MASTER'S DEGREE IN CLINICAL PSYCHOLOGY

ANXIETY AS A MEDIATOR OF THE ASSOCIATIONS BETWEEN STRESSFUL LIFE EVENTS AND SOCIAL MEDIA USE INTENSITY IN YOUNG ADULTS

A Research Report completed in partial fulfilment for the degree of

Master of Arts in Clinical Psychology

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1. Table of Contents

List of Tables

List of Figures

Plagiarism Declaration

"I declare that this research project is my own, unaided work. It has not been submitted before any other degree or examination at this or any other university."

Signature: _____MRE Ramoroka_____

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Abstract

Introduction: This study quantitatively explored the associations between SLEs, anxiety, and social media use intensity. The study explores whether anxiety mediates the relationship between SLEs and social media use intensity across all four domains. This study further aims to explore whether social media use intensity, operationalized as an avoidance coping strategy, is possibly due to poor emotional regulation and distress tolerance skills. The first-time undergraduate student population are often inadequately prepared for the transition to university during a critical period of their development. As a result, they may drift towards health compromising behaviours such as intense social media use. The findings will set a precedent for the development of preventative programs and/or interventions in order to assist young adults with emotional regulation.

Methods: This was a cross-sectional design that was analysed quantitatively. The participants were invited to participate in online questionnaires which assessed stressful life events, anxiety, and social media use intensity. While a total sample of 402 students completed parts of the online survey questionnaires, a final sample of 360 participants was used in the study as their data sets were complete for all the variables. The Social Readjustment Rating Scale, Beck's Anxiety Inventory, and the Facebook Intensity Scale were the measures used.

Results: Positive associations were found between SLEs, anxiety and social media use intensity. Anxiety mediated the relationship between SLEs and social media use intensity across all four domains. This reflected that social media use intensity is a form of avoidance coping mechanism that emerges due to poor emotional regulation and distress tolerance skills.

Conclusions: The present study highlights the challenges experienced and how to set a precedent for the development of preventative programs and interventions.

Keywords: *stressful life events, anxiety, avoidance coping, social media use intensity*

1. Chapter 1: Introduction

1.1 Introduction

Mental health in young adults continues to be a growing public health concern worldwide. Mental health problems such as anxiety and depression culminate and are often first diagnosed during adolescence and young adulthood (World Health Organisation, 2019). This may be due to a range of psychological, emotional, social, and cognitive changes that occur during this developmental period (Aktekin et al., 2001; Eisenberg, Gollust, Golberstein & Hefner, 2007). Concurrent with these changes are important transitions where the adolescent becomes a young adult and navigates greater autonomy in novel contexts such as a university environment. Many students do not feel adequately prepared for this transition as they navigate many disruptions during such a critical period of their development. These disruptions include health-compromising behaviours (e.g., drug and substance abuse), poor academic performance (Adewuya, Ola, Aloba, Mapayi & Oginni, 2006; Bayram & Bilgel, 2008; Pillay & Ngcobo, 2010), and stressful life events (Hetolang & Amone-P'Olak, 2018). For this research, the terms, "young adults" and "university students" will be used interchangeably to refer to the same group of individuals, with a target age of 18 to 24 years. These individuals also represent the majority of the first-time undergraduate student population in university.

South Africa's higher education sector is challenged by increasing drop-out rates for first-year students. Students from disadvantaged backgrounds are at the greatest risk of not completing their studies due to several stressful life events (SLEs) and challenges (Mdepa & Tshiwula, 2012; Moeketsi & Maile, 2008). Student mental health and socio-economic difficulties are some of the most significant predictors of negative outcomes among students studying at universities (Clinciu, 2013; Davidowitz & Schreiber, 2008; Wintre & Yaffe, 2000). The present study seeks to explore student mental health in relation to the challenges reported by students. Young adults are the future workforce of the country. This research aims to explore the associations between stressful life events, anxiety, and social media use intensity (four facets). This study further aims to explore whether social media use intensity, operationalized as an avoidance coping strategy, is possibly due to poor emotional regulation and distress tolerance skills. This paper also aims to highlight the challenges experienced and how to set a precedent for the development of preventative programs and/or interventions.

There is a high mobile and social media penetration among the youth of today (Harmon, 2017). Social media platforms such as Twitter, Facebook, and Instagram are no longer solely being used

for leisure as university students are increasingly using these platforms for other purposes such as academic research and income (e.g. social media influencers) (Singh et al., 2020). As such, social media and its multifaceted uses are increasingly at the centre of young adults' lives.

