for SANE care within 72 hours of SA were eligible to participate.	Surveys asked about the patients' perceptions of SANE care, demographic characteristics, and health status before the assault. Perceptions of SANE care evaluated using 5 survey		patients' needs/concerns seriously, not acting as though the assault was the patient's fault, showing care/ compassion,	5. This research also has clinical and policy implications. Of note, SANE programs are not available in all locations across the US. Indeed, 1 report noted a shortage of SANE programs in every US state evaluated. Specifically, it may be particularly difficult for women in rural areas to access SANE care. The lack of availability of SANE programs in all areas may be in part attributable to difficulties with funding. SANE programs are typically funded through a combination of governmental funds, hospital donations, fundraising, and money from nongovernment agencies and other grants, as well as funding from the Violence Against Women Act	13 geographically & demographically diverse emergency care– and community-based SANE programs in the US, and who were willing to participate in

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		Not eligible: could not provide informed consent; pregnant; living with the assailant; had assault-	questions that assessed whether: SANE took the patient's needs/ concerns seriously; did not act as though the assault was the patient's fault; showed care/ compassion;		explaining the sexual assault examination, and providing follow-up information? 2. Did the patients'	and Victims of Crime Act. However, SANE programs often face budget cuts and operate at a loss, given that SANE programs (including equipment and training) can be expensive to maintain. Indeed, empirical studies have indicated that lack of funding is a "major problem" for more than half of the SANE programs. 6. When SANE care is not available, other resources (eg, nonclinical forensic evaluations or other interdisciplinary clinician teams) may provide services. Such teams may not have the	our follow-up study, reported that SANEs provide a high quality of care. 3. Adult female patients who had been sexually assaulted

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		related fracture or required hospital admission; did not speak English; did not have telephone/ mailing address;	explained the sexual assault examination; provided follow-up information. Responded to each survey question using a scale from 1 (strongly disagree) to 4		perceptions of SANE care differ by the patients' demographic characteristics, and health status before the assault?	advanced multidisciplinary training and breadth of experiences that SANEs have in providing health care, collecting forensic evidence, and fulfilling these needs in a trauma informed and compassionate manner. 7. The SANEs' training and experience in cultural competency may play a role in the high ratings for SANEs across various demographic groups. SANE training emphasizes the need to be aware of, and respect, cultural differences. Nationally representative surveys have found conflicting results regarding whether	consistently reported that the SANEs took their needs/concerns seriously, did not act as though the assault was their fault, showed care and compassion, explained the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		unwilling to provide blood samples; or incarcerated.	(strongly agree). For each patient, an overall care quality score was created by computing the mean of the responses. Measures			demographic characteristics play a role in who seeks SANE care. Resnick et al found that women who did not identify as white were more likely to receive postassault care, whereas the more recent findings by Amstadter indicated that white race and income less than $20 000 predicted being more likely to seek postassault care (not specific to SANE care). Thus, more research is needed to determine whether there are health disparities in access to SANE care, but our research indicates that when women do receive such care, they are typically satisfied, regardless of their demographic characteristics.	sexual assault examination, and provided follow-up information. 4. These perceptions were consistent among patients with varied

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			1. Anxiety symptoms: Patient-Reported Outcomes Measurement Information System Short Form. 2. Depression symptoms:				demographic characteristics and pre-assault health status. We encourage all health services and facilities that treat patients who have been sexually assaulted to include SANE care as part of

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Patient-Reported Outcomes Measurement Information System Short Form. 3. Posttraumatic stress symptoms (PTSS): 10				their routine response to these patients with trauma.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			items adapted from Posttraumatic Stress Disorder Checklist. Somatic symptoms: assessed using 21 items. Pain severity: Pain Severity				

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			Numeric Rating Scale.				
25. Buchbinder et al. 2021	13 SANE programs (7 emergency department/ hospital-based & 6 community based)	Total Sample Participants N=706 Responses n=2824	Non-experimental Survey Qualitative	Nil	An improved understanding of the issues facing women SA survivors can aide emergency	1. Responses demonstrate the profound negative consequences of SA on many aspects of survivors' lives. Survivors described a heavy burden and significant challenges as they navigated interactions with friends, family, romantic partners, medical emergency care practitioners, and investigators during the year after assault.	1. In summary, these responses document in often searing detail the challenges faced during the year after assault,

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Located across 10 US states & Washington D.C. Geographically distributed sites	Included/ Responded Participants N=590 Responses n=1434 Response rate N= 84%	Descriptive Exploratory Prospective, longitudinal multi-site observational study.		care practitioners in providing high quality care. The goal of this study was to share the experiences of women SA	2. Although many of the themes overlap with or relate to posttraumatic stress symptoms, a known sequela of sexual assault, other themes, such as difficulties with social interactions and major disruption of daily routines and activities, have not been well described. 3. Findings from this study have important implications for emergency care practitioners and future efforts to improve recovery after SA.	including mental distress, a profoundly altered sense of self, a justice system experienced as grossly unfair, financial difficulties due to assault-related disability,

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Data were collected between 2015 and 2020	n= 51% Participants were eligible if: they were cisgender women at least 18 years old; presented to a study site within	Performed a qualitative analysis of open-ended free text survey responses obtained 1 week, 6 weeks, 6 months, & 1 year after SA from a large		survivors with the emergency care practitioners that care for them. We sought to gain a better understanding of the	4. First, these data underscore that recovery from sexual assault can be extremely challenging, and that every effort should be made by emergency care practitioners to provide referrals for mental and general health care. 5. In addition, our findings demonstrate that survivors frequently face barriers to accessing care and services following assault, including financial barriers. Survivors need information regarding free or low-cost treatment options at the time of emergency care.	burden of previous life trauma weighing more heavily, struggles with romantic relationships and interactions with others, experiences of isolation and anxiety, and

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		72 hours of SA. Exclusion criteria included: inability speak or read English, inability to provide	cohort of women. We used open-ended questions because such questions allow individuals to share the experiences and issues most		lives of women SA survivors who are discharged to home after SANE evaluation and to characterize the issues important	6. The many descriptions by survivors of struggling with profound feelings of shame and self-doubt after SANE care emphasize the need for emergency care emergency care practitioners to convey a clear statement to every survivor that the assault was not their fault. 7. Descriptions of the burden of posttraumatic stress symptoms experienced by survivors, and the sense of isolation and self-doubt that these symptoms can bring, are consistent with	difficulties with accessing healthcare. 2. Survivor descriptions of the challenges they face after leaving the ED underscore the importance of simple messages to

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		informed consent; injuries requiring hospitalization; or living with the assailant.	important to them. The open-ended question: “What do you think is most important for researchers to understand about your experience		to women SA survivors during the year following assault.	recommendations that acute care practitioners inform survivors that such symptoms are common in the early aftermath of trauma, in order to reduce anxiety and promote recovery. 8. The development of emergency care-based interventions to promote recovery and reduce posttraumatic neuropsychiatric sequelae following SA is in its infancy. Despite this, we believe that emergency care practitioners should communicate 4 things to every SA survivor, and that these messages can be communicated even within the time constraints imposed by a hectic	survivors at the time of emergency care. 3. Although our results summarize themes and attempt to provide representative comments, a

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			since the assault?" Participants completed web-based self-report computer surveys administered at a study site or in their home.			ED shift. These 4 messages are summarized by the acronym SANE, and displayed in Figure 2. 9. Experiences with the criminal justice system are profoundly negative for many survivors. Contributing factors frequently cited by SA survivors are readily addressable by detectives and prosecutors (eg, interacting with survivors in ways that make them feel supported and believed, providing regular case updates). Future studies should evaluate the effects of specific training and procedural changes on SA survivor	more complete conception of survivor experiences can be gained by reading the complete responses shared by participants. For emergency care practitioners who care for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						experiences and outcomes within the criminal justice system. 10. Results suggest that recovery from SA is possible, but should not be equated with returning to how things were prior to the assault. A small number of participants (n = 32) acknowledged that they had recovered and moved on, or experienced positive changes after SA (n = 12) (eg. discontinuing risky behaviors, developing an improved sense of self-worth). These findings lend cautious support to the possibility of	women at the beginning of this journey, and for those who seek to gain a better understanding of the challenges facing survivors, improve services and societal

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						posttraumatic growth following assault for a minority of survivors, in addition to adverse outcomes. Future research should investigate specific predictors of posttraumatic growth, to inform individual and systematic efforts to help recovery. 11. Strengths of this study include the large sample size and multi-site prospective design. This study is the first, to our knowledge, to use qualitative methods to study a large number of SA survivors seen in US emergency care centers. Much of the qualitative research on SA in the	responses, or develop improved secondary preventive interventions, we believe that reading the complete responses would be time well spent.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						United States has been collected from college students, whereas this sample includes adult women of all ages. 12. Additional strengths include the high overall response rate and the fact that responders differed from non-responders only in terms of racial identity and trauma history. These qualities lend further support to the study's qualitative rigor. 13. This study also demonstrates the utility and feasibility of analyzing open-ended free-text survey responses in patient outcomes research.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						Such questions are infrequently analyzed but can easily be added to study protocols and allow survivors to share the issues most important to them.	
26. Greenbaum et al. **2018**	Patients from 16 sites throughout the U.S.: five pediatric emergency	N = 810 Child age range 11-13 years minimum;	Non-Experimental Quantitative Tool Development	Child sex trafficking screening tool.	Aim (1): Estimating the prevalence of child sex trafficking in	Aim 1 1. Consistent with prior research, we found a significant rate of CST, 90/810, among patients presenting to pediatric EDs (for sexual violence complaints), CACs, and teen clinics. 2. The proportion of eligible patients determined to be CST victims was relatively high: 11.1% of the total sample; 13.2% of those presenting to EDs secondary to sexual violence; 6.3% of patients at CACs; and 16.4% of youth presenting to teen clinics.	1. This study demonstrates a significant rate of CST among patients presenting to emergency departments

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	departments; six child advocacy centers; & five teen clinics. May 1, 2015 to	17 years maximum. Presenting with main complaint of acute sexual assault/abuse, or concern for CST.	Cross-sectional, Observational Patients completed a self-report questionnaire regarding high-risk behaviors, law enforcement involvement,		healthcare settings. Aim (2): Evaluation of a child sex trafficking screening tool across healthcare settings.	3. Both males and females were identified as CST victims. 4. Specificity was moderate; negative predictive value was high. 5. Our study is notable for its relatively large proportion of male participants (121/810, 15.3%) 6. Our findings confirm that males are indeed victims of sex trafficking. They accounted for 17% of identified victims in the EDs, 20% in CACs, and 0% in teen clinics. 7. The higher rates in EDs than CACs were somewhat expected given that inclusion criteria included a presentation of sexual assault. 8. However, the highest rate in teen clinics was unexpected since youth were being seen for a variety of issues in these settings (not all sexually related), and the only other study to date exploring CST in this setting found a rate of 7.3% confirmed CST victimization [38]. It may be that the higher prevalence rate in our	(for sexual violence complaints), child advocacy centers, and teen clinics. A six-item screen showed relatively good sensitivity and moderate specificity. Negative predictive

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	November 15, 2016.		and sexual history via paper form or tablet; one site administered questions verbally. Before patients began the questionnaire, they were advised by HCPs of the			study was due in part to the “high-risk” youth served by teen clinics. Aim 2 1. Performance measures of our original screening tool showed relatively good sensitivity, ranging from 83.3% to 84.9% in three pediatric settings. This implies that 15%17% of victims would not be identified with its use. However, identification of »84% of victims represents an enormous improvement over the existing situation. 2. When the original tool was modified to omit part of one question (history of broken bones/cuts requiring stitches), sensitivity was stable (83.3%84.9%) and specificity improved (49.4%61.4% for original tool; 58.7%70.0% for modified tool)	value was high. 2. Intervention for a “positive” screen may identify victims and help prevent high-risk youth from becoming

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			limits of confidentiality and were informed that answering questions was voluntary. Participants were interviewed by HCPs outside the presence of the person(s) accompanying			3. The moderate specificity suggests that 30%41% of nonvictimized patients completing the screen would score in the positive range. 4. The negative predictive value is very high (95.2%98.5%), indicating that the vast majority of patients screening negative are not being victimized. 5. The positive predictive value is low (15.9%28.7% for modified version of tool), with the highest positive predictive value in the teen clinics. Thus, results suggest that HCPs would screen six to seven patients for each positive victim identified in a CAC, four patients with presenting complaints of sexual violence in an ED, and three to four patients presenting with any chief complaint in a teen clinic. In the case of CST, however, the ramifications of a false positive screen are minimal.	victimized. This is one of the first CST screening tools specifically developed and evaluated in the healthcare setting. 3. Collectively, our findings

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			the youth to the visit. Patients were considered CST victims if the examiner opined they were being victimized.				suggest that HCPs need to be vigilant about considering the possibility of CST when caring for adolescent patients. Concern is elevated when patients present with

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							multiple risk factors, including running away from home, prior involvement with law enforcement, history of STIs, >5 sex partners, and/or

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							drug/alcohol use.
27. Hoffmann-Walbeck H et al. **2016**	Charite Emergency Departments Berlin. Between 01.01.2011 and 31.12.2012	N= 270 Response Rate 97% (262/270). Nursing staff of the emergency departments and the physicians	Non-Experimental Mixed Methods Quantitative and Qualitative	Introduction of "stuprum kit".	Evaluate utility and acceptance of "Stuprum kit" two and a half years after its introduction.	1. The present investigation illustrates a practically complete documentation of 270 cases in which the women, after making a police report about sexual violence, were treated and examined with the help of the "Charité stuprum kit" at one of the three departments of emergency medicine of the Charité. 2. First of all, two possible surrogate parameters for patient-friendly treatment should be mentioned. The long waiting times for the	1. The more or less complete documentation of the medical findings form included in the "stuprum kit" and the positive evaluation of "stuprum kit" by the

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		of the gynaecological departments who were responsible for the examinations and care of patients using a stuprum report. All cases of female patients aged 16	Survey Retrospective case analysis; Data of included patients were included. In the Charité University			patients of about 1 hour on average can be explained by the generally high patient volume in the emergency departments and the usual priority-setting; patients were triaged on the basis of the Manchester triage system (MTS), and were then treated according to urgency. Thus, life-threatening diseases and the classical somatic emergencies are treated first. 3. The long overall management and treatment times arose, among others, due to additional consultations or complicated examination conditions for patients with diminished vigilance,	personnel illustrate the acceptance and practical utility of this standardised procedure 2. The increased expenditure of time for the care of victims

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		years or more; Who were cared for using the "stuprum kit" after a police report of a sexual crime in one of the departments of emergency medicine of the Charité were evaluated.	School of Medicine in 2010, interdisciplinary team developed an examination kit including; a medical documentation form and action guidelines for the care of			for example, after drug consumption or those in poor mental states that required additional expenditure of time. 4. The relatively low number of post-exposure prophylactic (PEP) measures is due to the fact that here only the treatments primarily performed by the gynaecologists are presented. The results of later consultations in the departments of inner medicine or infectiology are often not included in the present statistics.	of sexual abuse should be taken into consideration in the duty rosters of the treating personnel 3. The prerequisite of a police report for the

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			victims of sexual violence. After a pilot phase, it was introduced in the emergency departments of the Charité. Self-developed questionnaires were distributed among the			5. Examinations by a physician of the same sex as a second surrogate parameter could only be realised in a little more than half of the cases. 6. It is noteworthy that a large proportion of the perpetrators were reported by the victim to be "strangers". This is due, among other things, to the way the question is posed in the MFF. Here the suspected perpetrators are also recorded as "strangers" when the victims had first met them in the hours before the assault. In addition, the	structured management by means of the "stuprum kit" needs to be questioned. In its place, the now established procedure could be coupled to a comprehensive legal

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			nursing staff of the emergency departments and the physicians of the gynaecological departments who were responsible for the examinations and care of			prerequisite of a police report prior to management with a “Charité stuprum kit” may serve as a possible selection criterion since a larger inhibitory threshold may be assumed when reporting against a previously known perpetrator. 7. The treating personnel evaluated the “stuprum kit” including the management and interviewing guidelines predominantly as good to very good. 8. Above all the examination conditions were criticised, thus almost 40% of the participants	clarification for the affected women with a low threshold and the offer of a so called confidential securing of evidence. 4. In future, attention

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			patients using a stuprum report. These questionnaires contained items on field of activity, gender, & professional experience of the recipients.			considered the situation to be not or rather not appropriate. Considering the importance of an adequate and empathic primary care for victims of sexual violence, a calm and secure environment for the examination of victims should be aimed for. 9. However, for organisational reasons this is difficult to achieve in a hospital emergency department. An improvement in patient-oriented care could be realised by personnel changes with regard to the	should also be directed to psychosocial care of the victims.

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			Personal opinions of various aspects of the care situation (measured with five- or four-point ordinal scales) were addressed in eight questions.			guaranteed provision of medical staff of the same gender as the victim. 10. Furthermore, less time pressure would certainly have a positive effect on the empathy of the treating personnel and thus on the trusting relationship between the physician and the patient as well as that between nursing staff and patient. This argues in favour of – even if it is not easy to achieve organisationally – a duty rostering that takes the victims of sexual violence as a patient group into consideration from the outset. Against the background of the ever increasing	

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			In two of the questions concrete criticisms could be expressed as free texts. These answers were sorted into thematic groups for the evaluation.			overcrowding of emergency departments; with, in part, critical care situations for life-threatened patients such special provisions are, however, less realistic. 11. Even if most of the personnel judge their individual personal burdens beyond working hours that arise from the care of victims of sexual violence to be of “rather no” importance or as “don’t know”, it must be assumed in general that the care of victims of violence is indeed a burden for the care-giving personnel. Studies confirm that nursing personnel in emergency departments	

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						suffer more often from stress and burnout than other nursing staff. The emotional challenges and worries about the victims after they have left the outpatient department were burdens for most of the participants. 12. Also. the role conflict of simultaneously being an empathic person of trust as well as an objective and forensically correct working reporter of findings is not to be underestimated. Thus, it is not surprising that over 2⁄3 of the participants in this survey expressed the desire	

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						for supportive measures such as supervision and further training in the care of rape victims.	
28. Chew et al. **2015**	One Stop Crisis Centre (OSCC); The OSCC in HUSM is located within emergency department. Hospital University Sains	Sample N= 159 Respondents N =110 (69.2%)	Non-Experimental Quantitative Questionnaire/ Survey	Nil	Assess the knowledge, attitudes, and practice on the care of OSCC patients among the various	Generally, this study shows that most of our emergency healthcare providers have adequate knowledge on rape management in OSCC, possess positive attitudes towards rape victims as well as adhere to acceptable practices in management of rape victims in OSCC. 2. But this study also shows some differences among the various groups of healthcare	1. In conclusion, there are differences in terms of the level of knowledge, attitude and practice among the

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	Malaysia HUSM; 723-bedded hospital is one of the two referral centres for OSCC cases in the northern state of Kelantan in Malaysia. January to October 2013	All healthcare providers in the emergency department who are directly involved in the caring of OSCC patients are invited	Observational; Cross Section; Self-Reporting Questionnaire was first drafted based on review of journal articles,		groups of healthcare providers working in our emergency department.	providers. In particular, despite the finding that the SNs group demonstrated better knowledge in OSCC care and are more stringent in their adherence to acceptable OSCC practices as compared to other groups, this does not seem to translate into a relatively better attitude as compared to the EDs. 3. This could be partly due to the organization system of OSCC particularly, and the Malaysian healthcare system as a whole; as well as the rigid roles assigned to these various health care providers in the emergency department. In the	various groups the healthcare providers in the management of OSCC care in our emergency department. 2. All healthcare providers

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		to participate except for emergency medicine lecturers or specialists. For the purpose of this study, these	standard emergency medicine textbooks, policy, statements as well as Malaysian legal documents. To ensure adequate			context of OSCC care, the MAs are expected to triage and identify the OSCC cases only; SNs are the ones responsible in preparing the OSCC room and assisting the doctors, the EDs are usually expected to attend to the victim (to interview and examine the victim) and the HAs are called for only transporting the victim. As such, there is a tendency that one group might not know the roles and functions of the other groups and thus, does not knowing the entire workflow in managing OSCC.	should rid themselves of unacceptable and judgemental attitudes that imply putting the blame of the rape and sexual assault on the victim.

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		participants were divided into four groups – the emergency medicine doctors (ED), the staff nurses (SN), the medical	comprehension by the staff nurses, medical assistants and hospital attendants who may not be fluent in English, questionnaire was drafted in the Malay language.			4. More training sessions and roundtable discussions should be held among these emergency healthcare providers to enhance the understanding of the roles played out by their various team members in the work process of a rape victim. Furthermore, the paternalistic or 'top-down' work culture in Malaysia also denotes that SNs and MAs usually adopt a 'follow-the-leader' attitude in their daily clinical practice. Therefore, in order to comply with their work requirement, the SNs are usually required to get acquainted with the work process of the OSCC care and to be vigilant in following the standard operating procedures in their practices, even to	

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		assistants (MA) and the hospital attendants (HA)	Translation into English language was done. Pilot study to test for content validity.			the extent of being mechanical and mundane in their work ethics. On the other hand, a doctor is expected to show an empathic and compassionate attitude towards their patients. This might explain why the SN group scored higher in the domain of knowledge and practice compared to ED group, but vice versa in the domain of attitude. 5. A more pressing issue, however, is the finding from this study that majority of the participants across all groups agreed with some of these unfavourable statements: 1) “A woman should be solely responsible for preventing rape from	

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			In the final version of the questionnaire: the Knowledge section consists of 11 items; The Attitude section consists of 14 items; The			happening to her", 2) "A woman who walks alone at night, especially in unsafe places, is inviting rape attack", and 3) "A woman who comes to the OSCC could possibly be lying in order to trap the man accused of raping her". Holding on to such unacceptable attitudes among healthcare staffs is akin to shifting the blame of the trauma unto the rape victims themselves. 6. Victim-blaming attitude is a common form of rape myths. The term 'rape myths', refers to a set of stereotypical and fallacious beliefs about rape, rape victims and the rapist. Some of the common	

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			Practice section consists of 18 questions			rape myths include the belief that women put themselves in vulnerable situations by dressing and acting inappropriately, by being in the wrong place at the wrong time and by being under alcohol or drug influence. 7. A rape myth inappropriately held by the community can result in secondary victimization and is a main cause why a huge number of rape cases remain unreported. Secondary victimisation is defined as the victim-blaming attitudes, behaviours, and practices by community and even healthcare providers, which result in	

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						additional trauma for the already traumatized rape victims. Other terms previously used include the more graphical 'the second rape' and 'the second assault'.	
29. Rothbaum et al. **2012**	Public hospital ED within the largest Level I Trauma Center in Georgia.	N = 137 Participants aged 18 to 65; who presented to the ED within 72 hours of experiencing a	Experimental Random Controlled Trial (RCT)	Patients received three, hour-long sessions of a modified PE (Prolonged	This translational randomized controlled study examined	1. Trauma survivors at an ED in a Level I Trauma Center were randomly assigned to a modified prolonged exposure intervention or assessment only within 11 to 12 hours, on average, of experiencing a severe traumatic event.	1. These findings suggest that the modified prolonged exposure intervention initiated

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		trauma; and met criterion A of the DSM-IV. Patients: spoke English; had a memory of the event; were alert and oriented; were included in the study	Quantitative Longitudinal; Translational **Initial Assessment.** Assessors collected demographic information, baseline depression and peritraumatic distress	Exposure) intervention, distributed 1 week apart.	whether the use of modified prolonged exposure therapy in an ED setting in patients experiencing a DSM-IV criterion A trauma	2. Those receiving the modified PE intervention reported significantly less PTSD and depression severity in the months following the trauma than those assigned to assessment only. These findings suggest that this early intervention is effective at reducing symptoms of posttraumatic stress at 1 and 3 months posttrauma and depression at 1 month posttrauma, is safe, and is feasible. 3. Higher effect sizes for the intervention were found among rape victims, which is noteworthy given that rape has been identified as the trauma most likely to lead to the development of PTSD.	within hours of the trauma in the emergency department is successful at reducing PTSD and depression symptoms 1 and 3 months after trauma exposure and

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			symptoms, and trauma history. Intervention **Follow-up Assessments.** Blinded assessors administered the Update Trauma Interview;		would significantly reduce the severity of posttraumatic stress reactions at 4 and 12 weeks posttrauma.	4. The intervention targeted the trauma that brought patients into the ED and did not appear to affect PTSD symptoms associated with prior traumatic events. 5. These results have important implications for research on the immediate response to trauma. First, this is the first behavioral intervention delivered in the hours following trauma exposure that has been shown to be effective at reducing posttraumatic stress reactions.	is safe and feasible. 2. This is the first behavioral intervention delivered immediately posttrauma that has been shown to be effective at

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			PTSD Symptom Scale-Interview Version; Posttraumatic Stress Diagnostic Scale; and the Additional Treatment Inventory; at 4 and 12 weeks following		Due to estimated depression comorbidity rates of 44.5% in PTSD patients 1 month posttrauma (35), depression rates were	6. Because some studies indicated the possibility that early interventions such as debriefing could interfere with natural recovery following trauma exposure, the field has shied away from early intervention studies. However, debriefing is very different from the therapeutic exposure used herein, and it is our hope that these promising results will now reopen this important therapeutic question.	reducing PTSD.

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			enrollment in the ED. Patients were given the Beck Depression Inventory-II at the 4-week follow-up to assess depressive symptoms.		also assessed. We predicted that patients receiving the intervention would have reduced severity of posttraum	7. Our modified PE is quite distinct from debriefing in that it is based on individual versus group delivery, includes other components (breathing relaxation, in vivo exposure, attention to cognitions, self-care), and importantly, involves multiple repetition of the trauma narrative to allow for fear extinction within and between sessions for homework. 8. Second, the intervention and the timing of the intervention are based both on translational and clinical research. Exposure therapy has received more empirical support than any other	

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					atic stress at 4 & 12 weeks posttrauma and reduced severity of depression at 4 weeks posttrauma compared with patients	intervention For ASD and PTSD but has never been attempted within hours of the traumatic event. Basic and preclinical research have indicated that the timing of extinction training following fear conditioning is critical. 9. Myers et al. identified signs of fear in animals given extinction training after 72 hours but not in those given extinction training after 10 minutes. This very early extinction training may be protective against the physiological and psychological effects of traumatic fear memories. Similar to extinction training, exposure therapy is	

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					who were repeatedly assessed without intervention.	theorized to reduce PTSD symptoms by promoting fear activation and habituation of conditioned fear reactions through engagement with traumatic memories, while allowing integration of corrective information regarding the trauma. 10. Although several mechanisms may be involved, we suggest that the modified PE intervention presented here may be able to prevent the development of PTSD through similar mechanisms by encouraging engagement with the trauma memory and providing an	

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						opportunity for fear habituation and processing of unhelpful cognitions, thus modifying the memory before it is consolidated.	
30. Hoehn et al.	Large pediatric tertiary care center	657 visits	Quasi Experimental	Interventions included the	We aimed to increase the proportion	1. Medical management of sexual abuse is challenging for PED providers for many reasons,	1. Implementation of a quality improvement

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2018	and its satellite community hospital – Level I trauma center Cincinnati Children's	We narrowed our inclusion criteria to include only patients with both a chief complaint of "alleged sexual assault"	Quantitative Pre-Post interventional study Longitudinal Retrospective record review.	construction of a best practice algorithm derived from published guidelines, targeted clinician education, and integration of an	of patient encounters at a PED for reported sexual abuse that receive algorithm-adherent care from 57% to 90%	including a lack of knowledge about the recommended testing and treatment that differs on the basis of the age of the patient, type of contact, and time since contact. 2. There is significant variation in care documented in the literature. Variation in care has the potential to result in missed opportunities to provide prophylactic antibiotics against STIs, HIV PEP, emergency contraception, and baseline testing for certain bloodborne pathogens. This	initiative has resulted in increased adherence to an evidence-based care algorithm for the evaluation of patients with

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	Hospital Medical Center, Cincinnati. Division of Emergency Medicine and Mayerson Center for	and a note indicating that a child protective services report was made or an examination by a P-SANE was completed.	Multiple plan-do-study-act cycles were conducted to test interventions that were aimed at key drivers.	electronic order set. Education Education of PEM providers (fellows, faculty, and clinical staff) occurred	within 12 months.	lack of complete medical management can have significant long-term consequences for the patient. 3. Using quality improvement methodologies, we increased the proportion of algorithm-adherent care from 57% to 87% and sustained that improvement for 13 months. The interventions that led to improvement included the creation of an evidence-based care algorithm, embedment of that algorithm into the EMR, targeted education, and creation of an order set within the EMR that aligned with the algorithm.	reported sexual abuse in our PED. 2. Multiple key drivers have been used to propel this improvement and sustained performance, including a

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	Safe and Healthy Children. Between July 2015 and January 2018.		A standardized chart review process was completed. Encounters were considered adherent to the algorithm if recommended testing or treatment was offered but refused by the	at our monthly division staff meeting in June 2016. Algorithm The team developed an evidence based care		4. We postulate that this improvement resulted from our structured interventions that addressed specific clinician-reported difficulties, culminating with the order set that provided embedded guidance and made it easier for clinicians to perform in accordance with best practice recommendations. 5. Although we have not reached our goal of 90%, this substantial improvement is still important for patient care in our PED. The degree of improvement is impacted by several factors including the acceptability of the algorithm, ease	readily available best practice algorithm, multilevel provider education, integration of the algorithm into provider workflow, and an EMR order set constructed to support

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			patient or patient's guardian, and documentation of discussion and refusal was evident on chart review.	algorithm for the medical management of patients with reported sexual abuse. The algorithm was based on CDC & AAP		of use of the algorithm, and the context in which the algorithm is applied. 6. The team used education to raise awareness of the algorithm and order set. The team hypothesizes that additional techniques such as individualized feedback regarding compliance with standards and memory aids such as displaying the preferred order set in association with certain chief complaints will be required to reach 90% adherence.	algorithm recommendations.

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				evidence based recommendations & local expert consensus. Order Set A point-of-care order set was		7. Nearly 80% of the failures of adherence were related to testing for infection, specifically blood testing. Notably, we were able to demonstrate excellent performance of the most emergent aspects of care, such as HIV PEP, emergency contraception, and prophylactic antibiotic administration. 8. Although our interventions significantly improved the performance of appropriate testing, these data may help inform further targeted efforts to increase adherence and enhance	

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				developed, with orders divided into categories on the basis of pubertal status and the amount of time since AP		outcomes. Other studies have revealed similar improvements in care for victims of sexual abuse after the implementation of a clinical guideline. Goyal et al demonstrated that 85% to 89% female adolescents received recommended testing and STI prophylaxis after the implementation of a sexual abuse response team, which included specially trained nurse examiners and a protocol for the evaluation and treatment of sexual abuse victims. Strengths	

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				contact. The order set was integrated into the EMR in January 2017. A link to the algorithm was embedded in the order set		1. Strengths with this quality improvement initiative, we used a standardized algorithm for the evaluation of reported sexual abuse that was based on AAP and CDC recommendations and expert consensus among physicians with PEM and child abuse expertise. 2. The process revealed sustained improvement for 13 months since special cause was demonstrated, and the center line shifted to 87%. Our quality improvement methods were used to successfully implement a standard algorithm to	

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				to facilitate rapid algorithm review at the time of order placement.		improve evidence-based performance in this low-frequency, high-stress event. 3. We used key drivers to inform our efforts to improve care for each patient. We integrated interventions into the electronic workflow of the usual care environment and built on the existing infrastructure and clinical workflow of our emergency department. 4. Ultimately, we postulate that our initial interventions provided an educational foundation	

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						that allowed the order set with embedded recommendations to shift the centerline and sustain improvement	
31. Kellogg et al. **2018**	Children's hospital emergency department and an affiliated outpatient sexual abuse	Consecutive sample of 1805 children and adolescents.	Non-experimental Quantitative Descriptive	Sensitive nucleic acid amplification tests (NAATs).	1. The aim of this study was to describe the use of a nucleic acid amplification test in	1. Study demonstrates that an important minority of children and adolescents evaluated for sexual abuse or assault have positive genital and extragenital gonorrhea and chlamydia tests, as detected with an NAAT method. The prevalence of CT and NG among children younger than 12 years (2.39%) and adolescents (16.0%) was similar to those found in other recent studies.	1. The results of our study strongly support routinely testing genital and extragenital sites for NG

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	assessment center. For a 30-month period from March 2011 to September 2013	Children aged 0 to 17 years. Specimens were collected from cooperative patients based on the type of sexual	Retrospective medical record review. The charts of children consecutively evaluated for sexual victimization, in emergency	Specific NAAT, transcription-mediated amplification (TMA). A series of validation tests was conducted by the	detecting genital and extragenital Neisseria gonorrhoeae (NG) and Chlamydia trachomatis (CT) in children and adolescent	2. Among our study group, positive tests were found primarily in female adolescents who presented within 96 hours of their sexual assault and had previous sexual contact and/or acute or healed genital injuries. 3. A positive patient drug screen was also associated with a positive NAAT. 4. Although a vaginal discharge was associated with a positive CT test in younger patients, numbers were small, and most children and	and CT among adolescents presenting for examination at any time after sexual abuse or assault, using an NAAT such as TMA. 2. Currently, none of the

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		contact described, regardless of when the last contact occurred.	department and outpatient settings were reviewed. Data extracted included age, sex, type of sexual contact, anogenital findings, previous sexual contact, toxicology results, and	laboratory before this study. Initial tests were conducted with known positive and negative vaginal, rectal, and pharyngeal	s assessed for sexual abuse/assault. 2. to examine the concordance of patient history and	adolescents with positive NG or CT tests did not have a genital discharge. 5. Current publications recommend testing adolescents presenting for sexual assault examinations for NG and CT based on the type of sexual contact and regardless of symptoms.1,3 Results from this study support this approach and suggest that testing oral and anal sites for NG and CT should be considered even for patients who do not have a history of sexual contact involving those sites.	commercially available NAATs are approved by the Food and Drug Administration for use on extragenital sites. Clinical Laboratory Improvement Amendment regulations

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			sites tested for NG and CT. External genital, vaginal, oral, and/or anal swabs and/or urine were collected from children and adolescents and submitted	standards from both male and female patients who were tested by another laboratory; 100% correlation was found using TMA in	examination factors relating to sexual abuse or contact.	6. The Centers for Disease Control and Prevention protocol recommends testing based on patient history or the presence of anogenital injury and recommends against testing for oropharyngeal chlamydia. If these recommendations had been observed, 86 (43%) of the 199 positive tests found in this study would have been missed. 7. Most positive STI tests were in patients who presented within 96 hours of sexual assault, and within this time frame, most positive results were in those tested within 24 hours. In a study of	require that clinical laboratories perform a 1-time verification study, before reporting GC/CT test results from oral or rectal specimens. Validation studies were

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			for NG and CT testing by TMA. Urine or genital swabs were collected in prepubertal girls, vaginal swabs were collected in pubertal girls,	detecting NG and CT.		children up to 13 years, 19 (59%) of 32 positive body swabs for DNA were recovered in children presenting less than 25 hours after a sexual assault. 8. It is not possible to determine whether positive results in this study represent infection from previous sexual contact or detection of infected assailant secretions; 59% of those with positive results seen within 72 hours did provide a history of previous sexual contact and/or abuse.	carried out before the initiation of all testing. 3. Adolescents with a positive CT or NG test detected within hours of their sexual assault should receive

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			and urine was collected in male patients.			9. In either case, a positive test should prompt follow-up evaluation for other STIs, including human immunodeficiency virus and syphilis with repeat testing 4 weeks and 3 months after the assault. 10. Overall, most patients with positive tests from extragenital sites did not have a history of genital contact or penetration at that site. These patients either did not provide a history of extragenital contact or denied that such contact occurred.	follow-up care to ensure adequate treatment and monitoring for other STIs. 4. Positive NG and CT tests were less common in children younger than

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						Possible explanations for these discrepant results include incomplete history from the patient, contiguous spread of infection or assailant secretions from the vagina to the anus, cross-contamination at the examination or laboratory site(s), and cross-reactivity with commensal Neisseria species. Most patients with a positive anal NG or CT test but no history of anal-penile contact also had a positive vaginal test, supporting the possibilities of contiguous spread and examination site contamination. However, most patients with a positive oral test but no history of oral contact also had a positive vaginal test, which would not be explained by contiguous	12 years, and genital discharge, anogenital injury, and patient history of the type of sexual contact were not generally associated with a positive test at a given site.

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						spread, although the autoinoculation of chlamydia from genital infections to the eye has been reported. 11. More specific questions about sexual contact involving extragenital sites may yield more complete information and more complete testing for STIs. In our study, 16 patients had positive chlamydia tests, and 11 had positive gonorrhea tests from the oral site; all were 12 years and older. Eleven of the 16 patients with a positive oral CT test and 7 of the 11 patients with a positive oral NG test were evaluated within 72	5. This study suggests that criteria for testing children and adolescents for extragenital NG and CT need additional review and consideration.

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						hours of sexual assault, indicating that some of these results may represent detection of infected assailant secretions; however, the recovery of DNA is reportedly rare from oral swabs. 12. Efforts were made to reduce cross-contamination at laboratory and clinical sites. In addition, we found no consecutive patients with positive results, as might be expected if examination sites were contaminated. Cross-reactivity with commensal species has been reported for some NAATs but not for TMA and CT.	

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						13. Whereas the current guidelines for sexually victimized children support testing the oropharynx for NG, testing for CT has not been recommended for oropharyngeal sites. Results from this study suggest that oropharyngeal testing for CT in adolescents evaluated for sexual abuse or assault should be considered more frequently. 14. Of the 670 children younger than 12 years who were tested for NG and CT, 16 (2.4%) were	

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						positive at the genital, anal, or both sites. None had anogenital injury or a positive oral test. Similar to the older patients, many of the younger patients with a positive anal test did not have a history of sexual contact involving the anus, and most (7, 63.6%) also tested positive at the genital site. The contiguous spread of infection and the incomplete disclosure of sexually abusive contact may explain these discrepant results. 15. Some protocols for adolescent and adult survivors of sexual assault advise prophylactic treatment without testing for STIs, particularly	

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						among those with previous sexual experiences. However, if the victim has an STI before the sexual assault and resumes sexual contact with an infected partner, he/she will likely be reinfected. Identifying an STI permits for the treatment of the victim, as well as any partners.	

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32. Chalmers et al. 2022	Emergency Department staff. Nationwide survey	N= 321 Out of 137 centers with advocacy services; 135 agreed to	Non-experimental Survey Quantitative	Nil	The aim of this study was to describe nationwide trends in provider attitudes & beliefs by surveying SA patient	1. A small proportion of advocates (7.1%) reported that they observe providers conveying disbelief of the patient's assault story often or always. Even fewer advocates (5.0%) reported that health professionals often or always express blame towards patients for the circumstances around their sexual assault. The majority (73.1%) of advocates reported that they often or always observe ED staff showing empathy for survivors.	1. Although ED staff are responsible for providing critical medical care and forensic examinations to diverse SA survivors, ED staff are not

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	Conducted between June and August 2021.	distribute the survey to their SA patient advocates. Three hundred twenty-one advocates from 119 crisis	Descriptive Exploratory Advocates participated in online survey to determine the frequency of observing six potentially retraumatizing		advocates about their observations of ED staff caring for diverse survivors. The study also aimed to identify potential	2. Large proportions of advocates noted that survivor mental health status and survivor intoxication or drug use moderately or greatly impacted whether the ED staff conveyed disbelief (82.4% and 78.6%, respectively). 3. Race was also observed as a factor impacting provider attitudes. Almost half (48.4%) of respondents noted the impact of race on conveyed disbelief.	immune to widely held stereotypes and misconceptions about sexual assault. 2. Our study adds a nationwide context to previous

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		centers responded to the survey. Participation rate = 88.7% And completio	provider attitudes and behaviors. Survey used adaptive questioning to explore whether domains of survivor identity, including race,		disparities in SA survivor care according to survivor identity.	3. Survivor gender and age were frequently observed by advocates as having an impact on conveyed empathy from providers. Respondents who noticed a pattern in provider empathy according to gender, noted that cis-female survivors were more likely than cis-male, trans-female, trans-male, or genderqueer/nonbinary survivors to receive empathy. 4. Respondents who noticed a pattern in provider empathy according to age, noted that survivors	research documenting potentially retraumatizing behavior towards SA survivors from ED staff. 3 Our survey demonstrates that these potentially

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		n rate = 87.9%.	gender, mental health, substance use, socioeconomic status, and age, impacted each of the six provider attitudes or behaviors. Survey asked SA patient			who are minors (<18 years), or elderly (>65 years), are more likely to receive empathy than survivors who did not fall into these age groups. 5. With advocates reporting experiences from 44 states and a wide variety of urban, rural, and suburban hospitals, our study provides a nationwide perspective on interactions between ED staff and SA patients. By adding context to existing qualitative literature documenting potentially retraumatizing beliefs and attitudes of ED staff, our data emphasizes that SA survivors	harmful beliefs and attitudes towards SA survivors occur in EDs nationwide. 4. Furthermore, our study documents striking

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			advocates about their observations of three provider attitudes (disbelief, blame, and empathy) and three provider behaviors (adequate explanations, consent, and			who present to hospitals nationwide may be exposed to retraumatizing interactions. 6. Furthermore, our study documents striking disparities in ED staff behavior towards SA survivors according to survivor identity. Given that survivors of different identities receive different levels of exposure to potentially retraumatizing behaviors and attitudes from ED staff, there is a concern that this contributes to disparities in longitudinal healing from SA. Interactions in the ED might prime survivors with different expectations and confidence when	disparities in ED staff behavior towards SA survivors according to survivor identity. 5. Given that post-assault ED interactions

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			pressure to report to the police). Survey included between 57 and 100 items (dependent on adaptive questioning).			deciding whether to seek further care and disclose their survivor status. 7. This study could provide a novel explanatory factor for the lower rates of help-seeking and disclosure in patient populations who are more likely to have negative interactions with ED staff. Substantial overlap exists between patient populations identified by our study as bearing the burden of negative ED encounters and those with low rates of post-assault help-seeking. This suggests that these retraumatizing ED	are critical turning points in survivors' future medical care, disparities in ED care may be linked to larger disparities in healing from trauma.

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						interactions may contribute to disparities in longitudinal help-seeking. 8. Specifically, survivors who were intoxicated with drugs or alcohol at the time of their assault seek services at substantially lower rates than other survivors. Rates of male survivors seeking services are as low as 18% and among men who do not seek care, stigma from providers is cited as a primary concern. Women of color are less likely to seek formal help than white women. We hypothesize that similar linkages between negative ED encounters and low rates of post-	6. The high rates of ED staff empathy for SA patients documented in this study suggests that negative survivor-ED staff interactions are more linked to low provider self-

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						assault help-seeking exist in patient populations with other intersectionally marginalized identities. According to our survey results, this includes gender and sexual minorities, patients with disabilities, patients with psychiatric disorders, and patients from marginalized socioeconomic backgrounds.	efficacy than unmodifiable beliefs and attitudes. A lack of specific education leaves ED providers vulnerable to adherence to societal misconceptions around

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							sexual assault which may specifically diminish the quality of care offered to survivors with marginalized identities. 7. However, the implementatio

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							n of education interventions shows great promise in increasing providers' ability to competently care for SA patients and avoid retraumatization. Development

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							of further educational interventions should focus on combatting societal misconceptions around sexual assault and educating providers in caring for diverse SA patients.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							Centering educational interventions on the care of particularly marginalized SA patient populations is necessary to combat the inequities documented in this study.

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33. Hornor et al. **2022**	Pediatric emergency department. January 1, 2016 - December 31, 2017.	N= 306 Medical and legal records of children 0–18 years old who had forensic evidence collection completed	Non-Experimental Quantitative Descriptive Retrospective record review.	Implementing more inclusive indications for collection of evidence in a pediatric emergency department (PED).	To describe forensic evidence findings in acute child sexual abuse cases, after implementing more inclusive indications	1. Demographic risk factors for sexual abuse victimization as well as perpetration have been identified in the literature and were supported by this study. Females are more likely to experience sexual abuse than males, and adolescents are more likely to report sexual abuse than any other age group. 2. Most children in the study were female, and the most common age group was 13–15 years. Most children aged 12 years and younger in the study population were sexually abused by a relative,	1. This study provides important implications for pediatric forensic nursing practice. The medical forensic history and/or forensic interview

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		in the PED. Children between the ages of 0 and 15 years who present to the PED with a concern of sexual	A retrospective review of medical and legal records of children 0–18 years old who had forensic evidence collection completed in the PED.		for collection of evidence in a pediatric emergency department (PED), and to identify factors associated	yet older children were most at risk from nonrelatives. As reflected in the current study, younger children are at an increased risk for victimization by a relative, whereas adolescents are more likely to be abused by a nonrelative. 3. The yield of identifiable foreign DNA in this study, 35.9%, was significantly higher than those in previous studies, such as 16.2% in Thackeray et al. (2011). This is most likely a reflection of improved DNA amplification testing available to forensic laboratories.	gathered from the child victim provides crucial information to aid in the development of the medical forensic plan of care.

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		abuse within 72 hours of the latest incident of sexual abuse; Adolescents aged 16 years and above who present to the PED with a	Medical examinations were completed in the PED by pediatric sexual assault nurse examiners. Forensic evidence was collected		with yield of DNA.	4. Several factors were associated with increased forensic yield of identifiable foreign DNA: increased age of child victim, 48 hours or less between the latest incident of sexual abuse and then collection of forensic evidence, child disclosure of high-severity sexual abuse acts (anal–genital or genital–genital contact) in the PED forensic interview, and sexual abuse by a nonrelative perpetrator.	2.However, this study shows that child failure to disclose when interviewed by professionals does not negate the possibility of sexual abuse.

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		concern of sexual abuse within 96 hours of the latest incidence of sexual abuse;	according to protocol as described in the Ohio Child and Adolescent Sexual Abuse Protocol. Data was abstracted for patient and perpetrator			5. Previous studies support the association between increased age of victim and high-severity sexual abuse acts disclosure and increased likelihood of positive forensic evidence yield including identifiable DNA. 6. Unlike previous studies, this study revealed an expanded window of time since abuse associated with increased positive forensic evidence yield. Forensic evidence kits collected in the interval of 25–48 hours from sexual abuse had similar rates of foreign DNA yield to those collected in the interval of	3.Pediatric forensic Nurses must include other information, such as child disclosure to caregivers/other individuals before arrival for care or other care giver abuse concerns,

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			demographics, history of sexual abuse/assault disclosed during the forensic interview, chief complaint of sexual abuse upon presentation to the PED,			0–24 hours: 39.3% versus 41.1%. Positive forensic evidence in the interval of 49–72 hours decreased to 16.3%. It is interesting to note that positive forensic evidence increased to 42.6% in the interval of 73–96 hours. It is likely that the increased yield of identifiable foreign DNA in the interval of 73–96 hours is related to child victim age and high-severity sexual abuse acts. All positive body swabs in the interval of 72–96 hours were collected from adolescents aged 14 years or older, and all gave a history of genital-to-genital contact.	when making the decision to collect forensic evidence. 4. Pediatric forensic nurses must also recognize the importance of collecting forensic

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			history of sexual abuse to caregiver before PED, anogenital examination findings, interval between abuse and presentation to the PED, and forensic			7. Sexual abuse by a nonrelative perpetrator has not been found to be associated with increased yield of identifiable foreign DNA. It is likely that this association may be related to child victim age as most children 12 years old and younger in this study were sexually abused by a relative and those over 12 years old were sexually abused by a nonrelative. Thus, the significance of the association between nonrelative perpetrator and increased positive foreign DNA yield may be explained by the age of child victim.	evidence from the bodies and clothing of children within the 72 hours from abuse interval. 5. Unlike previous studies, this study revealed

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			evidence analysis.			8. It is also important to note that presenting a sexual abuse concern to the PED did not have a statistically significant effect on positive foreign DNA yield. Often times, the decision to collect forensic evidence from a child's body is made to a large degree based on the presenting sexual abuse concern. This study reveals that this crucial decision should not be made lightly and that children presenting to the PED with circumstantial sexual abuse concerns may indeed have experienced sexual abuse and failure to collect a forensic evidence kit could result in the loss of critical recoverable evidence.	an expanded window of time since abuse associated with increased positive forensic evidence yield. Further research is needed to extend the window for

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						9. Finally, although certain factors were associated with increased yield of identifiable foreign DNA within each factor, there were multiple outliers where failure to collect forensic evidence would have resulted in a loss of recoverable foreign DNA. One third of forensic evidence kits yielding positive foreign DNA profiles were collected from children less than 13 years old with 14 positive kits collected from children as young as 3–5 years old with seven positive samples collected from body sites. It is crucial to collect forensic evidence as soon as	evidence collection in prepubertal children beyond the 72 hours from abuse interval.

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						possible after sexual abuse; however, positive identifiable foreign DNA profiles were identified from the body samples of 11 children 12 years old and younger in the interval of 25–48 hours and one 4-year-old child in the interval of 49–72 hours. 10. Although children disclosing high-severity sexual abuse acts in the course of their forensic interview in the PED had an increased likelihood of having their forensic evidence kit yield identifiable foreign DNA, 16 children who gave no disclosure of sexual abuse in their forensic	

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						interview or who were not interviewed in the PED had a positive forensic evidence kit. Thirteen of these children were 12 years old or younger, and six had positive samples collected from body sites.	
34. Hurst et al. **2021**	Urban, regional, freestanding children's hospital;	Sample N= 301 Enrolled N= 212	Non-Experimental Quantitative Tool Validation in	Greenbaum et al's16 6-question child sex-trafficking	Therefore, the objective of this study was to establish	1. Accurate and timely identification of child sex trafficking in clinical settings has many barriers. Standardized screening tools provide an opportunity to identify those at risk for child sex trafficking, although, to date, they have only employed inperson interviewing. In this study, we examined the test characteristics of a previously	1. A confidentially administered, previously validated, electronic screening tool

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	Serves as a tertiary care level 1 American College of Surgeons–verified trauma center, with a PED.	A total of 212 subjects were enrolled; 26 patients were subjected to child sex trafficking	Specific Setting Cross-sectional, Observational Professional research assistants (PRAs) approached eligible subjects for enrollment and	screening tool; For subjects who screened positive, the treating practitioner was instructed	the sensitivity and specificity of Greenbaum et al's16 6-question child sex-trafficking screening tool by administer	validated 6-question sex-trafficking screening tool administered confidentially via an electronic tablet in English and Spanish. 2. Ultimately, with this method, we accurately identified minors at high risk for child sex trafficking who are in need of additional evaluation and services, congruent with the hypothesis of this study.	was used to accurately identify sex trafficking among minors, suggesting that this modality of screening may be useful in busy clinical environments.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
	Large urban pediatric emergency department Between February 2019 and March 2020.	(prevalence: 12.3%). A convenience sample of 12- to 17- year-old English- and Spanish speaking	obtained consent. Accompanying persons were asked to leave the room while the patient filled out the survey to ensure confidentiality and avoid potential traffickers	to consult a Clinical Social Worker or notify the psychiatric CSW to facilitate a psychosocial evaluation for child sex trafficking	ing it on a confidential, electronic tablet to English & Spanish speaking minors presenting to a pediatric emergency	3. No additional local risk factors significantly improved the sensitivity of the screen when retroactively fit in a logistic regression model. 4. With this screening tool administered in a confidential manner, we detected a prevalence of child sex trafficking among high-risk minors of 12.3%, higher than found in previous studies by using in-person interviewing. The higher prevalence may be a result of improved reporting by subjects because the disclosure was via selfreporting through an electronic survey. Adolescents and parents agree that screening for	2. This modality of screening may be helpful in other clinical environments to decrease the burden of requiring in-person, trauma informed interviews to screen for trafficking and

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		subjects; Patients eligible for inclusion if: they presented alone; for psychiatric	from influencing subject responses. Study subjects completed a 6-item confidential screening tool on an electronic tablet in Research	and report to the appropriate authorities.	department (PED). The hypothesis is that confidential electronic screening adequately identifies minors at high risk for sex	risky behaviors during health care visits is important and well accepted, including in the PED, whereas electronic formatting of many screening tools integrates a comfortable modality for adolescents to admit risky behaviors. 5. Winning over the trust of young adolescents is often difficult and may become nearly impossible when a trafficker presents with them to medical care; this confidential screening modality may, therefore, make it easier for minors to answer sensitive questions if their trafficker is present.	improve appropriate care for this population.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		or genitourinary complaints, sexual abuse, sexual assault; or law enforcement concern	Electronic Data Capture. For subjects who screened positive, the treating practitioner was instructed to consult a CSW or notify the psychiatric CSW to facilitate a psychosocial		trafficking in this population by using the previous validated screening tool; and that local risk factors would increase	6. Our high prevalence of cases may also be related to the geographic region where the study was conducted: an urban environment with multiple transit points, including a large international airport, quad-directional interstates, cross-country railway systems, large conference centers, and multiple major sports teams. In other studies, researchers examining the geographic distribution of child sex trafficking have found clusters in areas of tourism and transportation hubs as well as in large metropolitan areas where there are high numbers of homeless youth.	