Until recently, Facebook was one of the most widely used platforms in South Africa with an estimated 17.6 million users (Clement, 2019). Facebook is a convenient, inexpensive, and revolutionary site that has simplified communication and has been made available in 37 different languages worldwide (Clement, 2019). Additionally, some mobile networks in South Africa have made the platform accessible at zero cost for some users, making it even more appealing and accessible. The wide reach of Facebook worldwide demonstrates the significant role the platform plays in human social engagement and communication (Labrague, 2014). However, it is clear that social media platforms such as Facebook are double-edged swords that offer opportunities for productivity on the one hand with great potential for undesirable consequences on the other. The consequences include university students using social media to cope with their anxiety and SLEs.

Recent research has highlighted that South African students have very high levels of stress, anxiety, suicidality, and depression (Bantjes, Kagee, McGowan & Steel, 2016; Makhubela, 2020). Additionally, having anxiety disorders is a risk factor for suicide ideation in South African university students (Bantjes et al., 2016), making it a large public concern considering the current rates of successful suicides in South African university students (Bantjes et al., 2016). This could be partly attributed to the various stressors the average young adult is exposed to in South Africa across their lifetime. South Africa is plagued by challenges such as poverty, HIV/AIDS, gender-based violence, crime, child abuse, inequality, and substance abuse, among others (Bojuwoye, 2002; Mason, 2017). Exposure to high levels of SLEs may both predispose youth to mental health challenges and exacerbate existing difficulties. It is therefore important to explore the role that these SLEs play in the mental health of South African youth. Although anxiety is more diagnosed than depression in young adults, more research has been conducted on the associations between SLEs and depression (Hetolang & Amone-P'Olak, 2018). However, the research suggests a robust association between SLEs and both mental health issues (anxiety and depression), which remains highly prevalent in the young adult university student population. Research has tended to focus on understanding the pathways that lead from SLEs to poor psychological outcomes such as anxiety and depression. However, these psychological outcomes, particularly anxiety, may be further associated with maladaptive coping strategies such as substance use, self-harm, avoidance, etc, suggesting that anxiety may be both an outcome *and* a mediator in the aftermath of SLEs. The

present study sought to explore whether anxiety plays a mediating role in the relationship between SLEs and excessive social media usage in this sample of young adults.

1.2 Rationale

Research stipulates that adversities and SLEs are associated with psychological distress and physical illness (Corcoran & Mcnulty, 2018; Dohrenwend & Dohrenwend, 1974; Nurius, Logan-Greene & Green, 2012; Shanahan, Copeland, Costello & Angold, 2011). SLEs have been associated with numerous mental health problems such as posttraumatic stress disorder (PTSD) (Bantjes et al., 2016), depression (Hetalong & Amone-P'Olak, 2018), hostility, and anxiety (Scealy, Phillips, & Stevenson, 2002). However these associations are often complex, and at times, recursive. For example, SLEs could be associated with increased anxiety, which in turn, could amplify poor coping. Anxiety is particularly associated with avoidance, which often reinforces and exacerbates the anxiety (Daniels & Holtfreter, 2017; Grant et al., 2013). In this instance, avoidance could be associated with avoidance-coping, which has been found to be associated with poorer psychological outcomes (Levin, Ilgen & Moos, 2007). It is therefore important to understand the many ways that anxiety operates in the face of SLEs as this understanding can contribute towards developing programmes that mitigate against poor outcomes in young adults who are at risk of adverse outcomes due to exposure to high levels of SLEs.

Social media has gained popularity and is increasingly becoming a part of the daily lives of university students and its usage may have a dual impact on their wellbeing (Kalpidou, Costin & Morris, 2011; Labrague, 2014). The subpopulation of young adults in university is particularly prone to SLEs, mental health problems such as anxiety, and intense use of social media (Wiederhold, 2020). The relationships between exposure to SLEs, anxiety, and social media are not well understood.

Many previous studies have predominantly researched depression and have drawn positive associations between SLEs and depression (Adewuya et al., 2006; Hetolang & Amone-P'Olak, 2018). However, anxiety is more common among university students and has been under-researched (Bantjes et al., 2016). According to the World Health Organisation (2019), anxiety is the ninth most prevalent pathology found in young adults which leads to morbidity. It is a debilitating disorder that impairs one's functioning (Sadock, Sadock, & Ruiz, 2015), negatively affects academic participation and performance (Hamad, Fernald, Karlan & Zinman, 2007), inhibits social participation (Caplan, 2007), and diminishes the overall quality of life (Adewuya et al., 2006; Eisenberg et al., 2007). Anxiety is also associated with maladaptive coping such as self-medication

and avoidance (Daniels & Holtfreter, 2019). Social media, when in excess, may be operationalized as a form of avoidance, which needs to be systematically explored.

The global pandemic has placed the internet at the centre of work, social, and learning as the world has tried to cope with the threat of the coronavirus (COVID-19). South Africa has not been spared as people of all ages have had to adapt and conducted most of their lives virtually over the past couple of years. University students have found themselves having to work and even socialise online in order to adhere to the social distancing laws enforced by the South African government (2020). The additional stress caused by lockdowns, job losses, remote learning, and COVID anxiety has been immeasurable, posing a bigger threat to the mental health of young adults navigating varsity life (Adewuya et al., 2006; Eisenberg et al., 2007; Hetolang & Amone-P'Olak, 2018; Labrague, 2014).

Anxiety has also been linked to intense social media use (Scealy et al., 2002). Anxious young adults may resort to intense social media use to cope with their anxiety or avoid in-person social interactions. This increases the likelihood of social isolation (Scealy et al., 2002), which may, in turn, increase social media usage. However, this paper is interested in the impact of anxiety on social media use intensity. Social media has mediated the virtual world with reality and has simplified the communication process; it remains a pivotal part of the maintenance of relationships which is essential for this population. However, social media may be overused if it is used as an escape or as an avoidance coping mechanism (Labrague, 2014). Robert Kraut and his colleagues conducted a longitudinal study to explore the impact of the internet on psychological health from the year 1995 to 1996 (Kraut et al., 2002; Rosen, Whaling, Rab, Carrier, & Cheever, 2013). The findings concluded that more time spent on the internet indicated increased feelings of loneliness and the onset of depressive symptoms, both common among anxious people (Caplan, 2007). This means that if university students continue to use social media as a coping tool, a series of mental health issues will emerge. Over time, intense social media use can cause poor performance and lead to the onset of other mood disorders resulting in comorbidity (Kraut et al., 2002). This study aims to assess the associations between SLEs, anxiety and social media use intensity. This study further aims to explore whether social media use intensity, operationalized as an avoidance coping strategy, is possibly due to poor emotional regulation and distress tolerance skills where anxiety is the mediator between SLEs (IV) and social media use intensity (DV). The results from this research will shed some light on the challenges of students who have anxiety in the face of SLEs, and whether this places them at risk for excessive social media usage.

1.3 Theoretical framework

The Avoidance Coping Theory will be utilized to understand the relationship between stressful life events, anxiety, and social media use intensity. Various authors such as Cronkite and Moos (1995); Penley, Tomaka, and Wiebe (2002) posit that avoidance coping is closely linked to discomfort and depression because it involves cognitive and behavioural activities aimed at denying, diminishing, or avoiding directly dealing with stressful demands. In addition, Holahan, Moos, and Bonin, (1999), note that the most consistent associations between coping efforts and emotional distress involve avoidance coping. According to the American Psychological Association (2020) avoidance coping (which is also termed avoidant coping, and escape coping) is described as a type of maladaptive coping in which a person attempts to deal with the emotional response to stressful experiences by altering their behaviour to avoid thinking about, experiencing, or doing painful things. In other words, the individual avoids processing the underlying core stressor and instead engages in techniques that suppress and avoid the trigger as an attempt to regulate the intense emotional response (anxiety). Scott (2021) states that avoidance coping involves trying to avoid stressors and associated emotional responses rather than dealing with them. Avoidance coping is one of the chief types of coping often used to deal with the extrinsic and intrinsic sources of stress ranging from minor to major life's adversities (Balmores-Paulino, 2018).

Individuals who employ avoidant coping strategies often present with negative health and their psychological wellbeing is compromised (Blalock & Joiner, 2000). Research found that adolescents who used avoidance coping strategies pretended as though their stressors did not exist. For example, social media use would alleviate their experience of a stressful life event (i.e. academic difficulties). It alleviates the stressor momentarily, however, it was found these adolescents isolated themselves and withdrew from people, and presented with fatalistic attitudes. Research has found that in the adolescent population group, avoidance coping style positively correlates with mental health morbidity (psychological distress), low self-esteem, and poor social adjustment (Chan, 2003; Tolor & Fehon, 1987). As a result, avoidance continues to be a central maintenance factor that is associated with anxiety and depression (Grant et al., 2013). Consequently, a reciprocal and recursive relationship develops between the feeling states (anxiety/depressive symptoms) and the avoidance coping method. Excessive social media epitomises the definition of avoidance coping as it is often a behavioural attempt to avoid thinking about or dealing with one's life stressors. This means that social media use may act as a negative reinforcement as it momentarily reduces anxious affect, only to amplify anxiety as the stressors remain unsolved. However, for the purposes of this

research, the focus will be the first part of this relationship where it is hypothesized that people who are exposed to high levels of SLEs may be more likely to experience increased anxiety which may then be associated with intense social media usage as they try to regulate the anxiety. To understand this further, the transition and its impact from high school to higher education for first-time undergraduates will be discussed