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		for trafficking. Patients excluded if they had altered mental status; hallucinations; developmental or	evaluation for child sex trafficking and report to the appropriate authorities. The CSW referral to DHS served as the gold standard, establishing the patient as a case of child		the sensitivity of the tool.	7. Despite a higher prevalence of child sex trafficking in this study, the sensitivity and NPV of this tool are similar to previous reports, suggesting that this is an effective way to screen for child sex trafficking in busy, clinical environments. The survey cut-off points in this study also reflect those in the validation performed by Greenbaum et al, with a similar change in sensitivity and specificity based on the number of questions answered positively. 8. The cases with false-negative results in this population were low. However, those that did	

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		cognitive delays; or minor trauma.	sex trafficking, although cases were not managed longitudinally through DHS to confirm.			have a false-negative screen result still had appropriate evaluations prompted by high-risk behaviors, and, thus, trafficking was still identified. 9. This screening tool favors sensitivity at the expense of specificity, resulting in the identification of a high number of false-positive results, consistent with other studies. This trade-off is acceptable, considering that a failure to identify trafficked persons could result in continued abuse, trafficking, drug abuse, STIs, and possibly even death. Subjects with false-	

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						positive results, ultimately, underwent more testing, which is likely warranted, given the high-risk behaviors the subjects endorsed on their positive screen results. Documentation in the medical record should specifically reflect the endorsed high-risk behaviors instead of sex trafficking to decrease any associated stigma. However, because sex trafficking of children ,18 years old is child abuse, it is still important to document the full psychosocial evaluation to ensure that other practitioners can be aware of potential trafficking and the minor's high risk for abuse.	

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						10. In this population, history of suicide attempt and child abuse increased the odds of screening positive for trafficking. The test characteristics of this screen did not improve when added to a logistic regression model. Similar to other studies, many of the patients presenting with previous trafficking concerns, runaway status, and out-of-control behaviors are triaged as primary psychiatric complaints, resulting in a high proportion of these patients in this study population. Therefore, a history of suicide	

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						attempt may not have improved the screening tool because of the high proportion of psychiatric complaint enrollment because patients may have been suicidal for reasons not related to trafficking. 11. Similarly, a history of child abuse can be associated with running away from home, a screening question on the tool, which may have increased the odds of trafficking seen here also.	

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						12. Over the course of this study, some patients contradicted their screening responses when practitioners or CSW asked additional questions in person. Although the confidential tablet survey was one of the strengths of this screening method, it became unclear how to report findings to DHS when the patient verbally denied their behaviors. 13. Subjects, often, do not identify themselves as victims, a well-described phenomenon of	

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						exploited persons described in other studies and, therefore, may be less likely to admit to victimization in person. Therefore, in this study, investigators adapted the research procedures to use the tablet survey responses as the patient's admission of their behaviors. Although this was a small number of patients, these cases were reported to DHS. 14. The true prevalence of trafficked persons is largely unknown. Generally, it is difficult to obtain the	

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						true prevalence and incidence of trafficking because of the secretive nature of the process: trafficked individuals are trained to not disclose information to protect their traffickers from arrest and litigation, and trafficked persons are led to believe that they may also be arrested or prosecuted for their behaviors. 15. “Trauma bonding” may also facilitate the protection of the trafficker by the trafficked person because the trafficked person sees the	

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						attentions paid to them by their trafficker as affection, despite actual physical, psychological, and sexual abuse. 16. Finally, because suicide screening in PEDs is becoming more prevalent in the general adolescent population, which is well tolerated by patients and practitioners while improving suicide detection, it would be prudent to also begin screening the general adolescent population for trafficking to determine the true prevalence.	

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35. Peeters et al. **2019**	The University Hospital of Ghent and the University Medical Centre of Saint Peter in Brussels, Belgium	Questionnaire Sample N= 51 Enrolled N= 3 5.8%	Non-experimental Mixed-method design Quantitative and Qualitative Survey	Nil	Objective was to inquire deeply on former victims' evaluation of the currently provided care in Belgium;	1. Profile of the participants: The number of participants in this study is too small to extrapolate conclusions for Belgium or other countries. Nevertheless, three facts stand out on the profile of the participants. Firstly, as is shown in former literature every victim knew their assailant before the SV occurred. This still stands in contrast to the prevailing rape myth accepted in the general Belgian population; that assailants are mostly unknown by their victim.	Three findings stand out when observing the answers given by the participants. 1. First they agree that the judicial procedure –

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	May to November 2016,	Online Recruitment Sample N= 20 Enrolled N= 13 65% Total	Descriptive; Explorative Questionnaire, in-depth interview or small focus group was applied depending on the time elapsed between rape		and obtain their opinion on the hypothesis (Hospital based Sexual assault care center, using SANE as key	2.Secondly, twelve participants told us they had already been a victim of sexually inappropriate remarks and groping before the most recent episode of SV. There is thus still a very high acceptance of harassment and 'lighter' forms of SV in Belgium, which is also in line with recent literature, yet at societal level problematic. 3. Thirdly and lastly, the fact that seven participants were minors at the time of their (first) sexual victimisation and four participants were male victims. This last fact emphasises the need for adequate and specialised care for minors	starting with filing a complaint- should be disconnected from the provision of medical, forensic and psychosocial care after SV.

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		22% Every victim of SV above the age of legal consent to sex in Belgium (16 years old) who came in	and participation. The questionnaires consisted of a part A to be completed as soon as possible after having the SAS administered		caregiver) in order to take their experience and knowledge into account when designing a model fit for the Belgian healthcare	as well as adults, both male and female, which is also important in the prevention of revictimization. 4. Consequences of the victimisation and current provided care: The high frequency of many health problems listed by the participants coincides with the variety of consequences listed in the literature. This high number of adverse health consequences exists despite the sometimes long period of time between the interview and the violence, underlining the importance of long-term follow-up care.	2. Second is the fact that they all had to search to find adequate (psychological) help, which turned out to be extremely expensive.

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		for a SAS kit. Only inclusion criteria for online group: being victim of SV; having sought care for it;	and a part B to be completed 1 month later. On the other hand, former victims were questioned by means of an individual in-depth interview or in small focus		context for pilot testing.	5. PTSD is the most frequently described psychological consequence by the participants. Yet, it should be noted that, when asked during the interview if they had been tested on PTSD, only half of the participants responded confirmatively. Given that rape has been found to be the trauma most associated with Post-Traumatic Stress Disorder (PTSD) in women, it would be a logical step to test every victim of SV, but this is clearly not yet the case in Belgium.	3. Finally, they are unanimously positive about the idea of having a SACC instead of the current provided care.

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		being older than 16 years old.	groups. The recruitment was organised via an online invitation posted on relevant Belgian websites and discussion fora for SV victims. They could choose to participate			6. Half of the participants who answered the question told us they wanted more psychotherapy or wanted it sooner but did not pursue these courses due to the high costs, deteriorating the accessibility. Earlier literature confirms this. An extra difficulty exists for victims who are minors or students who financially depend on their parents but do not necessarily wish to confide in them about needing help. Adequate measures should be taken to ensure the financial accessibility of the needed care.	All care for victims of sexual violence, especially forensic and psychological care, needs drastic improvement in Belgium.

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			in either individual in-depth interview or a small focus group with several victims of the same gender.			7. Jina et al. stated the relationship between a victim of SV and his entourage can suffer post assault. Assessing the different responses in this study, the relational consequences can be divided into two groups. If the confidant reacted adequately, the relationship between the victim and confidant grew stronger. If not, the relationship was damaged with some of them ending. Almost all participants were confronted with both situations depending on the reaction of the person in which they confided. A victim of SV needs support during	All participants agreed that having specialised, multidisciplinary and longitudinal care in a Sexual Assault Care Centre that would be open 24/7 for everyone,

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						the whole healing process, so social isolation should be avoided. 8. Neither of the two non-Belgian participants told their families what had happened and emphasised it as culturally unacceptable. The cultural background of a victim should therefore be considered. This is an important factor to take into account when developing SACCs in a multicultural environment or in a country with a different culture then the Belgian culture. Therefore, the caregiver's cultural competence and understanding are vital.	victims and their significant others, would be an improvement to the currently available care all over Belgium.

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						9. In addition to this, it is important that the relatives of a victim are taught how to interact with the victim, highlighting the need to raise awareness in the general population and the close entourage of victims. Furthermore, it is necessary to provide support in the SACC for relatives should they have questions or need help themselves as is already the case in the Netherlands.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						10. The police services: As shown before, up until 2016 a victim needed to officially press charges against the alleged assailant in order to be able to have a forensic examination through a SAS kit in Belgium. Those were mostly administered in hospitals or forensic institutes. This thus represents a predominantly medico-legal approach to SV: the body of the victim is above all considered as part of the crime scene as there is evidence to be found in and on it. The fact that it regards a person who just went through a traumatic event	

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						and needs assistance and care is often only considered at a later stage – if considered at all. 11. All participants considered it vital that the necessity to file a complaint prior to having the opportunity for a forensic examination should be dropped. They preferred the option to have a forensic examination and/or appropriate medical care immediately and to have more time to decide whether to file a complaint when ready. This is already possible in Ireland [26], Denmark [38] the United Kingdom [34] and the Netherlands [33] where it is demonstrated that, with easily	

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						accessible information and support before, during and after the declaration, the victim would feel ready to file his or her complaint faster. 12. Moreover the participants were in favour of having the option that the healthcare worker presses charges in case a assailant is reported more than once as is the case in Denmark [38]. After ample meetings with prosecutors and judicial experts, this has been taken into consideration in the Belgian SACC model and is tested as such in the piloting of the model.	

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						13. Furthermore, it has been stressed that the police officer noting the declaration should be experienced in the delicate and traumatising subject of SV. Offering the victim the possibility to choose the officer's gender might contribute to making the victim feel more at ease. Organising specialised training and making sure both genders of police officers are on call was put forward as a huge improvement and is now also considered for pilot testing.	

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						14. Care received at the hospital: Optimal holistic care consist of an acute forensic, medical and psychological examination, ideally simultaneously, and medical and psychological care in the years following upon the SV. The two participants who disclosed about their forensic and medical examination recalled it to be an unpleasant experience. 15. Possible improvements are assuring that the victim is never completely naked during the	

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						examination, a human approach and clear information about the different steps of the examination. 16. Replacing the speculum with smears would also be a step in the right direction. Those measures are all very obtainable and should be implemented immediately both in the current SAS as in the SACCs. 17. The opinions on acute psychosocial assistance, provided at the hospital, were mixed.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						The consequences victims continue to suffer from to this day, are primarily psychological. Therefore the psychological assessment and follow-up should be optimal from the first point of contact to try and minimise the psychological consequences perceived later in life. 18. The participants enforced the literature by saying that the presence of a safety net and a safe place to stay at discharge will help to ensure the best start of the healing process post assault. This recommendation has also been taken into consideration and free psychological care	

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						comparable to the ones provided in existing SARCs will be provided in the piloting of the Belgian SACCs. 19. Yet, the Belgian psychological care provision needs to be improved drastically. It should be ensured that a victim of SV is treated by a clinically educated psychologist in trauma-related matters. Victims of SV are at risk of revictimization. Making sure they are correctly taken care of from the start of their healing process could avoid revictimization and should thus be a priority of the government who	

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						subsequently needs to organise and supervise the psychological care in Belgium. 20. Guidelines show the best way to organise medical and psychological follow-up after SV. The chronic care in Belgium is not organised as it should be according to these guidelines. The participants had to search for help themselves. This, again, could be harmful and possibly lead to further traumatisation if they do not find specialised care.	

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						21. A last point would be the experience and gender of the caretaker. To ensure optimal care for victims from a patient-centred approach, it is primordial that all services employ experienced caretakers whose gender can ideally be chosen by the victim. 22. Care for the caretaker: Hearing all those testimonials was challenging. The healthcare worker who hears those testimonials every day has no easy task at hand. Supervision should be provided in the centres to monitor the coping of the healthcare workers. This also came forward in	

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						another sub-study where caretakers asked for more supervision themselves. After every in-debt interview or focus group of this study, the researchers took a moment to debrief and reflect on the testimonies to enable everyone to process the information. 23. Perspective on sexual assault care centres: The participants perceived the future SACC in about the same way as put forward in our hypothesis. They want a centre that provides centralised and specialist care. This would be provided by a SANE who would have four tasks.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						The first would be to provide all acute forensic, medical and psychological care for the victim. 24. The second would be to make sure the victim has a safe place to go to after receiving the care he or she needed. Another task of the SANE would be to raise awareness in the entire population. A last task of the SANE would be telephone and online help. For the participants it is imperative that this help should be available round the clock, as already exists in Ireland and Denmark. If possible, it is recommended to allow the victim to choose the gender of the SANE.	

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						25. Subsequently, the case-manager [39] will make sure there is sufficient follow-up in order to avoid the victim becoming lost in their search for help. The fact that victims of recent SV, former victims and their relatives would be welcome in the centres was crucial to all participants. This centralised and holistic care could reduce the personal financial burden for the victim. Having SACCs will enable every victim to receive specialised care that can easily be controlled on quality and efficacy, thus making SACCs more	

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						cost-effective for the government than the present-day situation. 26. Another aspect that is part of the hypothesis is the contact with fellow victims, an aspect participants had searched for themselves in the time following their SV. This contact could be organised online or in the SACC. Anyway, it is important this contact would happen in a verified fashion to prevent further traumatisation of victims who decide to participate.	

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						27. This sums up what they would expect from the SACC, but only with reference to centres for acute care needs. The participants also stretched the importance of followup care. Furthermore, they want a centre where they are more than victims, a centre that helps them reintegrate into society. To help them achieve that goal, the participants listed other caregivers that should be on hand in the SACCs: legal advice, a sex therapist, addiction treatment and a mediator. If this is not feasible, a referral list of appropriate caregivers should be available. A multipurpose hall would also be an option to make the centre feel safer and less clinically cold.	

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
						28. International recommendation: As the centres are organised for victims of SV it seems logical to take their opinions into account and implement their advice as much as possible. Having a substudy dedicated to victims certainly was a strong point in the development of SACCs in Belgium. It is subsequently strongly recommended that every development of future SACCs include victims' perspectives.	

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36. Tarquinio et al. **2011**	France September 2010 to September 2011.	N= 17 Female rape victims within 24 to 78 hours after their aggression. The participants were directly approached:	Quasi-experimental Quantitative Pre/Post Intervention Longitudinal	Eye movement desensitization and reprocessing; This psychological emergency protocol	This research aims to test the effectiveness of a new form of early treatment for the consequences of rapes.	1. The results tend to conform with our expectations. Effectively, it was observed that after a single session, the URG-EMDR protocol led to a decrease in the scores related to a posttraumatic stress state evaluated with the IES. This reduction concerns the total IES score as well as the scores for intrusion and avoidance. 2. Moreover, this reduction of the symptoms proves to be stable over time because the effects for all of the measures of the IES are maintained after 4 weeks and then after 6 months. Nothing	1. However, it must be underlined that such an early treatment approach does not have an absolute therapeutic ambition, but rather aims to reduce the traumatic impact and

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		(n = 6) at the research center by psychologists involved in the study; oriented by their family doctor (n = 5); or by regional associations offering aid to	Using several emergency EMDR protocols such as Shapiro's (2009) RTEP (Recent Traumatic Episode Protocol) and Kutz, Risnik and Dekel's (2008) Modified	coming from EMDR therapy was named URG-EMDR. The URGent EMDR treatment	Evaluate effects of this psychological support on posttraumatic symptomatology, psychological	can be said about what happens after 6 months, but it is undoubtedly satisfying to observe a stability of the effects which appear to be deeply rooted in all of the subjects. 3. Concerning the different SUD measures, a significant decrease in the patients' distress can be seen between the pretest and the posttest phases. Obviously, we are far from reaching the SUD threshold of 0 as is done with a standard protocol. Nevertheless, the gain is consequential because it was possible to lose five to six SUD points in one session, which, according to us, is	thereby mobilize the victims' capacity to adapt, and to avoid the onset of chronic troubles. 2. In this perspective, the results obtained

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		victims (n = 6).	Abridged EMDR Protocol, as well as the practice of psychological debriefing, participants were treated in one session. The average	protocol (URG-EMDR) is an integrative approach which combines key points of the basic protocol of Francine Shapiro	distress, and on indicators of sexuality for these female victims. We hypothesize (H1) that a	remarkable in the framework of an early treatment. And this result is maintained after 4 weeks and then after 6 months. 4. Finally, in our opinion, the return to a normal sex life (perceived as such) requires time and on no account can its treatment be reduced to a single session in the framework of an emergency protocol. Admittedly, the results improve after 4 weeks and 6 months, but the patients' evaluation of their sexuality is somewhat far from what it would seem to have been before the rape.	regarding the amount of time (Table 5) devoted to the treatment (in other words, beginning with phase 3 of the protocol presented here) are satisfactory. All of the subjects

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			duration of the URG-EMDR treatment (phase 3 to 7) was 1 hour and 45 minutes. After a 4-week and then a 6-month follow-up, we	(2001), of the Recent Event Protocol of Francine Shapiro (2001), of the R-TEP protocol of Shapiro and Laub (2008,	treatment with the URGEMDR protocol will lead to reduction in indicators of posttraumatic stress evaluated	5. Such a result shows that this type of treatment leaves something of the trauma unresolved. This something is far from being only limited to PTSD, which, in light of our results, leads the subjects to scores which could appear to be sufficient. The experience of sexual violence and its consequences have a profound effect on the subjects which goes beyond the simple symptomatic manifestations to which the subjects are too easily reduced. Something has to be rebuilt and re-elaborated, which will undoubtedly require time and	responded positively to the protocol, even if the duration of the treatment proved to be long for some of them. It can then be considered that the approach is psychologicall

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			evaluated the effects of this psychological support on posttraumatic symptomatology, psychological distress, and on certain indicators of the sexuality of these female victims	2009), of the Modified Abridged EMDR protocol of Kutz (Kutz et al., 2008) and the Emergency	with the IES. We assume (H2) that this reduction of symptoms will remain stable with time,	psychotherapeutic work that is even more extensive and more ambitious than applying an emergency protocol in one session. 6. Concerning the correlations observed at 4 weeks and at 6 months between the indicators of sexual desire and the level of excitation and certain variables measured during the same periods, it appears that the final SUDs are indicators strongly linked to the evolution of sexual health. The SUD is an indicator of emotional distress. Therefore, the emotion or perceived stress when faced with a traumatic	y economic. This idea, often criticized by the adherents of a traditional psychology, consists of accepting that, in an emergency situation, the relation between cost

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			compared to their prior sexuality. The French version of the Impact of Event Scale (IES) used to evaluate severity of trauma-related	Response Procedure of Quinn (2009), as well as some principles related to psychological debriefing.	that the short-term effects of the treatment will be maintained (after 4 weeks) as well as the medium-term effects (after 6	situation necessarily affects the victims' return to a normal sex life. Undoubtedly, reducing the SUD to 0 (which would indicate a total reduction of the PTSD symptoms) would be the condition sine qua non for implementing or at least beginning a work of psychocorporal reconstruction and a narcissistic recovery. 7. It is well known that psychotherapy, in addition to reducing the symptoms, contributes to the work of psychological reconstruction which is not the aim and the function of an approach such as the URG-EMDR. The return to a normal sex	and benefit must also be taken into account in order to evaluate the pertinence of the treatment. 3. Not only was a significant decrease in the

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			symptomatology. The IES is a 15-item self-report questionnaire measuring 2 dimensions of posttraumatic psychological distress: intrusions and avoidance.		months). Regarding the different SUD measures, we hypothesize (H3) that that will be a significant decrease in	life could only be obtained at this cost, which inevitably would require a more complex work of psychotherapy. A sexological treatment, which would include the partner if need be, can be envisaged. Effectively, in addition to the SUD evaluation 6 to 12 months after the early treatment with the URG-EMDR protocol, a sexological evaluation of the impact of the event on the sexuality seems to be indicated in order to show possible troubles: decrease in desire, vaginismus, etc. A sexual-therapeutic treatment including attentive listening, sex education and treatment (relaxation therapy, EMDR, psychotherapy) is then indicated.	different psycho-traumatic indicators and in distress observed with this approach, but this was done on average in 1 h 53 minutes. As experienced psychologists,

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			The Subjective Unit of Distress (SUD); a Likert scale, evaluates the degree of distress caused by mental image/ a target/ a critical point		the patients' distress between pretest & posttest phases, and we expect this decrease will be maintained after 4 weeks and		specialized in emergency psychological intervention, we look forward to the possibilities that the EMDR has to offer as more than a simple vent for emotions.

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			activated and treated during the psycho-therapeutic process. It is a subjective evaluation of patient's negative sentiment during treatment.		after 6 months. We hypothesize (H4) that the return to normal sex life (perceived as such) for these rape victims		4. The URG-EMDR protocol integrates several approaches already tested in this domain. Sometimes streamlined, often too complicated in their approaches

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					will occur with time.		according to us, such an approach is an interesting response to early individual treatment, whether it be urgent (several hours after the events) or not (several days).

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							5. Research on debriefing was undertaken in the 1990s. Often adulated, sometimes criticized, this approach at least has the merit of existing and offering comfort to

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							victims. The aim of our approach is not to put into question the concept of early intervention, but to contribute to its evolution and its development by increasing

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							its effective potential.
37. Jancey et al. **2011**	Healthcare settings (emergency departments and community health centres);	Sample N= 42 Responded N= 27 64% Representatives identified from 32	Non-experimental Mixed method Mixed-method design Quantitative and Qualitative	Nil	To explore health professionals' perceptions of sexual assault management practices	1. The study generated eight areas of interest, highlighting the complexity of this unique public health issue. 2. All panel members agreed that there were limited sexual assault services in regional WA, with the majority reporting broad variation in the delivery of services (85.2 per cent) and drawing	There is a need for a comprehensive management approach to sexual assault which includes clear prescriptive guidelines;

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	Located in metropolitan Perth and rural Western Australia.	community organisations & hospital emergency departments (EDs); Selection criteria required that panel members be HCP (medical doctors, nurses, social workers	Survey Delphi method Exploratory Snowball sampling		and identify issues related to these practices across Western Australia (WA).	attention to the acknowledged disparity in healthcare delivery between the city and country. 3.Panel members supported the provision of a standardized document detailing procedures; a well-promoted 24-hour staff support hotline; and increased funding for the management of sexual assault. 4. 92.5 per cent of panel members indicated that staff are unclear about the procedure for collecting and storing forensic data.	workforce training and development; equitable access to services; and community education. Sexual assault is a serious

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		and counsellors) who engage/ treat victims/ survivors of sexual assault.	methodology was used. Two rounds of questionnaires formulated by the Delphi research team. Involved open ended			5. The panel members reported a need for clear communication by medical staff around all procedures and a detailed step by step guide that considers the victims/survivors rights. 6. The absence of follow-up for victims/survivors of sexual assault is another area of identified need (85.2 per cent), with a follow-up phone system and long-term counselling seen as potential solutions.	public health issue. The adoption of a multilevel approach will support change and improve health outcomes for this group.