2. Chapter 2: Literature review

2.1 Transition to university

Well-developed learning, reading, and academic literacy abilities, as well as life skills, are key factors in academic performance at the university level. However, these aspects also depend on many other factors such as how well a student transitions from high school to university. McMillan (2013) states that transitioning to university is difficult for students. Understanding the process of change or transition from one phase to another can inform and provide reasons for the causes of anxiety amongst students. Various studies conducted in the past have attributed emotional behaviour to this transitional process. According to various authors such as Lowe and Cook (2003), Pargetter (2000), and Smith (2004), increased effort, academic standards, loneliness, and homesickness, are all challenges that contribute to transitioning.

Transitioning to university involves learning about new systems and adapting to a new sub-culture and associated processes and information. As Lave (1991) calls it, becoming an 'insider' into an innovative way of doing things. The university setting and high school settings differ as they have different demands, expectations, and levels of support. The majority of students succeed in making this shift, while others fail. Nel, Troskie-de Bruin, and Bitzer (2009) note that different researchers have, however, indicated that students are progressively underprepared for higher education studies, resulting in high drop-out rates and poor throughput. Wickham, Jones, Coetzee, & Bailey (2008) argue that it is the obligation of universities to make the transition from high school to university as smooth as possible. However, most universities focus on creating social linkages with less focus on coping and problem-solving abilities. This may leave those with poor coping skills at risk as they become independently exposed to more and more SLEs.

2.2 SLEs in university students

Stressful life events (SLEs) are defined as events that cause stress or disrupt the equilibrium of normal functioning in an individual, it is further defined as a specific interaction between an individual and their environment that the individual perceives as exhausting or exceeding their resources and harming their well-being" (Lazarus and Folkman, 1984). This disruption is often accompanied by a stress response that includes the autonomic nervous system and may subjectively feel like anxiety (Swift, Cyhlarova, Goldie & O'Sullivan, 2014). This discomfort or anxiety can only be resolved by reaching a new equilibrium state or returning to a state of homeostasis (Pillay & Ngcobo, 2010). Some examples of these events in university students include financial problems, death of loved ones, personal injury/illness, relationship problems, and changes in living conditions

only to mention a few (Dahlin, Joneborg & Runeson, 2005; Hetolang & Amone-P'Olak, 2018). The level of intensity of the disruption in the face of SLEs depends on how serious the perceived threat of that SLE is. Mosallam and Thabet (2016) state that individual and contextual factors influence the individual's stress experience, as well as their cognitive perception and behavioural responses to the perceived stressor. In other words, the source of a person's stress can be both internal and external. The external aspects deal with the environment with which the person interacts. Hence, Mosallam and Thabet (2016) state that the university's environment, systems, regulations, obligations, openness, independence, and freedom can create great difficulty for the student in facing and managing stressful situations. A plethora of possible outcomes can result from SLEs. Some university students may thrive in the face of adversity, while others may experience poorer outcomes such as mental health morbidity, drug and substance abuse, academic failure, and increased social media use only to name a few.

Numerous past studies have explored the direct negative outcomes of SLEs with only a smaller proportion of research exploring factors that may mediate or modify the associations between SLEs and negative outcomes. It is very important to understand the factors, processes, and mechanisms that may mediate adverse outcomes in the face of SLEs in young adults/university students. The pathways towards problematic social media use (Facebook, Twitter, Instagram, etc.) are not well understood. The present study seeks to explore student mental health in relation to the challenges reported by the students of the University of the Witwatersrand. Young adults are the future workforce of the country and their wellbeing is pivotal. This paper further aims to highlight the challenges experienced and how to set a precedent for the development of preventative programs and/or interventions.

2.3 Causes and the impact of SLEs in university students

Cisler et al., (2012) attribute SLEs to traumatic events such as childhood abuse (physical, emotional, and psychological), assault, bullying, and rape, although less prominent, have been extensively examined in relation to post-traumatic stress disorder. South Africa has a high number of the abovementioned. Low et al. (2012) add that the most prevalent stressful life events in adolescents include among others, parental divorce, newly blended families, and changes in educational and home environments. Moreover, researchers agree that big stressful life events, such as the death of a spouse, sexual assault, or receipt of an impending death diagnosis, are examples of large stressful life events that are expected to trigger psychological and physiological stress reactions in the average person (Cohen, Murphy & Prather, 2019; Hammen, 2005).