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			questions and a Likert scale.			7. All panel members reported a shortage of culturally appropriate responses and services for minority groups. 8. Almost all panel members (96.3 per cent) believed that a well-publicised telephone hotline for victims, family members and perpetrators was required along with educative social marketing campaigns. 9. All panel members reported a need to improve the management of sexual assault victims/survivors within the legal system,	

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						acknowledging the role of specialist courts to reduce the waiting period so that the victim/survivor can move on. They also expressed support for an improved system for educating courts on sexual assault.	
38. Louwers et al. **2011**	Seven hospitals (a university children's hospital, three teaching hospitals and three	N= 24472 All children aged 0–18 years who	Non-experimental Quantitative	All hospitals had a checklist of warning signs of child	This study examines the detection rates of suspected child	1. During a 6-month study period, a suspicion of child abuse arose in 0.2% of children aged ≤18 years who visited the emergency departments of seven hospitals, and in 0.3% of children aged ≤4 years.	The strengths of this study are the relatively long observational period, the large number

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	rural hospitals); The province of South-Holland. Data were collected over 6 months for each hospital.	visited the emergency departments with a new complaint over a 6-month period were included.	Retrospective record review Explorative; Descriptive Data on demographics, diagnosis and suspected	abuse available in the emergency department.	abuse in the emergency departments of seven Dutch hospitals complying and not complying with screening guidelines	2. The significantly higher detection rate in hospitals complying with screening guidelines for child abuse (0.3%) compared to those not complying (0.1%) shows the importance of increased situational awareness for improving detection of child abuse. 3. Checklists were completed in 40 (77%) of the 52 cases of suspected abuse but in only 19% of the total population, although the use of checklists in suspected cases might have been intentional selection.	of children, the inclusion of all patients (≤18 years old) who visited the emergency departments with a new complaint, and the fact that of the results are representative of various

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	Data collection from August 2007-August 2008.	The definition used for child abuse was any form of threatening or violent physical, mental or sexual interaction	child abuse were collected. These checklists were either used for all children visiting the ED, or, in one hospital, only for children with trauma,		for child abuse.	4. Implementation of a structured screening protocol, therefore increasing the situational awareness of child abuse, might result in a higher detection rate of suspected child abuse. A checklist of warning signs of child abuse could be part of such a protocol, but a validated checklist is currently not available. 5. If a checklist were used, it might result in more cases of suspected child abuse being identified and would be a first step in improving the	emergency department settings. In summary, the detection rates of suspected child abuse in children who visited an emergency department

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		with a minor; which is perpetrated actively or passively by parents or other persons on whom the minor is dependent; and causes	and were mostly completed by ED nurses. If one of warning signs on the checklist was ticked, the ED nurse informed the treating			detection rate of actual cases of child abuse. The use of a checklist in every child visiting the emergency department would result in universal screening to identify a high risk group. 6. Unfortunately, an increase in the sensitivity of child abuse detection would lead to a decrease in specificity. Therefore, a protocol with clear guidelines on how to manage suspicions of child abuse is required. Where a case is suspected, it is very important that the physician informs the parents about his or her concerns without accusing anyone. Unfortunately, fear among	were very low (0.2%). However, the detection rate of suspected abuse was higher in hospitals where emergency department staff complied

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		or will probably cause physical or mental injury and serious harm to the minor.	specialist that the suspicion of child abuse was increased. The completion of a checklist of warning signs of child abuse in at least 10% of the ED visits was considered to be compliance			physicians and other emergency department staff of making a false accusation can lead to failure to report cases of suspected abuse. 7. Screening for child abuse in the emergency department is not standard policy in most countries (eg, USA, Canada and the UK), but did become mandatory in the Netherlands in 2009. Earlier studies on screening (each including 2000–4422 patients) reported higher detection rates of suspected abuse (range 1.1–1.4%) than the 0.3% rate identified in the present study.	with screening guidelines than in hospitals with non-compliant emergency department staff. We recommend that hospitals encourage

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			with screening guidelines.			8. We found that the detection rate of suspected child abuse was much higher when a checklist of warning signs of abuse was completed. Comparison of screened cases with those not screened showed that emergency department staff completed the checklist more often in children who were younger, were referred by a general practitioner or were treated for a paediatric complaint. 9. In the present study, children suspected of being abused were younger than the average child in the emergency department. The younger	compliance with screening guidelines, implement strict policies to improve the detection rate of suspected child abuse in emergency departments, and use the results of these interventions

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						the child, the more vulnerable he or she is, the higher the risk that an injury requires medical attention, and the higher the chance that emergency department staff suspect abuse. However, because child abuse can affect children of all ages, emergency department staff must be aware of the risk in all children visiting the emergency department to avoid missing cases of child abuse. 10. Physical abuse is the most common type of child abuse detected in the emergency department, as shown in the present study.	to develop an optimal screening protocol for emergency departments. Further research is recommended on how to identify genuine cases

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						Neglect and emotional and sexual abuse are more difficult to identify in an emergency department setting but also require attention. 11. Overall, child abuse remains an under-reported problem. This can be attributed to, for example, inadequate knowledge and training of professionals regarding recognition of abuse injuries, unwillingness to report suspicions of abuse, and variations in what is considered to be abuse.	of child abuse among the high risk group of suspected cases identified by screening.

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39. Fontenot 2013	Members of the International Association of Forensic Nurses (IAFN)	N= 519 nurses. Nurses who are members of the International Association of Forensic	Non-experimental Quantitative Cross-sectional electronic mail survey	Nil	(1) Determine the level of forensic nurses' support for incorporating HPV preventative strategies into the routine care for	1. Numerous investigators have documented that provider recommendation is a strong facilitating factor for HPV vaccination uptake. This study was one of the first to uncover nurses' support related to vaccination. 2. The forensic nurses in this study reported overwhelming high levels of support for HPV education, recommendation, and vaccination for sexual assault patients. Of the nurses, only 2.1% were not supportive of some type of approach to integrate HPV prevention strategies into routine sexual assault care. Almost the entire sample	1. Nurses provide care for many adolescent and young adult sexual assault patients who are at risk for acquiring HPV and are within the age range for HPV vaccination.

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		Nurses (IAFN) and who are stake holders in the care of patients post sexual assault (defined as providing direct care,	Explorative; Descriptive. 14-item measure for knowledge of HPV and the HPV vaccine was utilized. Perceived benefits; Perceived		sexual assault patients; (2) Identify factors that are associated with (knowledge, attitude, experience	(98%) supported providing HPV education at time of care post sexual assault. Approximately 86% of the nurses supported change to written discharge instructions/ paperwork that would include recommendation for HPV vaccination. Lastly, 53% of the nurses indicated that HPV vaccination should be initiated during care in the emergency department post sexual assault. 3. The nurses' general knowledge, vaccine attitudes, normative beliefs, and perceived benefits were all highly positive. The nurses' perceived barriers to vaccination were low. The	2. There is an opportunity to update current practice guidelines and recommendations. 3. The nurses in this national sample were

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		counseling, followup, education, and research and policy development). The sample was recruited	barriers; Normative Beliefs; Self-efficacy, and Vaccine attitudes measures were all Likert-scale format questions.		, normative beliefs, self-efficacy, perceived barriers, and perceived benefits) nurses' support of integrating HPV	participants overwhelmingly reported their level of support in the top 2 support categories. The analyses revealed that clinical experience and perceived benefits were facilitators of level of support and for HPV vaccine initiation at point of care. 4. Knowledge and perceived barriers were factors that decreased the likelihood of the nurse having the very highest level of support (vaccine initiation at point of care). Perceived benefits were the overall strongest predictor of support.	overwhelmingly supportive of integrating HPV prevention strategies into care. In this study, perceived benefit was the strongest overall

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		via the IAFN electronic mail list serve; members were emailed with information about the study and a URL address			prevention strategies into the routine care for sexual assault patients.	Normative beliefs, vaccine attitudes, and self-efficacy were not significant predictors. 5. Previously, Kahn et al. (2005) identified high levels of knowledge as a variable associated with intention to vaccinate for physicians; however, in this study, surprisingly high levels of knowledge moved nurses slightly down on the support scale. All nurses in this study had relatively high knowledge about HPV; however, nurses with the highest levels of knowledge had 25.6 % lower odds of being in category 4, support for vaccination at points of care. One possible	predictor of support. This was similar to the physician level of support described by McCave (2010): Personal belief in the positive impact of vaccination was reported

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		where they could access additional information. Sample size calculations to achieve 80%				explanation for why those with the very highest level of knowledge were less supportive of initiating the vaccine at point of care post sexual assault may be related to concerns associated with the multiple dose nature of the vaccine and need to follow up for subsequent vaccinations (however, this was not assessed specifically as a potential barrier in this study). Despite the importance of assessing for and understanding provider baseline knowledge, it is not a concept that has been fully established as a predictor of behavioral change, intention, or support.	by physicians who most often provided the vaccine to their patients.

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		power revealed a conservative sample size of approximately 240 nurses.				6. In this study, perceived benefits, a concept explicated in the HBM, was the most influential factor of level of support. Kahn et al. (2005) reported that experience caring for sexually active adolescent patients was associated with intention to vaccinate. In this study, 100% of the participants care for sexual assault patients; therefore, these nurses all have a baseline of experience caring for patients who have had some type of sexual contact. However, the reported level of clinical experience related to HPV was significant and positively associated with these nurses' level of support. Nurses with high levels of clinical experience related to HPV	

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						had 24.2% higher odds of having the highest level of support for HPV vaccination (category 4). 7. Provider perceived barriers for HPV vaccination have been documented previously. Some of the barriers reported in the literature have been (1) perceived cost for patients and lack of awareness of vaccine assistance programs, (2) perceived parental and patient lack of education and understanding, and (3) provider comfort discussing sexual activity or the sexual connection to this virus and vaccine as well as	

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						perceived concern that vaccination implies condoning sexual activity. 8. Vadaparampil and colleagues (2011) also reported that providers with low perceived barriers were more likely to recommend the HPV vaccine to their patients. This study's findings are similar to those reported by previous researchers. On the Likert scale, the respondents reported the greatest perceived barriers as concerns about parental or patient lack of education and understanding (mean score= 3.98) as well as cost	

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						if the patient did not have insurance or qualify for vaccine assistance programs (mean score= 3.30). 9. However, unlike the work of previous researchers, the lowest perceived barrier was reluctance to discuss sexuality and STIs (mean score= 1.54). Surprisingly, these nurses did not perceive the time associated with adding additional responsibilities into routine care as a barrier (mean score= 2.08). Potentially, this may be related to the altruistic and dedicated nature of nurses who care for victims of sexual assault.	

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40. Shaw & Coates **2021**	Massachusetts State safety agency data from Provider Sexual Crime Reporting (PSCR) forms	N= 3969 PSCR forms filled by both Sexual assault nurse examiners (SANEs) and non-	Non-experimental Quantitative Retrospective form review (Provider Sexual Crime Reporting form)	-Nil	To use data from the existing Massachusetts state database to examine if this set of post-assault services and actions	1. In this study, we found support for all four of our hypotheses. As compared to cases treated by non-SANE medical providers, cases treated by SANEs were significantly more likely to have emergency contraception administered to female patients (65% vs. 53%), less likely to have a toxicology kit collected (27% vs.39%), less likely to have a police report filed at the time of examination (68% vs. 77%), and more likely to have a mandatory child abuse report filed for minor victims (86% vs. 65%). That all of our hypotheses were supported suggests that SANEs are operating as intended to provide expert,	1. This study provides empirical evidence of the positive impact of SANEs on post assault medical forensic service provision as compared to services

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	Between January 1, 2011 - December 31, 2015	SANE providers.	Descriptive		taken by the medical provider: (emergency contraception administration, toxicology kit use, report to	comprehensive, tailored first-response medical forensic care to sexual assault survivors. 2. Because SANEs receive extensive training in the care of sexual assault patients and are more familiar with the necessary documentation to complete in providing postassault care, they may be more likely to consistently and accurately complete said documentation as compared to non-SANE medical providers. In addition, and for the same reasons, SANEs may be more likely to fax the required documentation into the state	provided by non-SANE medical providers. Our findings compliment and affirm what has been documented in prior literature: SANEs are specialists who are

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					police at the time of examination, and child abuse reports) varied based on whether the medical provider was a	safety agency as compared to non-SANE medical providers. 3. Based on the patterns observed in these data, it seems as though non-SANE medical providers maybe focusing more on the needs of the criminal justice system, as indicated by higher rates of toxicology kit use and reports to police at the time of examination. Without critical training, non-SANE providers may find it difficult to balance the needs of the criminal justice system to secure potential evidence of a crime, with the	uniquely qualified to provide optimal care for sexual assault patients, providing a markedly improved response as compared to what is provided by

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					SANE or a non-SANE provider.	medical and emotional needs of the patient in front of them. 4. Non-SANE medical providers may believe a toxicology kit can help bolster a potential criminal case and collect it from patients even when it is not indicated. They may also mistakenly think that a report to police is required or strongly encouraged for all cases, even if it is not in full alignment with the wishes of the victim.	non-SANE medical providers. All sexual assault patients, across all communities, should have access to SANE care. 2. This invaluable

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						5. On the other hand, SANEs are trained to honor their role as medical providers first, charged with responding to the needs of the patient in front of them. They are trained to provide a range of options and services that best meet the needs of their patient while being sure not to compromise a potential criminal justice response. This is reflected in the relatively lower rates of toxicology kit use, as SANEs may be more intentional with their collection of the toxicology kit, using it only when indicated; lower rates of police reports at the time of examination, as SANEs make clear to the patient that they may choose though are not required to report to	study was made possible because of the state database that exists in the focal state. Without that database, it would have been incredibly challenging to provide insight into patterns in

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						police, and higher rates of emergency contraception administration, as SANEs make an effort to offer this service consistently when indicated. SANEs' familiarity and compliance with clearly established protocols also explains the higher rates of mandated child abuse reports. 6. Regarding the sample, the current study's sample only included cases in which a sexual assault kit was collected. SANEs know very well that a patient may choose to have a kit collected even if they	SANE and non-SANE postassault service provision and care across an entire state. 3. However, we were not able to include some cases in our analysis as

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						Choose not to report to police. Non-SANE medical providers may not be quite as familiar with patients' rights for a full medical forensic examination, complete with the collection of a sexual assault kit, regardless of whether they report to police. Even if they are aware of this patient right, they may still see the collection of a sexual assault kit and report to the police as tightly linked. If a patient states they did not report to the police, non-SANE medical providers may be more likely to not offer or even discourage the collection of a sexual assault kit. Such cases, in which a kit was not collected, then, would not appear in this sample, thus inflating	they were missing information on the variables of interest. This calls attention to the importance of consistent, accurate, and complete documentation in medical encounters.

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						the rate of non-SANE cases in this sample with a report to police at the time of examination. Regarding the data source, were lied completely on existing records. 7. SANEs and non-SANE medical providers may differ in how they complete the PSCR based on their training and experience completing this required documentation. It is likely that SANEs are more consistent and conservative in regard to when they indicate on the form that there was a report to police made at the time of examination. SANEs only check the box to indicate a report	Even when said information is thought not to inform acute service provision in the moment, such information can later be used to examine and evaluate

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						was made if a report to police was made prior to the SANE arriving on-scene, or if the police arrived on-scene and took a report before the SANE completed their care of the patient. 8. The focal state in this study is unique in its level of commitment to a centralized and coordinated response to sexual assault. This commitment is evidenced through the use of a state-wide database on sexual assault medical forensic care service provision and a state-wide SANE program operated out of the state department of public health. In addition, each	service provision. In relying upon such records, if something was not written down, it did not happen. It is important that SANEs and non-SANE medical providers alike

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						year, the state-wide SANE program provides training for non-SANE medical providers on how to respond to sexual assault patients. The state-wide SANE program consistently offers education and support to hospitals as they develop protocols related to serving sexual assault patients. As a result, patients treated by non-SANE medical providers in this state may receive an improved postassault medical response as compared to non-SANE medical providers treated elsewhere.	are supported to complete consistent, accurate, and complete documentation. This might mean providing additional time for medical providers to close out an encounter

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							before moving on to the next patient. 4. Clear protocols should be developed (when and where they do not already exist) and made available

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							to SANEs and non-SANE medical providers to guide their treatment of sexual assault patients. These data show an improved response to sexual assault patients when they are

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							treated by a SANE as compared to a non-SANE medical provider, likely a result of extensive training and familiarity with best practice protocols in

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							sexual assault response. 5. Although it is not feasible to expect all medical providers to train and be certified as SANEs, it is feasible to provide access

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							to and basic training on the conditions under which a toxicology kit should be used and a mandated child abuse report should be filed, and on how to present options to

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							patients regarding filing a police report and receiving emergency contraception. SANEs may be able to play a key role in developing and delivering this basic training to

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							their non-SANE colleagues.
41. VanMeter et al **2021**	England between 2009 and 2015 Investigative interviews	N= 80 Transcripts of Achieving Best Evidence (ABE)	Non-experimental Quantitative Retrospective child forensic	Achieving Best Evidence (ABE) investigative interviews.	To expand upon research on narrative coherence in child forensic	1. The study focused on how interviewer emotional and cognitive support and characteristics of child victims and their cases affected narrative coherence. Overall, the results support Reese and colleague's (2011) proposition that narrative coherence is multi-dimensional and is best captured when examining these dimensions separately.	1. In sum, the present study highlighted the influence of interviewer and child characteristics on narrative coherence in

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	alleging sexual abuse	investigative interviews with 7- to 15-year-olds; (M = 11.10, SD = 2.26; 79% female);	interview transcript analysis Descriptive		interviews; Examining how interviewer support & child characteristics are associated with narrative coherence (measured	2. In accordance with the hypotheses, first elicited events were more likely to be more coherent compared to subsequently elicited events, and child engagement was positively associated with all dimensions of narrative coherence. 3. However, contrary to hypotheses, interviewer support and children's age was only positively associated with chronology, script accounts were only associated with decreased consistency and chronology (but not theme), and cognitive	forensic interviews. 2. The findings demonstrate the importance of child characteristics on narrative coherence and highlight the importance of

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		alleging sexual abuse. Research criteria included: Complete transcripts of the ABE interviews; which	In order to obtain the current sample, her Majesty's Courts and Tribunals Service identified criminal trials that took place		using the NaCCS); when discussing alleged sexual abuse. Hypothesized: 1) Increased	support was not associated with any dimension of narrative coherence. 4. Results demonstrated that event order was significantly associated with all measures of coherence: the first elicited accounts of events were rated as significantly more coherent chronologically and topically and were more consistent than subsequently elicited accounts of events. This may be due to children's lack of memory to remember specific details about multiple or chronic events (Fivush et al., 2003), or it is possible that interviewers ask less	interviewers being attuned to children who need the most help in producing coherent narratives. 3. Ultimately, interviewers should be aware of the

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		were also played as the direct examinations at trial; And involved children between the ages of 7–16 years testifying as alleged victims of	in England involving children under the age of 16 who were alleged victims of sexual abuse. 80 of the provided cases (out of 222) met the necessary		interviewer emotional and cognitive support will be associated with increased narrative coherence;	questions about subsequent events. Furthermore, because the prompts typically used in forensic interviews to elicit the first account pull for episodes (e.g. 'Tell me everything that happened the last time'), children may describe an episodic event, and subsequent elicited events may constitute script accounts. As well, children's memories for the first elicited event may be stronger, which is why they chose to disclose that incident first. Because of the difference in coherence between first and subsequent events, it is important that future researchers examine incidents individually and avoid collapsing them into a single composite 'incident' score.	factors that affect children's narrative coherence so they can help children provide testimonies of the highest quality.

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		sexual abuse; All interviews included in the sample were conducted by police officers using the ABE interviewi	research criteria. Narrative Coherence Coding Scheme (NaCCS); Made up of three dimensions: chronology, context, and		2) Increased child engagement will be associated with increased narrative coherence; 3) Older children's accounts	5. Practically, interviewers may benefit from having breaks in between incidents, or multiple sessions, if necessary, to ensure that all elicited accounts are coherent. In fact, previous work has specifically shown that children tend to provide more complete and coherent narratives during forensic interviews when their accounts are elicited in multiple interviews (Szojka et al., 2017).	4. Though narrative coherence might differ in forensic interviews from narratives where children are given the option to freely reminisce, it is

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		ng protocol.	theme – and each of these dimensions would have a different developmental course. Chronology relates to the timeline of the event; context refers to important		will be associated with increased narrative coherence; 4) Episodic accounts will be associated with increased narrative	6. As was hypothesized, script accounts were also associated with decreased consistency and chronology scores, though not theme. Previous work has established that children's memories for repeated events differ qualitatively from memories for single, episodic events (Brubacher et al., 2011b; Roberts & Powell, 2001). One might expect script accounts of abuse to be more coherent than episodic accounts because experiencing repeated events tends to strengthen children's memories, making their general accounts of these events more accurate and consistent (Powell et al., 1999). However, when details change across events (e.g. order, location,	still valuable to consider the coherence of the child's narrative as it is used as evidence. This emphasizes the importance of how the interviewer may be able to improve children's

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			details regarding the time & location of the event; and theme means the ability to maintain and expand upon the main topic of the event, while describing it		coherence compared to script accounts. 5) Children's first elicited events will be associated with	date/time), children will be more likely to confuse these details and may struggle to identify and subsequently describe in which event specific details differed. Since repeated events may not occur in the same sequence every time, children's poor temporal understanding might contribute to source confusion particularly in relation to chronology. 7. Additionally, the finding that theme did not differ between episodic and script accounts, while consistency and chronology did, further supports Reese and colleague's (2011) notion that	narrative coherence during forensic interviews through providing children the opportunity to provide free narratives, asking open ended questions, and

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			with a subjective tone.		increased narrative coherence compared to subsequent events.	coherence is best captured by examining different dimensions separately. Research has shown that though children are more reluctant to disclose specific details about episodic events, they are able to recall and report these details even when they have already established scripts. This is crucial because courts may require specific details about incidents to charge the perpetrator. Brubacher and colleagues (2011b) showed that practice recounting specific events, rather than script, improved children's ability to report details. This might, in turn, improve children's narrative coherence when discussing more than one event.	allowing children to provide chronological accounts by framing the questions as such.

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						8. Results also indicated that children's increased level of engagement was significantly associated with increased NaCCS scores. Previous work has found that children who are less reluctant provide more details, and more details may allow children the opportunity to have more coherent narratives. Children who are more willing and engaged in the interview also tend to elicit more positive responses from interviewers, which could then prompt the interviewer to guide them in a cognitively and emotionally supportive way. Because these interviews also serve as the	

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						children's courtroom evidence, interviewers must try to engage children during the entirety of their interviews, since jurors often believe coherent accounts to be more accurate. 9. Contrary to expectations, age was not associated with coherence. Previous work has shown that young children have difficulty understanding and implementing temporal concepts, which might specifically impact their ability to communicate a timeline of events to a listener. However, because the current sample included a majority of school-aged children and	

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						adolescents (i.e. 7-years-old and older), it is likely that the youngest children who were not in the current sample struggle the most with relaying coherent accounts. Though older children typically provide lengthier and more detailed narratives, results in the current study encouragingly suggest that even younger children are equally able to produce a narrative that is both consistent and expands upon the main topic of the event. 10. Lastly, results showed that emotional support was associated with the chronology dimension of	

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						narrative coherence, so that increased emotional support was associated with an increase in chronology. Cognitive support, though, did not account for any variance in the models examining children's narrative coherence. However, we believe this may be due to a sampling issue rather than an absence of association, as research consistently demonstrates that increased emotional and cognitive support increase engagement, productivity, and coherence. It is important to note that the mean score of cognitive support in the current sample is below 'pretty cognitively unsupportive' (M = 1.91 SD = 0.84). Previous work has found that providing cognitive	

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						support encourages children to provide more detailed and logical statements about alleged abuse. Across the sample, children may have been able to provide more coherent accounts had they been questioned in accordance with best practice guidelines and with more cognitive support. Furthermore, the mean score of total support (M = 4.24, SD = 1.12) reflected just below 'neutral levels supportive' behaviors from the interviewers, and thus it is possible limited effects were seen because all interviewers were providing children with unideal amounts of emotional support. Additionally, coders were only able to compare emotional supportiveness to	

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						interviews within the current sample, so it is likely that different interviewing protocols may train interviewers to use support differently, resulting in varying levels of supportiveness and success in different samples.	
42. Hoedeman et al. **2021**	148 hospitals from 29 European countries.	N= 185 Estimated overall response rate from	Non-Experimental Quantitative	Nil	To evaluate the different strategies & hospital policies	1. Improving recognition of child maltreatment followed by interventions to stop the maltreatment and provide aid and therapy will prevent children from further harm and reduce the negative impact of child maltreatment on society. Screening for signals of child maltreatment, training of hospital staff and the	1. Child maltreatment is a serious public health problem and socioeconomic burden.

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	September 2018 - January 2019 Responses from EDs in non-European countries were excluded.	EUSEM & REPEM taken together ranged from 33.8% (148/438) to 54.6% (148/271). 5–10 emergency	Survey Explorative; Descriptive All questions of the survey were developed by a multidisciplinary team,		for recognition of child maltreatment in EDs in Europe, and to define areas of improvement to detect child	availability of a hospital policy regarding child maltreatment are hereby essential. 2. Despite the availability of international guidelines, this survey shows that most hospitals (51.9%) in Europe are not sufficiently equipped to recognize child maltreatment in the ED. 3. Paediatric EDs seem to pay substantially more attention to the recognition of child maltreatment than do mixed/adult EDs, hence complying best with the NICE guideline recommendations.	2. This burden includes health care costs, child welfare costs, criminal justice costs, loss of productivity, special education costs and intangible

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		physicians in different general hospitals; 5–10 paediatricians/ paediatric emergency physicians working in different	committed to effectively tackle child maltreatment and domestic violence. The survey is based on a questionnaire used by the Dutch Health Inspectorate.		maltreatment. We aimed to answer the following research questions: 1. What methods	Similarly, university/teaching hospitals seem better equipped with respect to the recognition of child maltreatment using the strategies mentioned in comparison to general hospitals. 4. A quarter of the responding hospitals used a screening tool for signalling child maltreatment. Most of the responding hospitals used a local non-validated tool. It is unknown whether they are unaware of the availability of validated screening tools or whether they prefer a local non-validated tool. Louwers et al. [19] showed that the detection rate of suspected child	costs such as pain and suffering experienced by the affected individual and surrounding community. 3. In Europe, 117 million children under 18 years of

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		EDs; EuSEN members; EUSEM congress in 2018, visitors were asked to	Focused on methods used to recognize child maltreatment by addressing child and/or parental risk factors; and it addresses the presence of a hospital policy		for recognition of child maltreatment based on child characteristics are currently used in EDs in Europe? 2. What methods	maltreatment in children who were screened with the validated ESCAPE instrument was higher than that of children who were not screened with this tool. The performance of local tools is unknown. It might be that the use of a screening tool for every child that visits the ED reminds and empowers ED staff to critically evaluate each child visiting the ED and to consider child maltreatment even when the reason for the ED visit is or seems to be unrelated to child maltreatment.	age are affected by child maltreatment. The average economic and social costs of child maltreatment in Europe were calculated to be

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		fill out the survey; Through the following Organizations: The European Society for Emergency	concerning child maltreatment. Several topics are questioned: 1. The use of screening tools, protocols and procedures; 2. Existence of training		are used for the recognition of parental risk factors related to child maltreatment in adult patients taking care	5. Nevertheless, we must keep in mind that a screening tool only cannot replace training of hospital staff in the recognition of child maltreatment. Training including child and parental characteristics was reported by 43.8% and 25.8%, respectively, of the respondents in contrast to more than two-thirds (71.9%) of the respondents indicating the need for (more) training. Training and/or e-learning exercises increase the confidence and knowledge of possible signs of child maltreatment and are necessary for adequately detecting and subsequently stopping child maltreatment [30]. Therefore, training should entail recognition of	approximately $752 billion. 4. In order to decrease the number of victims of child maltreatment, recognition of child maltreatment could be

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		Nursing (EuSEN); Research in European Paediatric Emergency Medicine (REPEM);	programmes; 3. Presence of a local child maltreatment team and a child maltreatment policy officer; 4. Registration and monitoring of suspected cases &		of (unborn) children? 3. What standard procedures for recognition of child maltreatment are in place in the	child maltreatment based on signs or symptoms in children and identification of risk factors in parents, such as severe psychiatric problems, substance abuse or domestic violence. Training should additionally address necessary actions to be undertaken when suspicion of child maltreatment is raised, and how to communicate with children and their parents/carers when child maltreatment is suspected.	improved by implementation of a child maltreatment policy and should be mandatory in all hospitals in Europe. 5. A child maltreatment policy should

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		The European Society for Emergency Medicine (EUSEM); And Augeo Foundation	collaboration with child protective services. To interpret & compare the results from the survey we developed a score for the use of tools and strategies		hospital policies of EDs in Europe?	6. The results of this survey show that there is less awareness of the recognition of parental characteristics than of child characteristics at EDs in Europe. It is known that witnessing violence, substance abuse or mental illness of any household member during childhood increases the risk for child maltreatment. More than half of the respondents stated that they paid attention to parental risk factors in adult patients admitted to the ED, but most did not have any guidelines or any training regarding parental risk factors. Both screening for child characteristics in paediatric patients and assessing parental risk factors in	include a standard screening procedure and training across all hospital settings as well as the availability of a child maltreatment officer and/or team. This would support

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		representatives	on the recognition of child maltreatment by European hospitals based on the recommendations of the NICE guideline 'Child abuse and neglect'.			adult patients caring for children are crucial for the recognition of child maltreatment. 7. Our results show that most European hospitals have no standard procedures or strategies, such as a child maltreatment policy officer, child maltreatment team, registering system, regular meetings with child protective services, e-learning exercises and training programmes, in place to facilitate the recognition of child maltreatment nor to monitor or refer when necessary.	health professionals in recognizing child maltreatment, enhance adequate actions, follow-up and therapy for children and their families, and subsequently

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			The score included 13 items (ranging from 0–2 points per item): 4 questions concerning child characteristics; 4 questions concerning			8. In previous research, physicians stated that even though a protocol for suspected child maltreatment was present, the majority did not know where to find it or how to use it in practice. In our study, some respondents working at the same hospital responded differently to questions regarding the availability of screening tools, training and policies concerning child maltreatment recognition. This indicates that often it is unclear what child maltreatment policy is present.	reduce further damage to these children, future generations and society. 6. This study shows that there is much to gain in the recognition of child

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			parental characteristics; and 5 questions concerning hospital policy.			9. Our results indicate that EDs with a hospital policy on child maltreatment, score better on the recognition of both child and parental characteristics in comparison to EDs that scored low on hospital policy. In general, people working in an environment with protocols and structured processes are less likely to make medical errors and do harm. It is plausible that having a child maltreatment policy with the availability of screening tools, protocols, training and a child maltreatment team and/or officer is more likely to result in increased awareness and hence increased recognition of child maltreatment by hospital staff.	maltreatment in EDs in Europe. The question is not only can we do more but also should we not do more?