SLEs have been associated with numerous mental health problems such as posttraumatic stress disorder (PTSD) (Bantjes et al., 2016), depression (Hetalong & Amone-P'Olak, 2018), hostility, and anxiety (Scealy et al., 2002). Although research abounds regarding the relations between SLEs and PTSD or depression, research is scarce on the associations between SLEs, anxiety, and social media use intensity. According to Low et al., (2012) stressful life events are associated with mood disorders in adults. Bukstein (2005) found that mental health and substance abuse disorders are among the most frequent health problems among teenagers, with prevalence estimates of 15% for depression and 10% for substance abuse in population-based studies. The results of SLEs as identified by Jaycox et al. (2009) include underachievement in educational domains, poor socialisation, developmental delays in age-appropriate social skills, criminality, and an increased risk of suicide are linked to these diseases' adversities. The subpopulation of young adults in university is particularly prone to SLEs, mental health problems such as anxiety, and intense use of social media (Facebook, Instagram, YouTube, WhatsApp, etc.), which, in turn, affects their studies, often leading to poor academic performance or drop out (Hamad et al., 2007). This further highlights the poor coping strategies the students have.

Many studies have investigated the prevalence of SLEs in young adults. However, little is known about the prevalence of SLEs in South African university students and its associations with anxiety and social media use intensity. A large majority of undergraduate university students fall within the 18 - 24 age range which is an important developmental stage that is characterized by a series of transitions the individual undergoes. In accordance with Erikson's psychosocial stages of development, this population group is within these two stages *Identity vs Role Confusion* and *Intimacy vs Isolation*. These stages involve searching for a sense of their identities and exploring different roles in different relationships (parents, friends, romantic relationships, etc.) which can impact their emotional and psychological states (Darling-Fisher & Leidy, 1988). The major common transitions include decreased supervision from primary caregivers & educators/lecturers; the adjustment to increased freedom; relationship break-ups and increased sexual activities only to mention a few (Hetolang & Amone P'Olak, 2018; Rhoades, Kamp Dush, Atkins, Stanley & Markman, 2011). This means they are more susceptible to being exposed to multiple SLEs simultaneously and this places their mental health at risk (Hetolang & Amone-P'Olak, 2018; Rhoades et al., 2011); additionally, it may act as a risk factor for intense social media use.

A study conducted on Botswana university students found that males reported more SLEs as opposed to females (Hetolang & Amone-P'Olak, 2018); this is an unconventional find which is interesting because it may be attributed to the societal expectations placed on men cross-culturally.

Men are expected to be providers and financially competent and these expectations place a large amount of pressure on them. "Relationship difficulties" is the most prevalent and most common SLE experienced by UK, Australian, and South African students (Andrews & Wilding, 2004). While these are life stressors that all students are faced with, their impact varies on different individuals. The Social Readjustment Rating Scale (SRRS) is a scale that was created to quantify the impact of these different life stressors on individuals. However, they are weighed differently because some cause significantly more disruption than others. For instance, the “death of a loved one” will have a different impact on stress as opposed to “not getting desired grades”. Anxiety is often the initial response that emerges from life stressors as it allows a person to assess their coping resources and whether they surpass the demands of the stressors. At low levels, anxiety promotes and encourages problem-solving, however, it can be debilitating at high levels.

2.4 Anxiety

Whether it's about preparing for a job interview, meeting a partner's family for the first time, or the thought of parenthood, everyone has anxiety at some point in their lives. In the case of university students, this could be before writing a test or exam, submitting an assignment, going to class, and so forth. Anxiety is characterized as a goal-directed negative mood state that is accompanied by some bodily symptoms that can cause distress, fear, and discomfort (Ehlers & Clark, 2000; Barlow, 2004). It is associated with bodily signals such as elevated heart rate and adrenaline, as well as changes in one’s emotional state, such as concern or apprehension (Swift et al., 2014). The fear experienced can be related to real or imagined threats or the anticipation of future threats (Barlow, 2004). Anxiety is commonly experienced at normal rates by individuals and is an adaptive response to circumstances. In these circumstances, it increases and improves performance (National Institute of Mental Health, 2018). Swift et al., (2014) further stated that anxiety serves as a protective function that alerts one to danger, risk and can help motivate. It assists individuals in assessing possible risks and appropriately responding to them, by accelerating our reflexes or focussing our attention. At low levels, anxiety is beneficial as it motivates performance and problem-solving. However, at higher levels, anxiety is debilitating, causes significant emotional distress, and negatively impacts functioning, performance, and wellbeing (National Institute of Mental Health, 2018 Sadock et al., 2015). Moss (2002) states that anxiety disorder involves a crippling and lingering process that disrupts the normal course of life. High levels of anxiety are seen in university students, and these are associated with difficulties in adjustment, poor academic performance, student burnout, poor student engagement, and poor social relations (Pascoe, Hestick & Parker, 2020; Vitasari, Wahab, Othman, Herawan, & Sinnadurai, 2010). These behavioural

disruptions have the potential to impact their academic participation, as well as their social skills which may negatively impact their prospects of future employment given that they are the future workforce. Furthermore, given that South Africa is a developing country that has a range of social factors; this may also contribute to the onset of anxiety disorders.

Anxiety creates barriers in the process of adjusting and simultaneously impacts one's concentration and attention (Vitasari, Wahab, Othman, Herawan, & Sinnadurai, 2010). As anxiety levels rise in the face of life stressors, an individual seeks to regulate by using a variety of coping skills. Effective coping often results either in reduction of anxiety through processes such as problem-solving (elimination of the stressor), or cognitive appraisal that diminishes the threat of stressors and reduces anxiety. However, high levels of anxiety are associated with poor coping skills such as self-medicating on substances or avoidance coping such as social media overuse (Keyes, Hatzenbuehler, & Hasin, 2011; Scealy et al., 2002). These coping strategies may be used to alleviate the physical and psychological symptoms of anxiety and are at risk of becoming maladaptive over time. Maladaptive coping mechanisms are considered problematic because they leave the primary source of the stressor unresolved.

South African university students struggle to develop adaptive coping strategies early in their lives and they come to university with increased susceptibility to mental health issues due to their early exposure to multiple SLEs. This is evident in how SA has been labelled a nation of drinkers by the World Health Organization (WHO) in the 2018 global status report. South Africa (SA) ranks sixth globally for alcohol consumption, this is a public concern because it depicts the level of poor coping, more specifically avoidance coping. Moreover, the high prevalence of substance abuse is found within the university population (Van Walbeek & Chelwa, 2019). Substance use may be exacerbated by high SLEs and anxiety which means social media use is at risk of being used similarly – to cope with the internal overwhelming state. It is important to add that substance use is more of a conscious process whereas social media use is less conscious. An individual would intend to just check one message, and they find themselves spending hours on different social media platforms. Therefore, understanding the associations between SLEs and anxiety will assist researchers in understanding the development of interventions that will help minimize the use of unhealthy coping mechanisms such as intense social media use in South Africa (Pillay & Ngcobo, 2010; Van Walbeek & Chelwa, 2019).

There are different severity levels of anxiety experienced by students from the different faculties/fields of study. Aktekin et al. (2001) found that first-year medical students had prevalent

anxiety in contrast to economic students. This may be attributed to the different academic pressures involved in the courses. These pressures may qualify as SLEs to some students based on their different levels of resilience or capacity to cope. Another study that was conducted on UK undergraduate students found that "financial difficulties" have an impact on increasing the severity of anxiety and decreasing academic performance (Andrews & Wilding, 2004). Moreover, in support of those findings in South Africa, a study conducted by Letseka and Breier (2008) found that one of the leading reasons for the high drop-out rates from universities is attributed to the lack of funds/ financial difficulties (Pillay & Ngcobo, 2010). A large population of university students is affected by "financial difficulties" because funding is required, this is because many middle and lower-class, especially the black population, are disproportionately poor. This large inequality may be attributed to the injustices the black race has suffered as a result of apartheid. Dealing with the stress of financial difficulties may be anxiety-provoking. Andrews & Wilding (2004) found that anxiety has no impact on academic performance, which is interesting because it contrasts the literature, however, this is attributed to the idea that anxiety produces worry, which has a dual role. Worry has a negative impact on the efficient processing of information (Andrews & Wilding, 2004). However, it motivates students to use strategies that can compensate & increase performance effectiveness (Andrews & Wilding, 2004). This is plausible reasoning because most students experience anxiety due to their desire to succeed.

Anxiety may also have devastating implications on university students' social habits. These emerge as a result of avoidance coping (Holahan, Moos, Holahan, Brennan, & Schutte, 2005). These maladaptive behaviours include the constant and subsequent use of these social media platforms which may cause students to engage in intense social media use which over time, may become problematic. It is important to note that social media has become widespread over the years. It is currently known as the source of social reinforcement and validation (Singh et al., 2020). This platform continues to provide people with opportunities to interact on a social and professional level which is empowering during this digital age (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Forming relationships, sharing ideas, creating a social presence and image has become simplified. Despite the vast opportunities this platform offers, it may become maladaptive if it is used as a self-regulating or self-soothing tool.