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						10. The strength of our study is that this is the first informative overview of strategies used to recognize child maltreatment by EDs in Europe in a large sample of 148 hospitals in 29 countries, and has pointed out areas of improvement.	
43. McLean et al.	Ten SANE programs, in four	Sample N=164	Non-experimental Quantitative	Nil	We evaluated the severity	1. The results of this study, indicate that the majority of sexual assault survivors experience moderate or severe pain during the early aftermath of assault.	1. The education of SANE nurses and others

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2012	states in the USA	Enrolled N= 83 Women sexual assault survivors 18 years or older, presenting for care within 48 hours of	Survey Exploratory Perform a brief questionnaire evaluation assessing current pain intensity in each of eight body regions.		and distribution of pain symptoms in the early aftermath of SA among women receiving sexual assault nurse	2. In more than half of women sexual assault survivors, pain was present in 4 or more body regions and was rated as severe. 3. Less than one third of women with severe pain received any pain medication. 4. Among women conscious throughout assault, the majority of areas of pain were not in body areas in which women reported direct trauma. 5. These data, together with case history data such as the two described above, suggest that pain in the aftermath of sexual assault may not simply be an ancillary experience resulting from co-occurring physical trauma or struggle, but	who provide care to sexual assault survivors in the early aftermath of assault should emphasize that moderate or severe pain is common after sexual assault, and should provide

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		sexual assault.			examiner (SANE) care, and the treatment of pain by SANE nurses.	(like psychological symptoms) may also be a neurobiological sequela of the stress experience itself.	specific recommendations for pain evaluation and treatment. 2. This education should include recommendations that both an NSAID and an opioid pain medication be offered to

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							patients with severe pain.
44. Kaltiso et al. **2021**	120-bed ED in an urban safety-net hospital. January 21 to December 31, 2019	N=26,974 Adult patients 18 years and older were screened based on high-risk chief complaints, "red flag" risk factors, or	Non-experimental Quantitative Instrument development study	Implementation of an original 11-item human trafficking screening tool.	Aim is to retrospectively assess a human trafficking screening tool implemented in an urban ED and evaluate	1. The study demonstrated that a short screening tool can successfully be incorporated into ED standard of care, can identify vulnerable adults, and can lead to concrete benefits for trafficked patients. Thirty-seven sex-trafficked patients were identified through screening, and eight were discharged to a safe house. 2. Five patients were admitted to the hospital for the following diagnoses— suicide attempt, suicidal ideation, psychosis, or social placement.	1. Our study confirms that implementation of a HT screening tool into routine practice in a busy metropolitan ED may be successfully accomplished

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		provider gestalt. Patients were screened if they were forthcoming about their trafficking status or experiences; if the provider was concerned about coercion	Retrospective observational study conducted at an urban adult ED after the implementation of an original 11-item human trafficking screening tool.		the feasibility of the tool as a component of standard emergency care.	Identification of HT status provided important information to mental health providers caring for these patients. 3. The most common chief complaint among patients with a likely HT status were psychiatric or drug-related, although this was not a priority indication for screening. 4. Ten patients declined help, one of whom stated that she did not want to leave her situation.	and yield positive benefits. 2. Critical to success is extensive education of staff, regular data review, and supportive accommodations in

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		or patient safety; if the patient's companion demonstrated "red flag" behaviors such as rushing to receive services and leave, inappropriately speaking for the patient, holding a patient's	All persons who screened positive were offered the option of speaking with a social worker. The social worker then completed a semistructured			5. Eight questions were significantly associated with a likely status of sex trafficking, and a regularized regression model was able to accurately identify likely sex trafficking status with just seven of the screening questions. 6. Our study found no significant difference between the number of identified trafficked patients per month during or after the Super Bowl. Regardless, it is clear that sex trafficking exists throughout the year, and patients with an experience of sex trafficking can present to the ED at any time.	department operations. 3. Future studies are needed to externally validate the screening tool for use in the ED and potentially in other health care settings.

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		identification or documentation, or refusing to allow the patient to speak with a staff member in private.	interview to further evaluate risk and determine whether any information obtained during the visit fulfilled the TVPA definition of adult sex or labor HT.			7. Of the 189 positive screens, 147 patients did not disclose a status of trafficking. This is a high false-positive rate, however, given the potential benefit of identification of a patient suffering exploitation, the benefit outweighs the expended effort.	

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45. Gavril et al. **2011**	CHRISTUS Santa Rosa Children's Hospital Emergency Department, San Antonio, Texas or the regional child	N= 727 Consecutive sample of pediatric patients with initial and follow-up sexual abuse	Non-experimental Quantitative Retrospective record review Explorative; Descriptive A retrospective chart review of patients with	Nil	The purpose of this study was to determine whether follow-up examinations of suspected victims of child sexual abuse	1. Overall, the follow-up examination of suspected child victims of sexual abuse changed the interpretation of trauma likelihood in 129 (17.7%) patients and identified STIs in 47 (6.5%) patients, affecting 23.2% of the study population. 2. Almost all unknown examination 1 findings were clarified on follow-up examination. 3. 26.5% of the patients who were uncooperative for examination 1 had examination 2 findings that changed the interpretation of trauma likelihood. 4. In this study, less examiner experience (,100 examinations performed) for examination 1 was	1. Results of this study strongly support follow-up sexual abuse examinations for adolescent and sexually active females, uncooperative patients, females who disclose

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	advocacy center (CAC) Between July 1, 2004, and December 31, 2009	examinations	initial and followup examinations (examinations 1 & 2, respectively) over a 5-year study period was conducted. Patient and abuse characteristics, interval between examinations and abuse, and examiner experience		influence medical diagnosis or treatment	associated with a change in trauma assessment on examination 2, suggesting that follow-up examinations by more experienced examiners is a reasonable approach when the initial examination is conducted by less experienced examiners. 5. Most changes in the assessment of examination findings resulted in a decrease in likelihood of trauma. Most of these changes were unknown findings that were later clarified as normal, or initially diagnosed healed hymenal transections that were found to be notches (a nonspecific examination) or not confirmed (a normal examination). 6. An increase in likelihood of trauma on examination 2 was associated with patients who	genital 2 genital contact with the perpetrator, cases of DFSA, and those patients with initial unknown or positive nonacute findings.

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			levels were collected. Examination findings and test results for sexually transmitted infections (STIs) were compared for examinations 1 and 2.			were female, adolescent, or uncooperative with examination 1. 7. A higher proportion of patients were cooperative with examination 2, perhaps due to decreased anxiety or pain, offering better assessment of examination findings. 8. STIs were detected in a significant proportion of patients during both examination 1 and examination 2. In this study, human papilloma virus infection was the most common STI diagnosed on examination 2. STIs identified on examination 2 were significantly associated with a positive finding on examination 1.	2. Although the diagnosis and treatment of other patient groups were not as likely to be affected by a follow-up examination, additional benefits, such as a more complete

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						Seven patients with gonorrhea or chlamydia on examination 2 received prophylaxis for these infections during examination 1. 9. These results suggest an important role for follow-up examinations in confirming treatment and completing the assessment for STIs resulting from sexual assault.	assessment for STIs, reassurance of injury healing and physical integrity, and follow-up of emotional recovery, are significant advantages that must be considered for each patient.

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							3. Follow-up examinations for pediatric patients undergoing sexual abuse assessments influenced the diagnosis of trauma and detection of STIs at a rate

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							comparable to the detection of additional fractures on follow-up skeletal survey in a suspected victim of physical abuse.
46. Nittis et al.	Forensic &	N= 554	Non-experimental	Nil	To compare	1. The data presented clearly shows that oral rinses were a superior internal mouth collection	1. The direct comparison of

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2016	Analytical Science Service- FASS New South Wales 1st January 2010 to 31st December 2015	Oral swabs submitted to forensic lab in connection with the investigation of oral sexual assault.	Quantitative Retrospective record review Explorative; Descriptive		the efficacy of oral swab vs oral rinse and peri-oral swab as methods of recovering sperm and offender DNA.	method for sperm recovery when compared to oral swabs. 2. The DNA success rate for oral rinses is also higher but the difference between both methods appears less stark. 3. The assertion that the presence of sperm is the key indicative factor in the successful recovery of an evidential DNA profile in internal oral samples, was also supported by the data. DNA success rates for both oral swabs and rinses had a roughly 10 fold improvement when sperm were detected.	the two internal oral collection methods further highlights the superiority of the oral rinse as a method to collect semen from the oral cavity.

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			Retrospective study of oral sexual assault cases submitted to the NSW state forensic laboratory (Forensic & Analytical Science Service-FASS).			4. When both oral swab and oral rinse were performed for the same case: Sperm was detected only in the swab in 2 occasions, where sperm was detected on the oral rinse, but not the oral swab on eight occasions. 5. Further analysis of the data showed that chances of recovery of sperm was more likely if the specimen was taken closer to the time of the alleged assault. No oral or peri-oral samples collected from living people after 24 h recovered sperm or produced a successful DNA profile.	2. In cases of penile oral assault, oral rinses should be collected from a complainant up to 12h post assault when there is a suspicion of penile oral assault having occurred. Oral

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							rinses may be collected later than 12 hr and up to 24 h post assault in those cases where there is a clear recollection of ejaculation into the mouth or where a penis has been put into mouth

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							following ejaculation elsewhere (e.g. the vagina) or when there is a clear recollection of penile oral penetration, but the complainant is unsure whether or not

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							ejaculation has taken place. 3. The recovery rate of sperm and DNA from peri-oral swabs in this study is slightly higher than the other oral collection

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							methods. Even so, internal oral samples (oral rinses and oral swabs) may be seen as preferential due to the evidentiary implications of finding sperm inside the mouth.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
							4. With these considerations in mind, examiners in NSW have been advised to collect both an oral rinse and a peri-oral swab in oral assault cases.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
47. Miller et al. **2015**	A local hospital over a three year period.	N= 164 Women who participated in a sexual assault examination within 72 hours of their victimizati	Experimental Quantitative Pre/Post intervention assessment Before beginning the	Standard Care SC involved meeting with a rape crisis advocate. The advocate provided information about	To assess the efficacy of the psycho-education only component of an information video with an independe	1. Women allocated to the Video Intervention group reported fewer state anxiety symptoms 2 weeks and 2 months after their sexual assault, regardless of previous assault history. 2. Contrary to the hypothesis and previous research regarding prior experiences of sexual assault, women who reported no previous sexual assault history and were allocated to the video intervention reported significantly fewer posttraumatic stress symptoms at the two-week follow-up compared to the other groups. 3. STAI scores decreased over time for both groups.	Although additional research is needed, this study lends support to the promising findings of previous studies for the use of a brief Video Intervention that can be

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
		on via the SANE program at a local hospital. Participants were English speaking, 18 years of age or older, and female.	study, participants were randomized into one of two conditions, SC or VI. Before the examination, participants completed a	what would happen during the examination and about services available in the community.	nt research group.		used in emergency room settings or at the time of a forensic sexual assault examination.

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			pre-examination survey, including the SUDs, STAI, and PSS-SR. The SANE nurse on duty provided verbal information about the examination to	Video Intervention This video focused on education & instruction of empirically effective coping strategies			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			the survivor & performed a forensic medicolegal examination. Participants completed a post-examination survey with the SUDs and STAI, marking the conclusion	as well as modelling of such strategies. The video described normal physiological reactions that may occur after sexual assault.			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
			of the initial assessment. The participants completed mental health assessments 2 weeks and 2 months after the sexual assault nurse examination.	The video provided rationale and instructions for self-directed in-vivo exposure to sexual-assault-related cues (e.g., darkness).			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				The video showed methods of using repeated exposure to reduce anxiety in typical sexual-assault-related cue situations.			

Author & Year	Setting	Sample	Design	Intervention	Aim	Key Findings	Conclusions/ Recommendations
				(e.g., sleeping with the light off at night).			

ANNEXURE 5: DATA APPRAISAL TABLE

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
1. Kaplan et al. **2021** **Comprehensive Pediatric Acute**	Non-Experimental Quantitative Retrospective medical record review.	Nil	Child Protection Clinic Outpatient follow-up protocol	1. Retrospective study design - Relied on the data recorded by providers, ay include limited or incomplete information. Patient charts were omitted owing to lack of documentation to determine inclusion/ exclusion. This would not be expected to alter the outcomes significantly even if all 7 charts met the inclusion criteria.	9/10 90%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Sexual Assault Protocol- from Emergency Department to Outpatient Follow-up				2. Generalizability/ Narrow Context – Unable to generalize our findings to other geographic areas. The sampling was from a single institution in one state, which is the sole children's hospital and child protection center in the state. Many other states have several hospitals and several child protection centers, and therefore, follow-up appointments may be less centralized.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				3. Limited Scope - Excluded patients where both parties were younger than 14 years old in this study - limiting a population routinely evaluated in our child protection clinic. However, same-aged peer sexual contact is a distinct population of patients that we think should be studied separately. 4. Limited Information/ Record review - No documentation of the phone call made to patients within 72 hours of their evaluation in ED - this			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				component of our protocol could not be assessed. The phone call serves as a reminder of the outpatient follow-up appointment, addresses access to medication (HIV PEP) and assesses compliance/adverse effects of medication, physical symptoms, and psychological well-being after the acute presentation. In our experience, communicating directly with patients and families almost immediately after the sexual assault evaluation in the ED is a			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				helpful component in ensuring follow-up at our institution.			
2. Gilmore et al **2022**	Non-Experimental Quantitative	Nil	Nil	1. Generalizability/ Narrow Context - Only generalizable to this one context. Necessary to replicate these findings in similar samples in order to determine whether these correlates are consistent across different populations, geographic regions, and nations.	10/10 100%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Medications at the Emergency Department After Recent Rape	Retrospective Medical Records Review Cohort study			2. Generalizability/ Narrow Context - In particular, medications prescribed in the emergency department may vary from those prescribed when the SAMFE is conducted in another setting (e.g., advocacy center). 3. Limited Scope - Study targets a narrow timeframe in the immediate aftermath of a sexual assault. 3% of the sample were presenting for their second SAMFE. Possible that prescriptions received might change			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				over time or following multiple victimizations. Study did not interrogate the effect of time or multiple victimizations. 5. Limited Information/ Record review - Data does not allow us to characterize pre-existing mental or physical health problems that might have influenced prescriptions issued or not issued.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				6. Limited Information/ Record review - Did not include information about patients requesting or declining medications, or rationale of prescribers.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
-3. Silva-Nash **2021** **Standardizing HIV post-**	Quasi Experimental Quantitative Pre-Post interventional study	Implementation of an nPEP programme: 1. Order set 2. Collaboration	Nil	1. Retrospective study design - probably resulted in incomplete ascertainment of all records. Having to rely on less accessible sexual assault forensic examination records added complexity. However, we found that most of the clinical, laboratory and prescription data were available and reliable.	9/10 90%	2	Good Target sample size not reached

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
exposure prophylaxis in the emergency department following sexual assault		w/ ED providers, SANE, & HIV pharmacist 3. Initial nPEP dose given in ED 4. On-site speciality pharmacy.		2. Limited information - Rates of verification of dispensed ART prescriptions are probably underestimated - it is difficult to know where patients could have filled their prescriptions. Review of insurance prescription claims was performed to best capture these data. 3. Small sample size and limited scope - Largely predominant female sample. It is unlikely that these elements would have changed patient time-			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		- 28-day nPEP - Medication counselling - Patient assistance programmes 5. ED provide 3-day nPEP prescription overnight & on weekends.		sensitive eligibility or prescription appropriateness. 4. Replicability - Variation in available institution-specific resources makes reproducing this identical programme difficult. However, primary components of this programme are quite generalizable. Implementation of an EMR-based nPEP order set is a sustainable and reliable method to improve treatment for patients presenting following sexual assault			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		6. Tele-health visit with HIV pharmacist on day 5. 7. In-clinic visit with ID physician day 28.		and this can be replicated within other EDs. 5. Unexpected result - Rates of confirmed medication dispensation and follow-up remained low. Further studies are needed to investigate barriers to medication adherence and completion of follow-up to better address gaps in post-sexual assault care.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
4. Scannell & Berger **2018**	Quasi Experimental Quantitative Pre-Post interventional study	1. Enhance the educational preparation of emergency nurses with a simulation course. 2. Development of a checklist called the	Nil	Not Discussed.	7/10 70%	2	Good Sample Size not recorded. Record review methodology not discussed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Provider Sexual Assault Checklist (P-SAC).					Limitations not discussed.
5. Saadatzadeh et al.	Quasi Experimental Quantitative	The IN-STEP project (Integrating nPEP after Sexual Trauma	Nil	1. Replicability/ Narrow Context - that elements of our project's success may not be as easy to replicate in some settings. These elements include the involvement of a consistent,	7/11 64%	2	Good Data focused

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2021	Pre-Post interventional study	in Emergency Practice): 1. Training of ED providers. 2. HIV testing in the ED.		multidisciplinary leadership team; support for the implementation of both a point-of-care HIV screening assay and a 24/7 connection-to-care line; and the availability of local grant funding to catalyze the team's efforts. 2. Replicability/ Narrow Context - cannot directly compare the outcomes of IN-STEP to a similar initiative in which grant-supported medications were not available, and we realize that similar funding may not be available			on iterative QI process. Does not quantify improvements to PEP prescription and screening.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		3. Provision of nPEP medications. 4. Continuity of care between the ED and follow-up sites.		at all other sites. Other mechanisms of cost support might be explored, including other grants, medication assistance programs, or public health-based funding. Furthermore, in settings where medication support is not possible, efforts to improve access to care through screening and connection to care might still be implemented. 3. Cross Sectional Study Design - Improvements described here were			Discussion not fully consistent with results.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				successfully implemented, we cannot yet assess the sustained impact of these efforts over the years to come or estimate the net value of these improvements to patients, providers, or the institution. 4. Limited Scope - We secured grant funding for a specific nPEP indication. Our efforts now turn to identifying ways to sustain and expand improved access to nPEP medications. Overall, the information and experience			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				obtained from IN-STEP's successful implementation have supported discussions about expanding the program.			
6. Gilmore et al. **2021** **Post-Sexual Assault**	Experimental Random Controlled Trial (RCT) Quantitative	Prevention of Post-Rape Stress [PPRS] Pleasant Imagery	Nil	1. Consistency/ Reliability - Not all the participants got the same information within the same intervention groups. Most (82%) participants received a brief version of the videos post-exam compared to the full video before the exam. It is possible that there were unforeseen, and therefore, not assessed, differences between video types in outcomes.	11/14 79%	1	Good Target sample size not reached.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Mental Health: A Randomized Clinical Trial of a Video-Based Intervention	Longitudinal	and Relaxation Instruction [PIRI] Treatment as usual [TAU]		Future work should include a thorough pilot stage that would allow for clinical flow problems to be detected prior to beginning the randomized clinical trial and would allow for one version of the video rather than needing to change due to clinical flow disruptions in the middle of the trial. Future research should include the same instructions for each video, test the same version of the videos for every participant.			Intervention differed for some patients: longer vs shorter version of PPRS.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				2. Validity - Prior SA and DAFR were assessed using one-item measures due to time limitations. Future research should include a more comprehensive assessment of prior SA and DAFR. 3. Generalizability/ Narrow Sample - We did not assess for sexual and gender minority status, and we excluded individuals who did not speak English. Lesbian, gay, bisexual, transgender, queer, intersex and asexual and/or ally (LGBTQIA+)			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				communities as well as those who do not speak English may be at particular risk for SA, have less access to medical care, and experience discrimination at higher levels than other populations, and therefore, it would be important for future work to test the effectiveness of prevention efforts among these populations. 4. Sample Size - Sample size was small. The study had to discontinue prior to recruiting the entire sample			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				needed for adequate power (projected N = 566) due to years spent recruiting; therefore, the sample may not be adequately powered to detect all significant findings. Future work should include national recruitment to ensure adequate sample size for this specialized, at-risk population. 5. Sample Size/ Attrition - Many of the participants that were enrolled in the study were lost to follow-up, and although the analyses accounted for			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				these individuals, it is possible that those who were lost to follow-up differed in severity than those who completed all follow-up assessments.			
7. Walsh et. al. **2019**	Experimental Random Controlled Trial (RCT) Quantitative	Prevention of Post-Rape Stress [PPRS] Pleasant Imagery	Nil	1. Small Sample Size- Although it is a strength that the current study compared PPRS to both PIRI and TAU, the sample size for each treatment condition was small and results should be replicated in larger samples.	11/14 79%	1	Good Target sample size not reached.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Post-sexual assault cigarette smoking; Findings from a randomized clinical trial of a video-based intervention	Longitudinal	and Relaxation Instruction [PIRI] Treatment as usual [TAU]		2. Recall Bias - Smoking was not assessed at the ED, study focused on participants at follow-up. Findings may have differed if analyses focused on all women enrolled at the ED. Assessing pre-rape smoking retrospectively at T1 may have resulted in reports of smoking that were biased by recall or by the effects of the treatment. 3. Lack of power of study - Despite established links between PTSD and			Intervention differed for some patients: longer vs shorter version of PPRS.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				smoking, the current study was underpowered to examine whether reductions in PTSD symptoms explained reductions in smoking. 4. Generalizability/ Narrow Sample - Study only included women so results may not generalize to men or transgender individuals. Similarly, although the demographics of the current sample are consistent with epidemiologic studies on SA victims presenting to the ED, our sample was			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				relatively low income, unemployed, and single, making generalizability of the findings to other victims unclear. 5. Generalizability/ Narrow Sample - The exclusion criteria (e.g., non-English speaking or presenting with serious injuries, psychological distress, acute intoxication) may have biased the sample towards including healthier individuals and impacted the results.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				6. Limited Scope - Current study did not assess other types of tobacco use or vaping, which is on the rise among adolescents and young adults. Future studies should examine whether SA is similarly associated with these behavior.			
8. Gilles et al.	Quasi Experimental	1. Computerized chart.	Nil	1. Retrospective Review Study Design - The comparison was with a historical group, which is not ideal, but a randomized study would not be ethically acceptable.	6/10 60%	2	Good

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2019	Quantitative Pre-Post interventional study Retrospective record review. (Pre-test done in prev.	Based CDC guidelines. 2. Once a year, one-hour course given by an expert in the field. Focused on protocol & use of		2. Cross Section Study Design - Another limitation is the absence of long-term outcomes (such as persistent STDs, the incidence of HIV/AIDS, the long term incidence of trauma, or other psychological changes). 3. Generalizability/ Narrow Context - May not be valid to generalize the conclusions to countries with very different health structures and			Do not present results in a table. Results do not inform most of their conclusions.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	article, same authors in same setting).	computerized chart.		approaches to survivors of sexual violence. 3. Record review - Although the computerized chart was specifically created for survivors of sexual violence and was filled out prospectively, there were still some missing data. 4. Possible Confounding Variables - We cannot attribute improvements in			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				care to specific parts of the overall intervention. For instance, we did not attempt to determine the particular impact of the new computerized chart and protocol and that of the new educational sessions.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
9. Bragesjö et al. **2020**	Open trial design. Quasi Experimental Quantitative Exploratory	Prolonged exposure therapy	Posttraumatic Stress Disorder Checklist (PCL-5; Blevins et al., 2015), 20-item self-report measure, was used to assess PTSD symptoms after treatment period.	1. Methodology - lack of a control group to control for spontaneous fluctuations. Although the treated participants on average had a clinical meaningful decline in PTSD symptoms, this symptom reduction may as well be explained by natural recovery. However, it is important to stress that the aim of this study was merely to assess feasibility and delivery of the PE protocol. Future studies should consequently use a	7/10 70%	2	Low Very small sample size – explained as an explorato ry &