2.5 Stressful life events (SLEs), anxiety, and social media use intensity

Anxiety's link to intense social media use (Scealy et al., 2002), posits that anxious university students may resort to intense social media use in an attempt to regulate the intense emotions associated with anxiety or to avoid face-to-face social interactions. Consequently, this increases the

likelihood of social isolation (Scealy et al., 2002); therefore, the subpopulation of anxious young adults who experience SLEs and anxiety may go on to abuse social media intending to cope. Social media has gained popularity and is increasingly becoming a part of the daily lives of university students and its usage has a dual impact on their wellbeing – both positive and negative (Kalpidou et al., 2011; Labrague, 2014). On the one hand, it has mediated the virtual world with reality and has simplified the communication process by playing a vital role in the maintenance of relationships which is pivotal for this population given the current COVID-19 pandemic. On the other hand, it may be overused and overdependence can develop which may lead to problematic internet use (Labrague, 2014). Robert Kraut and his colleagues conducted a longitudinal study to explore the impact of the internet on psychological health from the year 1995 to 1996 (Kraut et al., 2002; Rosen et al., 2013). The findings concluded that more time spent on the internet indicated increased feelings of loneliness and the onset of depressive symptoms, both common among anxious people (Caplan, 2007). Therefore, it posits that increased anxiety can exacerbate social media use. With that said, it is important to note that over time, intense social media use can exacerbate existing anxiety and create a cyclical relationship. Consequently, this may lead to the onset of other mood disorders resulting in comorbidity (Kraut et al., 2002).

There is high mobile and social media penetration (Harmon, 2017). Social media platforms such as Twitter, Facebook, and Instagram are no longer solely being used for leisure; university students are also making use of social media for academic purposes (research) and part-time jobs i.e. social media influencers (Singh et al., 2020). However, for the purposes of this research, we are interested in individuals that use social media for leisure and are simply consumers of this content. There are many users on social networking platforms. In South Africa today, it is estimated that about 17,6 million people use Facebook (Clement, 2019). Facebook is a convenient, inexpensive, and revolutionary site that has simplified communication; this site has been made available in 37 different languages worldwide – this depicts how it has become a significant part of human social engagement and communication (Labrague, 2014). Young adults find it easy to communicate through screens because it minimizes the probability of confrontation which maintains the idea that they will be safe and protected regardless of the nature of the interaction. This is what makes social media use a common coping mechanism for university students. A study found that people who are experiencing adversities that involve parental problems are more likely to use the internet for entertainment and relationship maintenance (Leung, 2007). This posits that the higher the levels of stress experienced by university students, the more likely they are to use social media to cope. This may be attributed to the sub-population of students have poor interpersonal problem-solving skills,

and this positively correlates with less effective coping strategies (Holahan et al., 2005). As a result, students may resort to intense social media use in order to manage their anxiety and SLEs.

According to research conducted by Nagel, Remillard, Aucoin, and Takenishi (2018) the vast majority of students have used social media for many years to date. The findings stand at 95.8% for Facebook with it being the most popular social media platform. Other platforms include YouTube, Instagram, Twitter, and LinkedIn in popularity, with 77%, 71.3%, and 69% usage rates, respectively. Another study conducted in Canada by Research Forum (2015) had found that nearly six out of ten Canadians use Facebook (Steckman & Andrews, 2017); visiting the platform an average of nine times per week. In addition, Benson, Morgan, & Filippaios (2014) point out that although most people use social media for personal communication and information gathering, it has become a vital element of professional practice in many industries, and social media literacy is a skill that many employers are now looking for. Additionally, the COVID-19 pandemic has put mobile devices at the centre of scholastic and occupational lives. South Africa has a high mobile penetration rate with the largest population being young adults (North, Johnston, & Ophoff, 2014).

Research has found that university students use mobile phones for three main reasons with regards to communication, (1) for inclusion – this is important for their social identity because they require a sense of belonging (North et al., 2014); (2) for control – this allows them to receive and give instructions (this can be academically or personally related) and finally (3) for affection – to fulfil their desire to be loved and needed (North et al., 2014). Another study expresses that they use social media for escapism; this is a form of avoidance coping mechanism (Holahan et al., 2005). Social media now proves to be a useful and common tool used by university students to facilitate and mediate their relationships in order to prevent the most prevalent SLE which is "relationship difficulties" (Andrews & Wilding, 2004; Hetolang & Amone-P'Olak, 2018; Leung, 2007; North et al., 2014). Additionally, it was found that university students engage in compulsive behaviours such as compulsive internet use, to alleviate feelings of anxiety (Rosen et al., 2013). However, this compulsive behaviour maintains the manifest of this existing anxiety and leaves the latent unattended; this may worsen the problem because obsessive-compulsive behaviours continue being used as a disguise (Rosen et al., 2013). Furthermore, positive associations between SLEs and social media overuse were found (Yan, Li & Sui, 2012). However, studies, where anxiety acts as a mediator between SLEs and social media use intensity, are under-researched in South African literature; instead, SLEs are predominantly paired with depression. Anxiety becomes an important concept to explore because at high levels, it has a debilitating impact on all areas of their functioning. Given the prevalence of intense social media use, it is important to explore the

relations between anxiety, SLEs, and social media intensity. The following section will discuss social media intensity as operationalized in the present study.