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				parallel group design to investigate efficacy of this treatment with extended time criteria. Another limitation in this study was that the independent assessor was not blinded to the aim study hypothesis and time-point, and thus, the mean scores on the CAPS-5 should be interpreted with caution. 3. Supervision/ Reliability of Treatment - We also used a "supervision on demand" approach			feasibility study. Results not presented in a table.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				which means that we did not make a systematic control for treatment fidelity of the intervention. Future research may want to investigate this issue in more detail and to investigate possible therapist drifts when providing early PE interventions. 4. Sample Size - Treated sample consisted of only a fraction (5.2%) of the total intake at the clinic during the study period. Patients to recruit also poses a major limitation. Comparing			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				these figures with previous studies on early interventions after trauma shows that a low rate of eligibility and recruitment is unfortunately common stressing the need for the field overall of finding ways around it. 5. Attrition - Twelve (6.2%) patients were finally asked to participate in the study, and two of these individuals declined participation. Of the 10 included participants, three participants dropped out of treatment.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				40% of the included participants did not show up at the 2-month follow-up assessment. 6. Generalizability/ Limited Scope - As much as 40% of the screened sample was excluded due to the time criteria of 72 h. One well-reported factor in the literature is that only a small proportion of rape victims seek help from mental health professionals in the early aftermath of trauma. One idea to increase scalability and to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				capture a larger population of rape victims would therefore be to extend the time criteria for early intervention and test if condensed PE is effective also after a longer time period since the traumatic event. 7. Limited Scope/ Resources - As much as 75% of the screened patients attended at the clinic after office hours and – as we did not have 24/7 coverage of clinical psychologists in this study – this may have led to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				unnecessary waiting times and exclusions for otherwise eligible participants. 5. Generalizability/ Narrow Sample - only provide care to female rape victims during the main execution phase of this study which unfortunately excluded an additional 10% of the screened sample. About 4–10% of all reported rapes include a male victim, and studies do indicate that male rape victims have higher			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				degree of distress, psychiatric symptoms, and psychiatric hospitalizations. 6. Generalizability/ Narrow Sample - About one-quarter of the screened sample was excluded due to the age criteria (at least 18 years old). Previous research indicate female adolescents as victims of sexual assault in a higher, disproportionately degree. Adolescents are also overall more vulnerable to subsequent mental			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				health problems after sexual assault. Consequently, developing early interventions for this particularly vulnerable group is imperative. 7. Generalizability/ Narrow Sample - Ten percent of the screened sample was not fluent in Swedish and therefore excluded. Translator assisted trauma focused CBT for PTSD has proven to be effective and one future scientific direction would be to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				investigate if this could work also in an early intervention approach.			
10. Hornor et al. **2011** **Pediatric sexual assault**	Quasi Experimental Quantitative Pre-Post interventional study	In the fall of 2005, a P-SANE program was established in this clinical site.	Nil	1. Pre-Post interventional study design - Given the differences in the population of children/adolescents seen by P-SANE versus PED physicians such as age of child victim and frequency of care provided within 24 hours after abuse/assault, the ability to provide a valid comparison between the two groups is limited.	9/10 90%	2	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
nurse examiner care; trace forensic evidence, ano-genital injury, and judicial outcomes	Retrospective record review.			2. Limited Scope - The quality indicators measured are somewhat narrow and do not comprehensively measure acute sexual abuse/assault care. Examples of other quality indicators not measured in this study include: time of care from ED admission to discharge, STI/pregnancy prophylaxis, referral to mental health counseling, and others. Future research comparing a more comprehensive set of quality indicators is needed.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				3. Confounding variables - Judicial outcomes and forensic evidence kit results may be influenced by a number of factors unrelated to the type of health care provider performing the examination/rape evidence kit collection, including quality of the forensic evidence analysis at the crime lab.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Although a statistically significant difference was noted when comparing P-SANE recognition vs. PED recognition and documentation of abnormal ano-genital exam findings and evaluation for pregnancy and STIs, the clinical significance of these differences may not exist. 5. Attrition/ Excluded data - Lastly, there may be a selection bias due to the number of forensic kits chosen by law enforcement for non-processing,			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				although we do not have any reason to believe that this potential bias would have been different during the pre-SANE support vs. post-implementation with P-SANEs support.			
11. Gilmore et al. **2019**	Experimental Random Controlled Trial (RCT)	Video-based intervention for reducing substance use and mental	Nil	1. New Developments in the field - Data collection for the current study was completed in 2013, which was prior to the influx of medication-assisted treatments available in the ED. Therefore, it is important for these	11/14 71%	1	Good Sample size small

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Prescription Opioid Misuse After a Recent Sexual Assault; A Randomized Clinical Trial of a Video Intervention	Quantitative Longitudinal	health symptoms. Prevention of Post-Rape Stress [PPRS] Pleasant Imagery and Relaxation Instruction [PIRI]		findings to be replicated in more recent samples, as the patterns may change if treatment for prescription opioid misuse is available in the ED nationwide. 2. Limited power of study - The assessment of prescription medication misuse was limited, and future work should include a more comprehensive assessment of prescription opioid use disorder.			Did not reach target sample size. Not enough statistical power for 3 months and 6 months

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Treatment as usual [TAU]		3. Generalizability/ Narrow Context - The current study was conducted in a metropolitan area and future research should examine prescription opioid misuse after a recent sexual assault in rural populations as well given the significant burden of the opioid epidemic in rural areas. 5. Sample size/ lack of statistical power - The larger study was a			follow up. Intervention differed for some patients: longer vs shorter version of PPRS.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				randomized clinical trial of a video intervention over three follow-up time points. However, the sample size was not large enough to assess the efficacy of the video intervention on prescription opioid misuse at the last two follow-up time points. Future research should examine the efficacy of the videos on post-sexual assault outcomes among a larger sample. 6. Generalizability/ Narrow Sample - Finally, this study only included girls			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				and women. Although this was necessary due to the limited research on post-sexual assault substance use and mental health sequelae among men and sexual/gender minority populations, future research should focus on understanding how post-sexual assault substance use is developed and maintained among genders other than those who identify as girls and women, and subsequently test the efficacy of these videos among men and sexual/gender minority populations.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
12. Choi et al. **2013**	Quasi-experimental Quantitative Observational	Single dose of levonorgestrel (1.5 mg) as emergency contraception.	N/A	1. Quasi- Experimental Design - It has no control group, is not a randomized prospective study. Naturally, EC must be provided for sexual assault patients, and therefore a control group is not possible among victims of sexual assault. 2. Attrition and sample size - Study has small numbers, and some patients did not return for follow-up	9/10 90%	2	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Retrospective record review			examinations Regarding the patients that did not return, if they were pregnant, they should have visited our center because induced abortion for personal reasons is illegal in South Korea and SA victims need to prepare DNA evidence for a legal response to their assailants. We therefor presumed that in these cases there were no pregnancies. 3. Limited Scope - There was particularly limited information on the last menstrual period or whether the patients had any sexual intercourse			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				after the SA. Levonorgestrel EC is associated with significant but transient changes in menstrual patterns in a significant proportion of users. Our study confirms (data not shown) that patients taking EC start menstruation earlier than expected. Some patients complained about intermenstrual bleeding within 7 days of receiving EC. Progestogen-only contraceptive methods (oral pills, implants, or progestin-only releasing intrauterine systems) are associated with frequent vaginal bleeding			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				disturbances and breakthrough bleeding.			
13. Walsh et al. **2021**	Experimental Random Controlled Trial (RCT) Quantitative	Prevention of Post Rape Stress video (PPRS) 17-minute video two components: First was	Suicidal ideation was assessed via single item on the Beck Depression Inventory-II (Beck et al., 1996): "I don't have any thoughts of killing myself (0).	1. Confounding factors - Severity and chronicity of participants' prior rape histories was not assessed in the current study but could have important implications for HPA axis reactivity and suicidal ideation and should be assessed in future studies.	11/13 77%	1	Good Sample size small Sample size of interventi

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
A secondary analysis of a brief video intervention on suicidal ideation among recent rape victims	Longitudinal	designed to prevent distress during the forensic medical exam. Second designed to prevent future emotional problems and substance abuse.	I have thoughts of killing myself, but I would not carry them out (1). I would like to kill myself (2). I would kill myself if I had the chance (3).	2. Validity – A single item from the BDI was used to measure current (past two-week) suicidal ideation at each follow-up. Despite good correspondence between such items and continuous scale measures (Desseilles et al., 2012), future studies should assess the severity and duration of suicidal behavior over a longer time frame. 3. Lack of Sensitivity of Measure - Additionally, the dependent variable			on much larger than control

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Non-Video (NV) Condition Standard care, which consisted of a SAMFE performed by a trained nurse and physician trained in the presence of a		reflected any suicidal ideation over the study follow-up, which may not have captured important changes in ideation over time and precluded an examination of possible mechanisms (e.g., reduced PTSD, depression, substance use) that might explain associations between the video and reductions in suicidal ideation. However, future work should aim to better understand whether lower suicidal ideation might be observed as a function of reductions in these			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		rape crisis counselor.		important correlates of suicidal ideation. 4. Confounding factors - Pre-rape suicidal ideation was not assessed in the current study, so it is unclear whether suicidal ideation increased in response to the current rape. 5. Generalizability/ Narrow Sample - It is unclear whether findings would generalize to non-female rape victims			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				or those who do not seek rape-related medical services.			
14. Campbell et al. **2012**	Quasi Experimental Quantitative Pre-Post interventional study	Implementation of SANE program in the community.	Nil	1. Small Sample Size - As noted previously, the sample size for this study was relatively small, which precluded testing interaction effects or estimating multilevel ordinal regression models that do not make the proportional odds assumption. Replication studies with larger sample sizes are sorely needed.	8/10 80%	2	Good Sample size small, as stated in limitations. Study needs

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Longitudinal Retrospective record review.			2. Confounding factors/ Validity - more critical limitation to consider is whether the observed increases in case processing—significant in spite of a small size—can be reasonably attributed to the implementation of the SANE program. Shadish et al. (2002) outlined multiple threats to internal validity in quasi-experimental designs, two of which are highly relevant in the context of this project: history and selection (and by extension, interactions between selection and history).			replication. No medical records for Pre-Intervention/ Comparison Group. Unable to compare

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				3. First, history threats include events that occur during the course of the study (other than the independent variable), which may affect the outcome (e.g., policy change, new programs/ resources become available). Although we cannot rule out all possible historical threats, we can account for the most significant events over time that may have affected case outcomes.			demographics and characteristics of the SA

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Confounding factors/ Validity - Selection threats refer to systematic differences between the intervention and comparison groups (other than whether they received the intervention). Experimental designs use random assignment to neutralize differences, but as noted previously, such designs have serious practical and ethical limitations in this context. Unfortunately, as we do not have victim, assault, and medical forensic evidence for the pre-SANE cases, it is impossible to rule out the possibility			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				of a selection threat and/or selection-by-history interaction effect. 5. Validity - As such, we cannot conclusively stipulate that the observed increases were caused by the implementation of the SANE program. However, we do contend that the pattern of findings in the quantitative analyses and key informant interviews is consistent with our hypothesis (see Campbell, Patterson, & Cabral, 2010 for more			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				details), and that taken together, these data suggest the observed effects can be reasonably attributed to the SANE program. 6. Generalizability/ Limited Context - The scope of this study was an in-depth examination of one SANE program, which is not a methodological limitation per se, but scope needs to be considered in context. There are more than 400 SANE programs in existence (and			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				more emerging rapidly), and therefore, it would be wholly inappropriate to generalize the findings of this one evaluation to the success of SANE programs as an intervention model. Only a handful of SANE programs have been studied in any depth and with varying methodological rigor, so it is unknown whether positive intervention effects are the exception or the norm.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
15. Ranney et al. **2015**	Non Experimental Quantitative Retrospective record review Descriptive	The Center for Assault Recovery-Eldoret (CARE) Established to provide timely, culturally sensitive treatment of Kenyan sexual assault survivors using	Nil	1. Methodology/ Reliability - Chart review was performed by a single reviewer. Although every effort was made to ensure proper training of reviewer, no formal assessment of interrater reliability was calculated. 2. Attrition - 40 charts were unable to be located, particularly from January-March 2008 (a time of significant political instability in Kenya). This could bias the measured success of the treatment protocol either towards or away from the null. May also result in	8/10 80%	3	Good Roughly 12% of records/ data set missing.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Exploratory/ Feasibility study	standardised evaluation/ treatment protocol.		significant underestimation of no. of patients. 3. Reliability – charting was better on the more seriously injured patients; this would most likely bias the protocol adherence rate towards the null, but the true effect is unknown. 4. Generalizability/ Narrow context - Finally, this study was conducted at a single hospital in western Kenya, so			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				the results may not be generalisable to other areas.			
16. Reynolds et al. **2022**	Non-experimental Quantitative Descriptive	Nil	Patient Education Materials Assessment Tool (PEMAT) Simple Measure of Gobbledygook (SMOG)	1. Generalizability/ Narrow sample - This study only used publicly available HIV PEP information documents and may not be reflective of all HIV PEP patient information within different healthcare settings and organizations.	10/12 83%	3	Good Sample size small N= 21

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Retrospective Record Review		Flesch-Kincaid readability test Paired *t*-test was used to compare the scores. A significance was assumed at an alpha value of 0.05.	2. Generalizability/ Narrow sample - Although documents from public healthcare centers located in Canada, England and Australia were included, there was none from the private sector in any of the countries. Therefore, it is difficult to determine if patient information documents differ within the private sector in these countries. 3. Generalizability/ Narrow sample - Only patient educational materials from official government health			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				departments and governmental organizations were included. Specific healthcare organizations may have patient information documents that have readability, understandability, and actionability levels that differ from the results found in this study. 4. Generalizability/ Narrow sample - Another limitation was the use of English-only patient education materials. The results may differ in			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				countries or areas where other languages are spoken. 5. Tool Utilized - The PEMAT tool has some limitations. Although the PEMAT tool scores on both understandability and actionability, it does not indicate level of accuracy. Information scored and understandable or actionable may be inaccurate. The PEMAT User's Guide recommends using readability assessments in			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				conjunction with, but not in substitution for, the PEMAT. 6. Tool Utilized - However, the readability tools have some additional limitations. Both readability tools, SMOG and Flesch-Kincaid, provide an estimate of level of education required to read a text document. Neither tool provides an indication of comprehension, nor do they allow for cultural context, language skills, and other socio-cultural variables.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
17. Walsh et al **2017** **Randomized Clinical**	Experimental Random Controlled Trial (RCT) Quantitative Longitudinal	Brief video intervention delivered to recent sexual assault (SA) victims to reduce alcohol and marijuana use at 3 points over the course of a 6-month follow-up.	Negative affect subscale of the Positive and Negative Affect Schedule (PANAS) Alcohol Use Disorders Identification Test (AUDIT)	1. Consistency/ Reliability - Pragmatic concerns arose that must be considered when interpreting the findings. For example, most participants received brief versions of the videos post examination that retained key content and were more feasible to administer in this context than the full-length videos shown preexamination. Although there were no significant differences in distress between groups who received the brief and long	12/15 80%	1	Good Sample size small Intervention differed for some patients:

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Trial Examining the Effect of Video-Based Prevention of Alcohol and Marijuana Use Among Recent Sexual Assault Victims		Prevention of Post-Rape Stress [PPRS] Pleasant Imagery and Relaxation Instruction [PIRI]	Drug Abuse Screening Test (DAST).	versions of the video, it may be important to note that all participants did not undergo the same procedure. 2. Small sample size - Although it is a strength that the current study compared PPRS to both PIRI and TAU, the number of participants assigned to each condition ranged from 48 to 54. This sample size is relatively small to detect interaction effects; therefore, findings should be interpreted cautiously, and larger			longer vs shorter version of PPRS. Interaction between treatment condition, prior SA history, and prior

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Treatment as usual [TAU]		studies should aim to replicate these findings. 3. Generalizability/ Narrow sample - Third, the current study only included women because women are more likely to experience SA compared to men; however, the results may not generalize to men or transgender individuals who are also at high risk of experiencing SA.			alcohol or marijuana use complicated, not clearly presented in the discussion.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Generalizability/ Narrow sample - Similarly, although the mean age and racial breakdown of the current sample are consistent with epidemiologic studies on rape victims presenting to the ED, our sample was relatively low income, unemployed, and single, and a majority had experienced a prior SA; therefore, it is unclear whether these findings would translate to rape victims with other demographic characteristics.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Generalizability/ Narrow sample - The exclusion criteria (e.g., not speaking English or presenting with serious injuries, psychological distress, acute intoxication) may have biased the sample toward including healthier individuals and impacted the results. 5. Confounding factors/ limited scope - the analyses did not take into account other mental health symptoms			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				including depression and posttraumatic stress symptoms. Future work with larger samples should examine substance use and mental health variables within the same model. 6. Limited data - A final limitation is that we included only participants who had at least 1 follow-up because we did not collect baseline substance use data; future studies should collect			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				these data to conduct intent-to-treat analyses.			
18. Schilling et al. **2017**	Quasi Experimental Quantitative Pre-Post interventional study	1. Standardizing the telephone follow-up ***assessment*** process by child abuse team that occurs 2–3	Standardized Squire guidelines were used for quality improvement project planning and manuscript preparation.	1. Limited scope - While the ultimate goal of HIV-PEP is to prevent the acquisition of HIV by children who have been acutely sexually assaulted, this very rare outcome was beyond the scope of our project. 2. Limited Scope - We did not consider whether or not the decision to	8/10 80%	2	High Study limitations not clearly discussed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Improving HIV post-exposure prophylaxis rates after pediatric acute sexual assault	Longitudinal Retrospective record review. Quality Improvement Study	days following ED discharge. 2. ***Screen saver*** reminding providers to order 28-day supply of HIV-PEP.		prescribe HIV-PEP was appropriate, rather we focused on whether the child received the HIVPEP once the decision was made to prescribe it. Although difficulties in adherence to prescribed HIV-PEP following sexual assault is a well-recognized problem, improving patient adherence was not the goal of our QI initiative and we did not measure patient compliance with completion of the prescribed 28-day regimen. Data was not routinely collected regarding completion of the 28-day course.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		3. HIV-PEP prescribing recommendations highlighted as "***safety tip***" during ED clinician rounds. 4. ***HIV-PEP email "pearl"*** or key practice		3. Generalizability/ Limited Context - Our project was conducted at a single center in which particular problems were identified. These specific problems may not exist at other institutions. However our approach to identify and evaluate the problems, and to develop and test interventions to improve medical care for child victims of sexual assault, is generalizable.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		recommend-dation. 5. ***Pathway.*** Revision of SART clinical pathway. 6. Order set. Revision of associated order set to					

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		auto-populate the number of days for the HIV-PEP prescription.					
19. Britton et al. **2013**	Quasi Experimental Quantitative	Implementation of standardized electronic order set that automatically offered	Nil	1. Generalizability/ Limited Context - The research was conducted at a single institution with providers who are quite used to utilizing electronic technologies to deliver care. Our results may not be generalizable to other institutions, particularly those	8/10 80%	2	High Table 4 for clearly explained

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Pre-Post interventional study Longitudinal Retrospective record review.	clinicians pharmacologic orders that were adherent to CDC treatment guidelines for the patient population of interest.		with more limited use of computer-based technology. A paper-based environment could accomplish similar results with a disease-specific checklist or guideline. 2. Confounding factors - In addition, as a result of the pre-post design, it is possible that the improvements in guideline adherence we noted could be a result of temporal factors. Given the magnitude of the change we observed, we believe that it is quite unlikely that			, does not make intuitive sense.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				the improvement was a result of temporal trends. 3. In addition, the order set was not designed with a forcing function and clinicians were free to use the set or place orders independent of the order set; we were not able to track the number of times the full order set was utilized. Although forcing functions have been shown to be an effective way to reduce medication errors, we were sensitive to issues raised by			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				many clinicians regarding these functions as impediments to the expeditious delivery of care. 4. Limited scope - We did not attempt to capture the reason for clinicians not utilizing the order set in the post-implementation time period. Medical providers may have identified other factors that swayed them from following CDC guidelines, and these nuances would be difficult to identify without a more complex design.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				Our lack of a completely computerized electronic health record prevented the order entry process from making suggestions regarding clinical decisions based on other documentation, such as the chief complaint or allergies. A comprehensive electronic record could link the order set to chief complaint and remind or ask clinicians about care they have ordered that varies from suggested guidelines.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				Although only five cases of sub-optimal antibiotic choice in the pre-intervention phase were associated with a reported allergy to one of the CDC-recommended antibiotics, it is possible that individual physicians may have had concern for potential cross-reactivity that was not documented in the medical record.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				This study measures adherence to CDC recommendations for prophylaxis for sexually transmitted diseases including trichomoniasis, bacterial vaginosis, gonorrhea, and chlamydia. There are some areas in which our order set, and practices deviate from CDC guideline recommendations. For example, we do not routinely culture all sexual assault patients for sexually transmitted diseases. This practice is not felt to provide additional benefit to our patients, as we provide prophylaxis for			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				infection. Human immunodeficiency virus prophylaxis was not included in our order set, as this is evaluated on an individual case basis at our facility.			
20. Schilling et al. **2015**	Non-experimental Quantitative Descriptive	Nil	International Classification of Diseases, Revision 9, Clinical Modification (ICD-9-CM) diagnosis codes	1. Limited information/ Record Review Study Design - Our data were limited to the ED setting, so we cannot be certain of any testing or prophylaxis provision before or after the ED visit. We tried to address this by including only patients discharged from the hospital; however, it is	11/12 92%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Testing and Treatment After Adolescent Sexual Assault in Pediatric Emergency Departments	Retrospective Medical Records Review			possible that some patients were discharged to child advocacy centers to complete the evaluation or received testing or treatment at outpatient follow-up visits, although this practice is not recommended. 2. Limited information/ Record Review Study Design - We excluded 1059 patients because of missing discharge status. However, there was no evidence that these patients differed systematically from			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				those included. 3. Limited information/ Record Review Study Design - Unmeasured differences could exist in history and physical exam findings that influenced the decision to obtain testing or provide prophylaxis. In particular, time since assault is critical for decisions regarding prophylaxis administration,			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				and some adolescents being evaluated in EDs for sexual assault may not require prophylaxis. However, our validation sub-study suggests that this is not the case for the majority, as 74% of included adolescents presented within 72 hours and 79% presented within 120 hours. 4. Limited information/ Record Review Study Design - Other historical factors such as alleged perpetrator characteristics or the			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				nature of the sexual contact were unavailable and might have influenced medical care. However, such historical characteristics are not considered in the AAP and CDC recommendations for testing or prophylaxis practices for adolescents after sexual assault. 5. Limited information/ Record Review Study Design - Misclassifications in the administrative data are possible because of miscoded or inaccurate			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				ICD-9-CM diagnosis or billing codes. For this reason, we validated the diagnosis codes and laboratory and pharmacy CTC codes at 4 centers using chart review and demonstrated excellent sensitivity and specificity for the variables in this study. 6. Lack of power - Finally, it is possible that our study was underpowered to detect differences in			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				testing and prophylaxis treatment by presence of pathways or teams.			
21. Patel et al. **2013**	Non-experimental Quantitative Descriptive	Nil	A 26-item telephone survey assessed provision of services to sexual assault survivors in accordance with comprehensive medical care	1. Limited information/ scope - Include lack of information regarding patient demographics, payer mix, and religious and academic hospital affiliations. 2. Limited information/ scope - Furthermore, the impact of geography	9/11 82%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Cross sectional Survey		management (CMCM).	and patient volume on the provision of CMCM was not assessed. The survey methodology did not validate participant responses, either by polling multiple individuals from each site or through a chart review. 3. Validity - Upon analysis, some discrepancies were noted in responses. For example, 31 hospitals reported "always" providing emergency contraception without "always" providing emergency contraception			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				counseling. This might reflect a misunderstanding of these questions by some respondents, or it could indicate that emergency contraception is being provided in some settings without patient counseling. A conclusion cannot be drawn in the absence of validation or further inquiry. 4. Limited scope - Future studies should also investigate the capacity of hospitals to provide care for pediatric			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				survivors of sexual assault, whose needs in terms of both physical examination and mental health care differ from those of adult patients.			
22. Walsh et al. **2019**	Non-experimental Online email surveys	Telehealth support & services. Live sexual assault nurse examiner	2 Likert Scales: -Impact of telenursing consultation	1. Retrospective Study Design - Our method of collecting data likely underestimates the number of ways in which a teleSANE was helpful. Interviewees are unlikely to remember every specific way in which a teleSANE was helpful over the course	11/13 85%	3	High Validity and reliability of Likert scales on

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Using Telehealth for Sexual Assault Forensic Examinations; A Process Evaluation of a National Pilot Project	Mixed method: Quantitative and Qualitative Descriptive Exploratory	(SANE) services were provided via telehealth to support site clinicians conducting sexual assault forensic medical examinations for adult and adolescent patients.	- overall quality of the telenursing encounter	of a multiple-hour examination conducted several weeks earlier. 2. Limited data - 21% of telehealth procedures performed by teleSANEs and 55% of telehealth procedures received by site clinicians were not captured in the survey data. We do not know whether these experiences were similar to those who participated in the survey. However, we received information from either the teleSANE			the survey.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				or site clinician/corpsmen on 87%of all telehealth procedures. 3. Limited data - We did not have access to the demographic characteristics of patients. 4. Small sample size/ Limited power - There was wide variation across the six sites as well as a small number of patients per site that made it difficult			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				to compare the impact of the intervention across the pilot sites. 6. Limited scope - Much more research is needed to better understand telehealth and the response to sexual assault. Studies are needed that assess the impact of telehealth on the quality of examinations, as has been done for telehealth in child sexual abuse cases. Studies should explore whether telehealth improves patients' experiences by increasing patients'			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				access to trauma informed professionals or whether it contributes in some way to patient stress. 7. Limited scope - We found that 8% of patients did not consent to the video link during the examination, and future studies should explore how this impacts the experience. 8. Limited scope - Research should examine the impact of access to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				teleSANEs via telehealth on prosecution outcomes.			
23. Gilmore et al **2019** **Usability Testing of a Mobile**	Non-experimental Online email surveys Mixed method:	SC-Safe Mobile health application. for individuals who have experienced recent sexual assault.	Measures 1. Sexual Assault Characteristics: Adapted from Sexual Experiences Survey.	1. Small Sample Size and Response rate - Current study included a small sample of individuals to assess initial usability of SC-Safe. 2. Generalizability/ Narrow Sample - Future work is needed to understand the post-SAMFE healthcare needs of	10/13 77%	3	Low Sample size very small

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
Health Intervention to Address Acute Care Needs after Sexual Assault	Quantitative and Qualitative Descriptive Exploratory		2. Current Mental Health and Substance Use Symptoms: The Patient Health Questionnaire 3. Post-traumatic stress symptoms (PTSD): PTSD Checklist (PCL-5)	men, sexual and gender minorities, and different racial/ethnic groups. 3. Generalizability/ Narrow Sample - Future work is also needed to assess if there are differences in usability based on demographic characteristics and time since the most recent sexual assault. It was not possible to examine differences in the current study due to the small sample size, therefore, more work is needed. It is possible that individuals who experienced sexual			Response rate less than 25% Exploratory study; larger replicatory studies needed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			4. Alcohol misuse: Alcohol Use Disorders Identification Test (AUDIT-C) Instruments: Likert scale for Provider Experiences and Feedback.	assault within days and weeks of the sexual assault may have different feedback than those who experienced the sexual assault more than one year ago. 4. Generalizability/ Narrow Sample - Due to the high rates of sexual assault among those who identify as LGBTQIA+ [54] or belong to a racial/ethnic minority group [55], it is important to consider unique barriers to receiving healthcare among these			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				underserved populations as well. For racial/ethnic minority groups, societal (e.g., language, cultural values) and organizational (e.g., lack of insurance, lack of documentation) barriers may even further limit access to several treatment options [56]. Among the LGBTQIA+ individuals, stigma, reluctance to disclose sexual identity, and insefficient number of culturally competent providers are significant treatment access barriers. Prior to testing the efficacy of SC-Safe, it is crucial to receive feedback from			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				sexual, gender, racial, and ethnic minority groups that are0 at high risk for sexual assault and that have additional barriers to accessing healthcare services. 5. Limited Scope - This application did not assess for human tracking risk, which would be beneficial to add in future iterations of the application. Due to the many barriers to seeking services related to sexual assault, as well as compounding barriers for sub-			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				populations that are at high risk for experiencing sexual assault, innovative approaches to service delivery, like SC-Safe are urgently needed, but further testing within these populations is urgently needed. It would be helpful for future research to integrate personalized insurance, medical costs, and applications for victim compensation to cover medically related costs, if eligible, into SC-Safe.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				6. Methodology - Although we observed positive feedback on the usability of this intervention, results are preliminary and further research is needed. It is typical for interviewers to be present during usability testing; however, it is possible that the presence of the researcher may have inhibited participants' responses. Therefore, it may be useful to assess usability when there is no researcher present through self-report as well.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				7. Limited Scope - Future research will include a more in-depth analysis of usability questionnaires, however, at the current stage of this program development we were interested in receiving more open-ended feedback to inform the second iteration of the program. Usability findings do not provide any indication of efficacy. 8. Although evidence-based practices were integrated into SC-Safe, more			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				work is needed to determine the efficacy of the application.			
24. Lecher et al **2021**	Non-experimental Surveys Quantitative	SANE programs	5 survey questions using 4 point Likert scale: 1 (strongly disagree) – 4 (strongly agree). Measures	1. Generalizability/ Sampling – The emergency centers/ programs participating in the study were not specifically selected to be nationally representative of all SANE programs; results cannot be viewed as providing specific estimates of experiences with SANEs at all programs across the US.	9/10 90%	3	High Study's discussion does give qualitative quotes, with no

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Descriptive Exploratory		1. Anxiety symptoms. 2. Depression symptoms. 3. Post-traumatic stress symptoms (PTSS). 3. Somatic symptoms. 4. Pain severity.	2. Generalizability/ Narrow Sampling - Only female patients aged 18 years or older were studied; therefore, the findings may not be generalizable to male or teen patients. 3. Generalizability/ Narrow Sampling - Results are also not generalizable to patients who were ineligible to participate in our study; those who presented for care more than 72 hours after SA, not alert/oriented, incarcerated, pregnant, living with assailant, admitted for acute care,			mention of qualitative data collection in method or results.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				fracture(s), & other reasons listed. Future research should include children, men, as well as lesbian, gay, bisexual, and transgender patients because they may face unique challenges and have different perspectives on SANE services. 4. Limited Scope - Moreover, the preassault health concerns examined were limited to emotional health and pain symptoms; therefore, these findings may not be generalizable to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				patients who have been sexually assaulted and who present with other types of preassault health conditions. 5. Generalizability/ Narrow Context - Most of our sites were in urban/suburban areas; therefore, future research should examine SANE care satisfaction among patients living in rural areas.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				6. Measurement/ Validity - Considering that most of patients' responses were at the upper end of our scale, it is possible that ceiling effects existed in our measurement of the perceptions of SANE care or that a social desirability bias affected the results. Future research should consider more nuanced measures such as using Likert scales with 7 to 10 possible response options.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
25. Buchbinder et al. **2021**	Non-experimental Survey Qualitative Descriptive	Nil	Open-ended question: “What do you think is most important for researchers to understand about your experience since the assault?”	1. Open ended question design - The shortcomings of open-ended survey questions include a tendency toward brief responses, the use of leading questions that may not adequately capture underlying patient views, and a negativity bias. 2. Attrition/ Responder bias - It is possible that the experiences of responders were more negative than those who did not respond to the target	10/11 91%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Exploratory Prospective, longitudinal multi-site observational study.			survey question. Such a tendency is suggested by the increased trauma history of respondents vs. non-respondents. 3. Generalizability/ Narrow Sample - In addition, only cisgender women were included in the study, and the overwhelming majority of assailants were male. Consequently, findings may not be representative of all SA survivors.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Validity/ Ambiguity of question - Participants interpreted the target question ("What do you think is most important for researchers to understand about your experience since the assault?") in different ways, and some participants focused more on what they thought researchers should study than on their own personal experience. In addition, some responses seemed directed at specific features of the larger study.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				These limitations are offset by the breadth of data gathered from a large sample. Furthermore, study data meet criteria for richness in open-ended free-text response studies, including descriptions of particular social worlds, disclosure of otherwise inaccessible thoughts and feelings, and “thick” descriptions of context, emotion, personal meanings, and social relationships.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
26. Greenbaum et al. **2018**	Non-Experimental Quantitative Tool Development Cross-sectional, Observational	Nil	Child sex trafficking screening tool. Patients asked complete part or all of 17-item questionnaire. First 9 questions about prior medical care, injuries, and	1. Generalizability/ Narrow Sample – The study included only English speaking adolescents, reducing generalizability. Sites varied in the minimum age for inclusion criteria. 2. Threat to Validity - Short of witnessing exploitation, a true gold standard for victim identification is lacking. Thus, we relied on information available to the HCP at the time of the visit, which is consistent with "real world" conditions. As a result, some	12/13 92%	3	High Survey Response rate unavailable/ not known.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			known risk factors for CST. Additional 8 questions about sexual activity, sexual orientation, STIs, & high-risk behavior.	participants may have been misclassified. 3. Threat to Validity - While it is possible that some youth identified as CST victims were not being exploited, it is far more likely that exploited victims were misclassified as non-CST, given the reluctance of victims to disclose their status, or their inability to recognize their exploitation. In this case, our results likely underestimated the frequency of victim presentation to the three health care settings.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Threat to Validity - Not all examiners provided reasons for their decision to categorize patients as CST victims, so it is possible that some patients were misclassified. However, examiners had received training on human trafficking, and the federal definition was included in the question asking about victimization. It will be important in future studies to verify all decisions on victim status. 5. Confounding factors/ Variance in data collection - Conditions of the			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				study varied among the 16 study sites (e.g., some sites gave patients additional routine questionnaires to complete). This may have altered a child's decision to answer study questions accurately, and/ or may have provided information about CST that was helpful to the provider. However, the variety of conditions is to be expected between practice settings and reflects "real world" conditions. 6. Threat to Reliability - There were no research coordinators hired for the study; data collection was dependent			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				to some degree on recall/ time availability. However, the commitment of HCPs to incorporate the study into their work testifies to the perceived importance of CST and suggests the tool can be incorporated into the normal workflow of a clinical setting. 7. Generalizability/ Lack of information - Further, we were not able to obtain an accurate percentage of patients excluded from the study. This limits our ability to comment on the generalizability of results to new			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				settings or the extent to which participants were a select population.			
27. Hoffmann-Walbeck H et al. **2016**	Non-Experimental Mixed Methods Survey	Introduction of "stuprum kit".	Self-developed questionnaires Contained items on field of activity, gender, & professional experience. Personal opinions of	1. Generalizability/ Limited Sample - However, this is still a monocentric survey (one hospital, three locations). 2. Generalizability/ Limited Sample - On account of the high fluctuation, the entire medical and nursing staff of the emergency departments could not be	9/11 82%	3	Good Limited Context/ Sample

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Observational Retrospective case analysis;		various aspects of the care situation (measured with five- or four-point ordinal scales) addressed in 8 questions. In two of the questions concrete criticisms could be expressed as free texts.	included here, and a selection effect cannot be discounted. 3. Limited Scope/ Perspective - The involved female patients were not asked to evaluate the health-care situation for ethical and practical reasons.			Requires Replication

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
28. Chew et al. **2015**	Non-Experimental Quantitative Questionnaire/ Survey	Nil	Questionnaire based on review of journal articles, standard emergency medicine textbooks, policy, statements as well as Malaysian legal documents.	1. Generalizability/ Limited Setting - First, this study was only confined to healthcare providers in a single emergency department in Malaysia. Although the guidelines are fairly standard for every OSCC in Malaysia, the degree of involvement and the respective roles of the various healthcare providers may differ from centre to centre. For example, some of the OSCC at other government hospitals may utilize MAs for triaging	11/13 85%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Observational; Cross Section; Self-Reporting			and for forensic specimen collections. Thus their level of knowledge and adherence to acceptable practices could differ from those in other centres. 2. Threat to validity - The rather long recruitment period from January to October 2013 due to technical difficulty in recruiting participants could have introduced errors to the results as exposure or experience could have gained by some of the			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				participants during the study period and this might have influenced how some participants answered the questions. 3. Threat to Validity/ Self-reporting study design - Furthermore, this study was based on a self-administered questionnaire. As such, there is always the potential of reporting bias as well as the possibility that the participants may not understand the questions properly.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
29. Rothbaum et al. **2012**	Experimental Random Controlled Trial (RCT) Quantitative	Patients received three, hour-long sessions of a modified PE (Prolonged Exposure) intervention, distributed 1 week apart.	The Standardized Trauma Interview. Posttraumatic Stress Diagnostic Scale.	1. Limited information – Since we felt that it would not be valid to measure PTSD symptoms within hours of trauma exposure, no baseline measure of PTSD was collected. Thus, we are unable to calculate symptom improvement from baseline to follow-up and must depend on between-group comparisons at follow-up assessments.	9/11 82%	1	Good Sample size small, as stated in limitations.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Longitudinal; Translational		Childhood Trauma Questionnaire Immediate Stress Reaction Checklist. Beck Depression Inventory, Second Edition.	2. Excluded Findings - The current findings also identified higher immediate stress reactions among intervention participants, which may have allowed more room for improvement, although these initial differences were controlled for statistically. 3. Limited Scope - Because of the pilot nature of this study and the desire to minimize participant burden, this study was not able to assess the impact			Larger duplicating studies needed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			PTSD Symptom Scale-Interview Version.	of the intervention on other outcome measures, such as functioning. 4. Attrition Rate/ Threat to Validity - In addition, dropout rates were substantial, although complete data were obtained at the 4-week follow-up for the majority of our sample (74%). Such rates are similar to those of other recent large-scale trials that recruited patients shortly after trauma exposure.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				5. Small Sample Size/ Lack of Statistical Power - Similarly, the current study's sample size was not sufficiently powered to detect the smaller effects that were observed on some of the outcome measures such as the PDS. It is unclear if a type II error was committed in retaining the null hypothesis for these analyses. Replication of these findings in larger samples is needed to confirm their reliability. Additionally, future studies examining reduction of posttraumatic stress reactions in the acute aftermath			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				of trauma exposure should be powered for small effects. 6. Limited Scope - This study may have benefited from a longer follow-up period. However, the decision to conduct a 12-week follow-up was made based on research suggesting that by 3 to 4 months posttrauma, PTSD symptoms have typically become chronic and are unlikely to recover spontaneously.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				7. Methodology - The lack of 24-hour ED coverage is another limitation, although most patients arriving overnight could be screened in the morning before discharge. 8. Limited Scope - In addition, because the current study was aiming to answer the question of whether PTSD can be prevented by intervening before memory consolidation, our intervention was specific to the presenting trauma only and limited by			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				three brief sessions. Memories from past traumatic events were not addressed, and thus, not surprisingly, the intervention effects did not generalize to PTSD symptoms associated with prior traumas. 9. Generalizability/ Limited Context - Lastly, the public health reach of this intervention may be limited, providing the most benefit to patients most at risk. Expanding the reach of			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				early intervention should be a focus of further research.			
30. Hoehn et al. **2018**	Quasi Experimental Quantitative	Interventions included the construction of a best practice algorithm derived from published	Nil	1. Generalizability/ Narrow Context - It was performed at a single large pediatric center with specialized resources that may limit generalizability. Our institutional culture and resources supported	9/10 90%	2	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Pre-Post interventional study Longitudinal Retrospective record review.	guidelines, targeted clinician education, and integration of an electronic order set.		successful implementation but may pose challenges in other settings. 2. Retrospective Study Design - Although we used a robust process to include all relevant patient visits and facets of adherence, our retrospective design may not have captured all the nuances of algorithm adherence. 3. Sustainability - Additionally, data collection efforts have required a large			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				amount of manual chart review, which will make continued monitoring difficult. Although we have demonstrated 13 months of postimplementation data about algorithm adherence, it is unclear whether increased adherence will be sustained further into the future.			
31. Kellogg et al.	Non-experimental	Nil	Sensitive nucleic acid amplification tests (NAATs).	1. Limited Information - First, not all patients were tested at all sites; testing decisions were based on clinical findings, patient history, parent	10/12 83%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2018	Quantitative Observational Retrospective medical record review.		Specific NAAT, transcription-mediated amplification (TMA). Validation tests conducted by the laboratory before this study. 100% correlation was	history, and clinician judgment. Most clinicians opted to do more tests when the patient was unwilling or unable to provide complete information about the sexual contact. Further testing may have revealed additional, and unexpected, infections. The rate of unexpected infections, however, could be greater or less than our estimate depending on how accurately the examiners assessed the risk of undisclosed sexual contact.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			found using TMA in detecting NG and CT.				
32. Chalmers et al.	Non-experimental	Nil	Online survey with adaptive questioning.	1. Survey Design - Survey respondents were given the option to select "Other" when indicating aspects of	11/13 85%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2022	Survey Quantitative Descriptive Exploratory			identity that impact care. There was little consensus among these more qualitative responses, and they were excluded from the data analysis. However, there may be aspects of identity not captured through our survey that do impact care. 2. Generalizability/ Narrow Sample - Additionally, the majority of survey respondents were white, cis-gendered women. While this is likely reflective of the nationwide population of SA			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				patient advocates, it is not reflective of SA survivors themselves. Advocates may have held conscious or unconscious bias when observing and reporting interactions between survivors and ED staff. 3. Generalizability/ Narrow Sample - Future studies should explore patient-centered perspectives in the quality of ED care offered to SA survivors to incorporate the perspectives of SA survivors with diverse identities.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
33. Hornor et al. **2022** **Pediatric Forensic Analysis**	Non-Experimental Quantitative Descriptive	Implementing more inclusive indications for collection of evidence in a pediatric emergency department (PED).	Nil	1. Retrospective Study Design - This was a retrospective study, and variations in the quality and completeness of data collection existed, including inconsistent recording of bathing after sexual abuse. 2. Limited information - Second, because of limitations in law enforcement jurisdictions' ability to share information regarding ongoing criminal investigations, it was often	9/10 90%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Retrospective record review.			not possible to describe identifiable foreign DNA profiles as perpetrator DNA. 3. Limited information - Finally, Tanner staging, and sexual maturity ratings were not recorded. Positive forensic evidence yield in children 12 years old or younger was described in detail because of state law defining any sexual contact to be illegal; however, these children were most likely of various stages of Tanner stage development.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
34. Hurst et al. **2021**	Non-Experimental Quantitative Tool Validation in Specific Setting Cross-sectional,	For subjects who screened positive, the treating practitioner was instructed to consult a Clinical Social Worker or notify the psychiatric CSW to	Greenbaum et al's16 6- question child sex-trafficking screening tool;	1. Generalizability/ Narrow Sample - Overall, only 4 Spanish-speaking patients were enrolled, although a large percentage of the local population is Spanish-speaking only. Although this was not the object of study, we acknowledge that there may be unknown cultural factors that may decrease detection of these high risk individuals. In addition, bilingual subjects may have selected English	9/10 90%	3	Good Small sample size at noted in limitations.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Observational	facilitate a psychosocial evaluation for child sex trafficking and report to the appropriate authorities.		surveys despite the available Spanish version. Further study is required to explore additional cultural barriers. 2. Lack of information/ Threat to Validity - Given that CSW assessments are often lengthy, a final determination of the patient's trafficking status was not always available. This may be, in part, due to the transfer of psychiatric patients to other inpatient hospitals; therefore, follow-up CSW notes were not			Study requires duplication.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				available for investigator review. Thus, using the referral to DHS via CSW as the gold standard, in this study, we may have overestimated the prevalence of trafficking in this population. However, the prevalence, although higher, is within the range of that found in other studies conducted in large urban environments and, therefore, reflective of the population. 3. Small Sample Size/ Issues with Enrollment - Finally, the severe acute			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				respiratory syndrome coronavirus 2 pandemic interrupted all study protocols at the study site, limiting enrollment. However, the study sample size is similar to previous reports16–18 and achieved comparable test characteristics, suggesting that the sample enrolled adequately represents the local high-risk population.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
35. Peeters et al. **2019**	Non-experimental Mixed-method design Survey Descriptive;	Nil.	Nil	1. Small Sample Size/ Lack of Generalizability - Of the 92 victims of recent SV who came in for a SAS in one of the two participating hospitals, 51 received an envelope with the questionnaire and three participated in this research. Of the former victims of SV who saw our online invitation, twenty reached out to us and thirteen participated. The number of	7/11 64%	3	Good Response Rate very low. However for qualitative research:

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Explorative			participants in this study is too small to extrapolate conclusions for Belgium or other countries. Even though only a low percentage of reached victims participated in this study, the number of participants in this research was as would be expected for qualitative research in this field of study. Disclosure is very low for victims of SV and participating in followup research by victims is even lower. In qualitative			sample size adequate, saturation reached, perspectives important.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				research, it is expected to achieve saturation between 10 and 20 interviews. This saturation was noted in the responses given by the different participants.			
36. Tarquinio et al. **2011**	Quasi-experimental Quantitative	Eye movement desensitization and reprocessing;	The French version of the Impact of Event Scale (IES) used to evaluate severity of	1. Quasi Experimental Study Design - it was not possible to randomize the subjects and to compare groups of victims based on distinct treatments (URG EMDR vs. debriefing for example). Undoubtedly, future research in this area will make such	7/12 58%	2	Low Small sample size.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Pre/Post Intervention Longitudinal	This psychological emergency protocol coming from EMDR therapy was named URG-EMDR. The URGent EMDR treatment	trauma-related symptomatology. The IES is a 15-item self-report questionnaire measuring 2 dimensions of posttraumatic psychological distress: intrusions and avoidance.	types of comparisons in order to verify the value of one or another of the approaches. Such an approach cannot concern groups of victims, which constitutes an important operational limit particularly in case of a catastrophe involving a large number of victims. A work of reflection should be carried out in the future on this point, integrating debriefing for more vulnerable targeted victims, or reflecting upon how the dimension of the group could be integrated.			Findings not presented clearly. Possible confounding factors not discussed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		protocol (URG-EMDR) is an integrative approach which combines key points of the basic protocol of Francine Shapiro, of the Recent Event Protocol of Francine	Subjective Unit of Distress (SUD); a Likert scale, evaluates the degree of distress caused by mental image, a target or a critical point activated and treated during the psycho-therapeutic process. It is a subjective	2. Limited scope - In addition, the protocol for groups includes the identification of persons who will require supplementary individual treatment when the level of distress is not sufficiently reduced during the group intervention. 3. Methodology - Finally, it seems possible to improve the pertinence of the intervention by adding a			Study requires duplication.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Shapiro, of the R-TEP protocol of Shapiro and Laub, of the Modified Abridged EMDR protocol of Kutz, and the Emergency Response Procedure of Quinn, as well	evaluation of patient's negative sentiment during treatment.	complementary secondary desensitization phase after phase 6. All the critical points would be treated once at this stage, and during this phase, they would be treated again one by one, allowing the patient to go over all of the critical points, and even to envisage new elements which were not present the first time. Effectively, the aim of primary desensitization is to offer a new view of the traumatic episode and all of the critical points. Therefore, it is possible that some critical points or intermediary targets			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		as some principles related to psychological debriefing.		will be treated again with a SUD which is more extensive than the one used during the primary desensitization.			
37. Jancey et al. **2011**	Non-experimental Mixed method	Nil.	Nil	1. The purposive sampling of this approach and subject burden may have contributed to loss to follow-up and subject bias, making it unfeasible to make inferences at a population level.	9/11 82%	3	High Limitations not adequately

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Survey Delphi method Exploratory						discussed.

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
38. Louwers et al. **2011**	Non-experimental Quantitative Retrospective record review Explorative; Descriptive	All hospitals had a checklist of warning signs of child abuse available in the emergency department.	Nil	1. Methodology/ Threat to Validity - First, we present cases of suspected abuse. Since abuse was not yet confirmed, this could have led to an overestimation of the detection rate of child abuse. 2. Retrospective Study Design/ Threat to Reliability - Second, cases of suspected abuse might have been missed because only one of the hospitals systematically registered such cases.	10/10 100%	3	High Good Sample Size and study period

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				3. Data Collection/ Threat to Validity - Finally, for optimal data comparison the same time period should have been used in all hospitals. However, due to logistical problems this was not possible in two of the participating centres.			
39. Fontenot	Non-experimental	Nil.	14-item measure for knowledge	1. Self-reporting Study Design - The limitations include the cross sectional design and the self-report	11/12 92%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2013	Quantitative Cross-sectional electronic mail survey Explorative; Descriptive.		of HPV and the HPV vaccine was utilized. Perceived benefits; Perceived barriers; Normative Beliefs; Self-efficacy, and Vaccine attitudes measures were all	methodology. This survey captured the one-time snapshot of the participants' attitudes, beliefs, and knowledge level. 2. Generalizability/ Narrow Sample - Methodology of the convenience sample of IAFN members. This sample did not capture the full population of nurses who care for sexual assault patients and was homogenous in race and ethnicity.			Response Rate not provided

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			Likert-scale format questions.	3. Threats to Validity - Because of the early stage of research for nurses, in particular, the unique populations of forensic nurses, standardized measurement tools are not available, and this can lead to problems related to validity.			
40. Shaw & Coates	Non-experimental	Nil	PSCR	1. Retrospective Study Design - These rates of postassault services and action should be interpreted with caution, as	9/10 90%	3	High

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
2021	Quantitative Retrospective form review (Provider Sexual Crime Reporting form)		Anonymous Provider Sexual Crime Reporting (PSCR) form; Massachusetts state statute requires medical providers to provide information to a	they are based on existing records that we repurposed to answer our focal research questions. As is always the case with existing records, it can be difficult to know the full context of a given case, which may impact the variables of interest. 2. Generalizability/ Limited Sample/ Validity -We examined and compared rates of emergency contraception administration among female patients			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Descriptive		state safety agency on all cases of rape & sexual assault in which the victim sought medical care.	treated by SANEs and non-SANE medical providers. We limited our examination of emergency contraception administration to cases involving female patients, as emergency contraception is only indicated for individuals capable of becoming pregnant. However, our use of "female" as an indication of an individual who could become pregnant was not without its flaws. Included in this subsample were prepubescent and postmenopausal patients for which emergency contraception would not be			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				indicated and should not be administered. Also included in this subsample were transgender women who were accurately marked as "female" in regard to their gender identity, but who may not be capable of becoming pregnant. Transgender men, marked as "male" in correspondence with their gender identity, who may be capable of becoming pregnant and thus indicating emergency contraception, were excluded. This important nuance means that rates of EC reported may			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				be lower than if we were to only examine rates of administration among individuals capable of becoming pregnant and for whom emergency contraception would be indicated. 3. Limited information/ Retrospective Study Design - In addition, when working with existing records, recorded information may be inaccurate or maybe missing altogether. This is particularly relevant for the current study. Because SANEs			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				receive extensive training in the care of sexual assault patients and are more familiar with the necessary documentation to complete in providing postassault care, they may be more likely to consistently and accurately complete said documentation as compared to non-SANE medical providers. In addition, and for the same reasons, SANEs may be more likely to fax the required documentation into the state safety agency as compared to non-SANE medical providers. If a form was not			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				received by the state safety agency or if information was missing on the variables of interest in the current study, the case was not included in our analysis. Thus, the rate differences between SANEs and non-SANE medical providers may be even more pronounced than what is reported herein. 4. Limited Scope - It is also important to bear in mind that the sample examined in the current study only			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				includes those cases in which the patient consented to the collection of a sexual assault kit. Postassault service provision and action may look different for patients who seek postassault medical care, but who decline a sexual assault kit. 5. Generalizability/ Specific Context - Finally, it is important to note that the differential rates observed among SANEs and non-SANE medical providers in this study			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				may not be generalizable to or as pronounced as what might be observed in other locales. The focal state in this study is unique in its level of commitment to a centralized and coordinated response to sexual assault. This commitment is evidenced through the use of a state-wide database on sexual assault medical forensic care service provision and a state-wide SANE program operated out of the state department of public health. In addition, each year, the state-wide SANE program provides			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				training for non-SANE medical providers on how to respond to sexual assault patients. The state-wide SANE program consistently offers education and support to hospitals as they develop protocols related to serving sexual assault patients. As a result, patients treated by non-SANE medical providers in this state may receive an improved postassault medical response as compared to non-SANE medical providers treated elsewhere.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
41. VanMeter et al **2021**	Non-experimental Quantitative Retrospective child forensic interview transcript analysis	Nil	Narrative Coherence Coding Scheme (NaCCS); Made up of 3 dimensions: chronology, context, and theme –	1. Generalizability/ Narrow Context- The present study was limited to investigative interviews conducted in the United Kingdom that made it to court. Therefore, it is possible that these interviews are of better quality than interviews that did not make it to court. This may also explain why the current sample did not include the youngest age group, because prosecutors are often hesitant to	10/12 83%	3	Good Small sample size

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Descriptive		each of these dimensions would have a different developmental course. Chronology relates to the timeline of event; context refers to important details regarding time &	prosecute sexual abuse with very young witnesses (Brewer et al., 1997). 2. Generalizability/ Narrow Context- However, these interviews still lack greatly in cognitive support and vary in terms of narrative coherence. The sample also contained limited variation in emotional support strategies, perhaps because all interviewers received some but not extensive training. Reviewing more interviews from across the globe that			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			location of the event; and theme means the ability to maintain & expand upon main topic of the event, while describing it with a subjective tone.	differ in interviewing protocol and court status would enhance the generalizability of the findings. 3. Methodology/ Record Review- Additionally, the study used investigative interview transcripts and, although some non-verbal cues of reluctance were noted in the transcripts (e.g. pauses, sighing, crying), video recordings would have been particularly useful for scoring interviewer emotional support.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Methodology/ Limited Scope - The current study also utilized macro-codes of interviewer support rather than counting instances of support. While this can more appropriately incorporate context, appropriateness, and overall behavior related to support, future work should examine how specific instances of support might influence narrative coherence.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				5. Generalizability/ Narrow Context - An additional limitation was that all children described alleged sexual abuse. Future researchers could explore how different types of maltreatment (physical abuse or neglect) affect children's ability to provide coherent narratives. 6. Limited Scope - Future research could also compare NaCCS and frequency of detail coding. This would allow researchers and practitioners to better understand the relationship			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				between the quantity of details children provide and the quality of their narratives. Researchers could determine whether long interviews are necessary for a child to communicate detailed and structured accounts of alleged abuse. They could also determine whether particularly long interviews had detrimental effects on narrative coherence, particularly when multiple incidents of abuse are elicited. 7. Methodology/ Threats to Validity - Lastly, interviewing guidelines allow			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				children to practice saying 'I don't know' when the child in fact does not remember or know an answer. Therefore, it is possible that ignorance may have been mistakenly coded as reluctance.			
42. Hoedeman et al. **2021**	Non-Experimental Quantitative	Nil	A survey was conducted on recognition of child maltreatment in EDs in European countries with a focus on	1. Generalizability - The representativeness of the sample to reflect the actual strategies used to recognize child maltreatment at European hospitals is a known limitation to the survey design [41]. When taken into account that 67.5% of the respondents represented a	11/13 85%	3	Good Reliability of measurement/ questionn

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Survey Explorative; Descriptive		screening methods, parental risk factors, training, and hospital policies. The survey is based on a questionnaire used by the Dutch Health Inspectorate and is focused on	teaching/university hospital, the sample might overestimate the presence of strategies to recognize child maltreatment. 2. Generalizability/ Threats to Validity - The responses from individual professionals are not representative of all hospital staff and different respondents within the same hospital gave varied answers, which were taken into account in the analysis.			aire not tested

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
			methods used to recognize child maltreatment by addressing child and/or parental risk factors. Additionally, it addresses the presence of a hospital policy concerning child maltreatment.	3. Response Rate Estimation - Most of the surveys were distributed through key members (of REPEM, the EuSEN and the EUSEM), not all of whom are located in every European country. The overall estimated response rate was moderate and comparable to other surveys. Still, since non-EUSEM members could also respond via the EUSEM congress it is possible we overestimated the response rate.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Sampling/ Selection Bias - The number of respondents with different professions among the different countries was not always evenly distributed. We corrected the largest misdistribution (ED nurses from the EuSEN in Belgium) by a random sample, which led to a more equal representation. 5. Threats to Validity - In the absence of a validated score to judge quality of care, we developed an ad hoc score to			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				assess the recognition of child maltreatment in an ED based on the recommendations of the NICE guideline. We did see internal consistency in items of this score supporting its validity: when scores for hospital policy were high, child and/or parental scores were also high. However, while the NICE guideline provides general information and recommendations on the recognition of child maltreatment for health professionals, no practical			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				hands-on tools are given on how to organize this at a hospital level.			
43. McLean et al. **2012**	Non-experimental Quantitative Survey Exploratory	Nil	Perform a brief questionnaire evaluation assessing current pain intensity in each of eight body regions.	1. Small sample size/ Threat to Validity – Most importantly, consistent with other studies enrolling trauma survivors and the challenges of performing ethical studies of severely traumatized individuals in the acute aftermath of trauma, this study enrolled only a minority of potentially eligible women, creating the potential for selection bias.	9/11 82%	3	Good Sample Size Small

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				2. Selection Bias/ Threat to Validity - Data from two sources suggest that women sexual assault survivors consenting to the study may have had increased pain symptoms compared to women who did not consent. First, while unweighted group sizes are too small to generate confidence intervals, 2009 data from the National Hospital Ambulatory Care Survey (NHAMCS)20 found that among an estimated 328,272 sexual assault			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				survivors presenting to the ED in 2009 for care in the acute aftermath of sexual assault, 63% reported moderate or severe pain (data not shown), vs. 86% of women in our study. (2009 NHAMCS data is most accurate for comparison because this was the first year of the NHAMCS in which complete numeric rating scale pain data was collected, resulting in a marked reduction in missing pain rating responses.) Second, during the course of the pilot study, after respondent follow-up data			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				collected by the study team demonstrated that women did not feel coerced to provide data at the SANE time point (data not shown), the consent form was revised to allow use of participant responses at the time of SANE exam. Moderate or severe pain was present in 8/13 (62%) women who completed ED evaluation alone, vs. 86% of women who consented to both ED and one week evaluation. Importantly, while these estimates suggest that women recruited into the study may have had increased pain			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				symptoms, they confirm that moderate or severe pain is present in the majority of sexual assault survivors. 3. Generalizability/ Narrow Sample - An additional study limitation is that women sexual assault survivors in this study were drawn from the South-eastern United States. However, these women came from a wide variety of community settings, from intercity Baltimore to rural settings in Western North Carolina.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				4. Lack of data/ Selection Bias - Finally, available evidence suggests that the majority of sexual assault survivors never present for care or treatment after assault. Therefore the pain experiences of these women are not known. 5. Limited Scope - Longitudinal studies are needed which assess the epidemiology and etiology of pain			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				after sexual assault, and the potential impact of improved pain treatment on both long term pain and psychological sequelae.			
44. Kaltiso et al. **2021**	Non-experimental Quantitative	Implementation of an original 11-item human trafficking screening tool.	11-item human trafficking screening tool.	1. Threats to Reliability - The screening tool had some notable and informative challenges with implementation. Some patients were screened without a clear indication, and providers were continually re-educated on screening criteria. 2. Lack of data/ Retrospective Design - We are not able to assess the total number of patients for whom a screen	12/12 100%	3	High No control group/ intervention

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Tool Development study			should have been performed as indications included patient complaints and behaviors that are not readily documented in the patient record. 3. Attrition - Additionally, some patients declined to answer questions on the screen. Patients with an incomplete screen were not included in the data. Possible reasons for incomplete screens were lack of time, patient declining to answer all questions, and discontinuing screening after one positive response. 4. Weaknesses of the Screening Tool - Anecdotal feedback from nurses			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				included that the tool was too long. This was remedied by explaining that the tool would be studied for efficacy with intentions of reducing the length at a later date to reflect the most important questions, increasing their interest in using the tool. Additionally, some patients had difficulty understanding the questions. 5. Selection Bias - Another limitation in screening was the potential unconscious bias that trafficking primarily involves women, which may have led clinicians to preferentially screen female patients. Of all patients with a positive screen, 92.1% were female and 7.4% were male. None of the male patients in the study were ultimately identified as trafficked			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				persons. Similar percentages are reported in an international study of identified people being trafficked, although implicit bias, explicit bias, and differences in laws and definitions likely influenced those results. 6. Selection Bias/ Lack of Information - To our knowledge, there was only one patient with a positive screen who identified as transgender. This may reflect a limitation of the EMR, whereby patient gender is listed only as “male,” “female,” or “nonbinary.” 7. Threats to Validity - Since positive screens and likely HT status depended on patient response, the results of the			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				study are highly dependent on selfreporting. Verification of trafficking status using "criterion standard" criteria typically is not feasible for clinicians (e.g., no available witness statements or legal decisions), as is the case when managing victims of other forms of violence. Instead, a comprehensive evaluation by trained social workers was used to identify "likely" trafficked persons and those at high risk, so that resources may be offered. While social workers are appropriately licensed, they benefitted from additional education on HT. 8. Lack of data - 32.3% of the patients screening positive had an unknown HT status, mostly due to incomplete			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				documentation by staff. This was recognized early in the implementation process. A pop-up notice was implemented in the EMR to ensure that all providers were aware of a patient's positive screen. This notice also included the next steps of the pathway, prompting the clinician to offer a social work consult as follow-up to the positive screen. Additionally, if a patient endorsed an experience of HT and desired to leave their situation, their "patient status color" on the EMR ED track board changed to a unique color (orange). This reminded staff to be vigilant about not allowing visitors without patient consent.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				9. Selection Bias - Although the screening tool was designed to evaluate both sex and labor trafficking, no patients endorsed labor trafficking. This may have been due to limitations in the screening criteria, with insufficient inclusion of physical and mental health conditions associated with forced labor. Weight loss/poor nutrition and work-related injuries are known to occur in labor-trafficked persons, but the remaining inclusion criteria in our study tended to focus on conditions associated with sexual exploitation. The lack of identification of labor-trafficked persons may also reflect a low prevalence in our urban population; a failure to reliably perform the screening tool appropriately; or a reluctance of trafficked patients to endorse questions that might raise			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				concerns about exploitation and lead to deportation, arrest, violence, or other adversity. 10. Selection Bias - Additional research is needed to identify where labor-trafficked individuals typically seek care, how they view their work situation, and how clinicians may build the trust needed for patients to discuss their exploitation. Research is also needed to understand the best approach and language for inquiry and assessment for a labor trafficking experience. Due to these limitations, the current screening tool should be thoughtfully considered as a tool for sex trafficking screening rather than for HT in general.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
45. Gavril et al. **2011**	Non-experimental Quantitative Retrospective record review Explorative; Descriptive	Nil	Nil	1. Generalizability - The results of this study may not be generalizable to other programs conducting pediatric sexual abuse evaluations. 2. Selection Bias - In addition, the study group differed from the patients who did not have follow-up examinations in that the latter were more likely to be uncooperative for the examination and to have more examination findings that were normal. 3. Limited Scope - The impact of the followup examination on the	10/10 100%	3	High No control group/ intervention

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
				emotional recovery of the patient is unknown; for some patients, a more comprehensive assessment for STIs and an opportunity to discuss emotional recovery are benefits of the follow-up assessment that were not discussed or addressed in this study.			
46. Nittis et al. **2016**	Non-experimental Quantitative	Nil	Nil	Nil stated.	6/10 60%	3	High No clear Aim, Gap in Literature

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Retrospective record review Explorative; Descriptive						Knowledge, or Limitations presented; However research is of high quality, that affects

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
							practice directly.
47. Miller et al. **2015**	Experimental Quantitative	Standard Care SC involved meeting with a rape crisis advocate. The	Subjective Units of Stress (SUDs);	1. Small Sample Size - This study included a small sample with a high drop-out rate across time points, which influenced the analyses that could be conducted.	11/13 85%	1	Good

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
	Random Controlled Trial (RCT) Pre/Post intervention assessment	advocate provided information about what would happen during the examination and about services available in the community.	State Trait Anxiety Inventory (STAI); and Posttraumatic Stress Disorder Symptom Scale-Self Report (PSS-SR).	2. Attrition - Participants were questioned about whether the examination or participating in research increased their distress. Overall, they responded that neither increased distress, so this is unlikely to relate to the attrition. Attrition may, however, be related to the avoidance that often occurs after a sexual assault. and may be predictable considering the sample however, it affects statistical power and, as a result, the			Small sample size

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		Video Intervention This video focused on education & instruction of empirically effective coping strategies as well as modelling of such strategies.		confidence with which the findings can be interpreted. 3. Selection Bias - This limitation also has consequences on the generalization of the results, as the participants who participated in the follow-up assessments may be characteristically different than those who dropped out. Additional research needs to be conducted to determine if differences between the present			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		The video described normal physiological reactions that may occur after sexual assault. The video provided rationale and instructions for self-directed in-vivo exposure to		findings and those in previous studies are because of sample characteristics. 4. Limited Scope - There was no manipulation check in the study; thus, we were unable to examine the extent to which the women attended to the information in the video, if they liked it, or what components of the video were influential, if at all.			

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		sexual-assault-related cues (e.g., darkness). The video showed methods of using repeated exposure to reduce anxiety in typical sexual-assault-related cue situations.					

Author & Year	Design/ Methodology	Intervention	Measures/ Instrument	Limitations	Score	Level of Evidence	Quality of Evidence
		(e.g., sleeping with the light off at night).					

ANNEXURE 6: THEME AND SUB-THEME CODING TREE

THEME	SUBTHEME	ARTICLE
Screening Patients for Sexual Violence	Screening for Sexual Abuse/ Maltreatment of Children.	42. Hoedeman et al. - Survey/ Level 3/ High
		38. Louwers et al. - Record Review/ Level 3/ High
	Screening for Sex Trafficking/Child Sexual Trafficking.	26. Greenbaum et al - Tool Development/ Level 3/ High
		34. Hurst et al. - Tool Validation/ Level 3/ Good
		44. Kaltiso et al. - Tool Development/ Level 3/ High

THEME	SUBTHEME	ARTICLE
Emergency Medical Care	General Emergency Treatment (3).	2. Gilmore McKee et al - Record Review/ Level 3/ High
		1. Kaplan et al. - Record Review/ Level 3/ High
		10. Hornor et al. - Pre and Post Test/ Level 2/ High
	Post Exposure Prophylaxis (PEP) for HIV (9).	2. Gilmore McKee et al - Record Review/ Level 3/ High
		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good
		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		16. Reynolds et al. - Record Review/ Level 3/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High

		15. Ranney et al. - Record Review/ Level 3/ Good
	Testing and Prophylactic Treatment for STIs (8).	2. Gilmore McKee et al - Record Review/ Level 3/ High
		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		39. Fontenot - Survey/ Level 3/ High
		31. Kellogg et al. - Record Review/ Level 3/ High
		19. Britton et al. - Pre-Post Intervention/ Level 2/ High
		20. Schilling et al. - Record Review/ Level 3/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High
		15. Ranney et al. - Record Review/ Level 3/ Good
	Emergency Contraception (5).	2. Gilmore McKee et al - Record Review/ Level 3/ High

	Treatment of Pain (2).	12. Choi et al. - Quasi Experimental/ Level 2/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High
		15. Ranney et al. - Record Review/ Level 3/ Good
		40. Shaw & Coates - Record Review/ Level 3/ High
		43. McLean et al. - Survey/ Level 3/ Good
		2. Gilmore McKee et al - Record Review/ Level 3/ High
THEME	SUBTHEME	ARTICLE
Forensic Care	Physical Collection of Forensic Evidence (7).	37. Jancey et al. - Delphi/ Level 3/ High
		14. Campbell et al. - Pre-Post Intervention/ Level 2/ Good
		33. Hornor et al. - Record Review/ Level 3/ High
		46. Nittis et al. - Record Review/ Level 3/ High

		10. Hornor et al. - Pre-Post Intervention/ Level 2/ High
		15. Ranney et al. - Record Review/ Level 3/ Good
		40. Shaw & Coates - Record Review/ Level 3/ High
	Development and Use of Sexual Assault Kits (2).	27. Hoffmann-Walbeck H et al. - Intervention & Survey/ Level 3/ Good
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
	Interview & History Taking (2).	41. VanMeter et al. - Record Review/ Level 3/ Good
		15. Ranney et al. - Record Review/ Level 3/ Good
	Mandatory Reporting of Various Forms of Sexual Violence (1).	40. Shaw & Coates - Record Review/ Level 3/ High
	Structural Factors (3).	14. Campbell et al. - Pre-Post Intervention/ Level 2/ Good
		15. Ranney et al. - Record Review/ Level 3/ Good

		25. Buchbinder et al. - Qualitative/ Patients' experiences/ Level 3/ High

THEME	SUBTHEME	ARTICLE
Mental Health Care	Psychiatric Assessment (4).	6. Gilmore et al. - RCT/ Level 1/ Good
		36. Tarquinio et al. - Pre-Post Intervention/ Level 2/ Low
		1. Kaplan et al. - Record Review/ Level 3/ High
		7. Walsh et. al. - RCT/ Level 1/ Good
	Acute Interventions for PTSD/ ASD (7).	6. Gilmore et al. - RCT/ Level 1/ Good
		9. Bragesjö et al. - Quasi Experimental/ Open Trial/ Level 2/ Good
		29. Rothbaum et al. - RCT/ Level 1/ Good
		36. Tarquinio et al. - Pre-Post Intervention/ Level 2/ Low
		47. Miller et al. - RCT/ Level 1/ Good
		23. Gilmore et al - Intervention & Survey/ Level 3/ Low

		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
	Acute Intervention for Suicidal Ideation (2).	13. Walsh et al. - RCT/ Level 1/ Good
		23. Gilmore et al - Intervention & Survey/ Level 3/ Low
	Psychiatric Pharmacological Treatments (1).	2. Gilmore McKee et al - Record Review/ Level 3/ High
	New Treatment Modalities (6).	6. Gilmore et al. - RCT/ Level 1/ Good
		9. Bragesjö et al. - Quasi Experimental/ Open Trial/ Level 2/ Good
		29. Rothbaum et al. - RCT/ Level 1/ Good
		36. Tarquinio et al. - Pre-Post Intervention/ Level 2/ Low
		47. Miller et al. - RCT/ Level 1/ Good
		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
	Substance misuse (3).	7. Walsh et. al. - RCT/ Level 1/ Good

		11. Gilmore et al. - RCT/ Level 1/ Good
		17. Walsh et al. - RCT/ Level 1/ Good

THEME	SUBTHEME	ARTICLE
Follow Up Care for Survivors	Follow up Medical Care (8).	32. Chalmers et al. - Survey/ Level 3/ High
		37. Jancey et al. - Delphi/ Level 3/ High
		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		1. Kaplan et al. - Record Review/ Level 3/ High
		31. Kellogg et al. - Record Review/ Level 3/ High
		45. Gavril et al. - Record Review/ Level 3/ High
		8. Gilles et al. - Pre-Post Intervention/ Level 2/ Good
	Follow Up Mental Health Care (6).	21. Patel et al. - Survey/ Level 3/ High
		37. Jancey et al. - Delphi/ Level 3/ High

		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		1. Kaplan et al. - Record Review/ Level 3/ High
		45. Gavril et al. - Record Review/ Level 3/ High
		23. Gilmore et al - Intervention & Survey/ Level 3/ Low
		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
	Follow up Forensic or Legal Care (2).	1. Kaplan et al. - Record Review/ Level 3/ High

THEME	SUBTHEME	ARTICLE
Technological Aids	Telemedicine (4).	37. Jancey et al. - Delphi/ Level 3/ High
		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		1. Kaplan et al. - Record Review/ Level 3/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
	Video Interventions (6).	6. Gilmore et al. - RCT/ Level 1/ Good
		13. Walsh et al. - RCT/ Level 1/ Good
		47. Miller et al. - RCT/ Level 1/ Good
		7. Walsh et. al. - RCT/ Level 1/ Good
		11. Gilmore et al. - RCT/ Level 1/ Good
		17. Walsh et al. - RCT/ Level 1/ Good

	Electronic Screening (1).	34. Hurst et al. - Tool Validation/ Level 3/ Good
	Technological Aids for Post-Discharge Care (1).	23. Gilmore et al - Intervention & Survey/ Level 3/ Low

THEME	SUBTHEME	ARTICLE
Structural and Procedural Aids.	Procedures & Policies (16).	21. Patel et al. - Survey/ Level 3/ High
		37. Jancey et al. - Delphi/ Level 3/ High
		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good
		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		1. Kaplan et al. - Record Review/ Level 3/ High

		42. Hoedeman et al. - Survey/ Level 3/ Good
		8. Gilles et al. - Pre-Post Intervention/ Level 2/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		19. Britton et al. - Pre-Post Intervention/ Level 2/ Good
		20. Schilling et al. - Record Review/ Level 3/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
		15. Ranney et al. - Record Review/ Level 3/ Good
		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
		27. Hoffmann-Walbeck H et al. - Survey/ Level 3/ Good
		40. Shaw & Coates - Record Review/ Level 3/ High
	Order Sets and Clinical Pathways (9).	37. Jancey et al. - Delphi/ Level 3/ High

		3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good
		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		8. Gilles et al. - Pre-Post Intervention/ Level 2/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		19. Britton et al. - Pre-Post Intervention/ Level 2/ Good
		20. Schilling et al. - Record Review/ Level 3/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High
	Models of Care (4).	21. Patel et al. - Survey/ Level 3/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
		24. Lecher et al. - Survey/ Level 3/ High

		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
	Patient Education Materials (1).	16. Reynolds et al. - Records Review/ Level 3/ Good
	Quality Improvement and Monitoring (4).	4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good
		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High

THEME	SUBTHEME	ARTICLE
Environmental & Health Care Worker Factors	Health Care Worker Beliefs and Behaviours (10).	32. Chalmers et al. - Survey/ Level 3/ High
		37. Jancey et al. - Delphi/ Level 3/ High
		1. Kaplan et al. - Record Review/ Level 3/ High
		44. Kaltiso et al. - Tool Development/ Level 3/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
		15. Ranney et al. - Record Review/ Level 3/ Good
		24. Lecher et al. - Survey/ Level 3/ High
		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
		27. Hoffmann-Walbeck H et al. - Intervention & Survey / Level 3/ Good
		28. Chew et al. - Survey/ Level 3/ High

	Department Environmental Factors (7).	4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good
		34. Hurst et al. - Tool Development/ Level 3/ Good
		44. Kaltiso et al. - Tool Development/ Level 3/ High
		22. Walsh et al. - Survey/ Level 3/ High
		23. Gilmore et al - Survey/ Level 3/ Low
		15. Ranney et al. - Record Review/ Level 3/ Good
		27. Hoffmann-Walbeck H et al. - Survey/ Level 3/ Good
	Barriers to Care (13).	37. Jancey et al. - Delphi/ Level 3/ High
		16. Reynolds et al. - Record Review/ Level 3/ Good
		39. Fontenot - Survey/ Level 3/ High
		9. Bragesjö et al. - Pre-Post Intervention/ Level 2/ Good

		1. Kaplan et al. - Record Review/ Level 3/ High
		42. Hoedeman et al. - Survey/ Level 3/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		30. Hoehn et al. - Pre-Post Intervention/ Level 2/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High
		23. Gilmore et al - Survey/ Level 3/ Low
		15. Ranney et al. - Record Review/ Level 3/ Good
		25. Buchbinder et al. - Qualitative/ Patients' View/ Level 3/ High
		27. Hoffmann-Walbeck H et al. - Survey/ Level 3/ Good
	Working within a MDT (8).	3. Silva-Nash - Pre-Post Intervention/ Level 2/ Good
		4. Scannell & Berger - Pre-Post Intervention/ Level 2/ Good

		5. Saadatzadeh et al. - Pre-Post Intervention/ Level 2/ Good
		1. Kaplan et al. - Record Review/ Level 3/ High
		42. Hoedeman et al. - Survey/ Level 3/ Good
		18. Schilling et al. - Pre-Post Intervention/ Level 2/ High
		20. Schilling et al. - Record Review/ Level 3/ High
		22. Walsh et al. - Intervention & Survey/ Level 3/ High

ANNEXURE 7: ETHICS WAIVER FOR A REVIEW OF INFORMATION IN THE PUBLIC DOMAIN

UNIVERSI.TY OF THE X, WITWATERSRAND. 101IANN ESBURG	**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)**

Office of the Deputy Vice-Chancellor (Research & Innovation)

TO: Mr ND Quiroga
School: Therapeutic Sciences
Department: Nursing Education
Medical School
University

E-mail: dylanquiroga@yahoo.com

CC: Supervisor: Dr M Bates
<Meghan.Botes@wits.ac.za> and <HREC-Medical.ResearchOffice@wits.ac.za>

FROM:
Mr Iain Burns
Human Research Ethics Committee
(Medical) Tel: 011 7171252

E-mail: lain.Burns@wits.ac.za

DATE: 30/03/2022

REF: *R14/49*

PROTOCOL NO: W-CBP-220330-02 (This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)

PROJECT TITLE: *The emergency management of patients who have experienced sexual violence: an integrative literature review*

Please find attached the Ethics Waiver Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to the Government funding of the University.

MSWorks2000/lain0007/ClearScanWaiver.wps

UNIVERSITY OF THE X \NITWATERSRAND. IOIIANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research & Innovation)

30/03/2022

Ref: W-CBP-220330-02

TO WHOM IT MAY CONCERN

Waiver: This certifies that the following research does not require clearance from the Human Research Ethics Committee (Medical)

Investigator: Mr ND Quiroga
Student No. (if appropriate): 727841
Staff No. (if appropriate):

Supervisor: Dr **M** Botes

School: Therapeutic Sciences
Department: Nursing Education
Medical School
University

Project title: *The emergency management* of *patients who have experienced sexual violence: an integrative literature review*

Reason: Review of information in the public domain
No human participants will be involved in the study

Dr CB Penny
Chairperson: Human Research Ethics Committee (Medical)

Research Office Secretariat:
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Website:
https://www.wits.ac.za/research/researcher-support/research-ethics/ethics-committees/

ANNEXURE 8: TITLE APPROVAL FROM WITS HEALTH SCIENCE FACULTY

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

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19 May 2022
Person No: 727841
PAG

Mr ND Quiroga
83 3rd Avenue
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2092
South Africa

Dear Mr Neil Quiroga

Master of Science in Nursing: Approval of Title

We have pleasure in advising that your proposal entitled *The emergency management of patients who have experienced sexual violence: An integrative literature review* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

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