2.6 Social media use intensity

The term "iDisorder" refers to a new psychological malady or rather condition which is characterized as the negative relationship between technology and psychological wellbeing (pathologic kind); it affects the brain's ability to process information efficiently and this is attributed to the overuse of social media or technology (Rosen et al., 2013). Some symptoms of this condition include the constant urge to check one's phone, insomnia, and increased levels of stress. These are similar symptoms that individuals who are not diagnosed with pathologic anxiety experience, instead their anxiety does not impair their functioning enough in accordance with the Diagnostic and Statistical Manual of Mental Disorders V Edition (DSM-V). With the rise of the fourth industrial revolution, it is imperative to investigate how this outcome variable occurs. If research can explain how SLEs contribute to the overuse of social media when anxiety is experienced; then interventions can be developed in pursuit of preventing iDisorder and related symptoms. Students may perceive social media use as a useful component and a coping mechanism to reduce stress and pre-existing anxiety (Leung, 2007). However, this makes them a vulnerable population because they are at risk of overusing social media if they have high stress with high anxiety – and developing iDisorder. Given the current global pandemic, 'social distancing' has become normalized. Social media has fulfilled people's desire for human interaction during these times and it has become an adaptive coping mechanism to some level (Singh et al., 2020). Social media continues to facilitate mental health awareness and support by making resources easily accessible (Singh et al., 2020).

Furthermore, studies have found that university students are among heavy users of Facebook, it is estimated that about 85% to 96% of the university student population in Western settings are religious users of Facebook (Labrague, 2014). The increasing rates of social media use at that intensity are increasingly concerning because they may create some form of dependence and become a coping mechanism, which may lead to overdependence or Internet Addiction (IA) (Labrague, 2014; Tang et al., 2014). IA is defined as a problematic method of using the internet where the user has a form of dependence; it is characterized by the lack of control by the user and may lead to repercussions in daily functioning (Kandell, 1998; Tang et al., 2014).

Social media overuse can also be linked to high levels of SLEs. Under the avoidance coping model, students who struggle to self-soothe and regulate their emotions may resort to maladaptive

coping mechanisms which manifest as procrastination, substance use, and social media overuse only to name a few; as an attempt to manage anxiety, stress, depression, and other mental health issues. According to a qualitative study of teenagers with depression; teenagers may use social media to cope with negativity (Cauberghe, Van Wesenbeeck, De Jans, Hudders, and Ponnet, 2021). Several studies, however, link intense social media use to mental health difficulties, and decreasing social media use has a reduction in feelings of loneliness and anxiety. However, using social media as a coping mechanism does not always yield the best outcomes. For instance, social media is known for various negative aspects such as bullying amongst others. In other circumstances, the maladaptive use of social media by students only exacerbates the problem.

Furthermore, following physical health problems and negative economic implications, the coronavirus disease and associated lockdown measures taken by governments of many countries are expected to cause mental health issues (Cauberghe et al, 2021). There is an association between the overuse of social media by students during the Covid-19 period (Wiederhold, 2020). This is mainly due to the fact that social connections between people have been broken due to lockdown measures and other restrictions put in place to combat the pandemic. Consequently bringing about the rise of telecommunication in order to stay in touch. Aljazeera (2020) reported in a study that nearly 60% of women and girls using Facebook, Instagram, and Twitter have suffered some form of abuse (Reuters, 2020). As a result, more women have had to vacate some social media platforms including Facebook, Instagram, and Twitter due to harassment. The abovementioned was obtained from a global study by an organisation called Plan International.

According to that study, the most common attacks transpired on Facebook, where 39% of girls' polls said they had been harassed, followed by Instagram (23%), WhatsApp (14%), Snapchat (10%), Twitter (9%) and TikTok (6%) (Aljazeera, 2020). This highlights that the overuse of social media leads to cyber abuse which also impacts the mental health of the users. In addition, Al-Yafi and El-Masri (2018) report that Qatari students' academic performance was lower among students who were addicted to social networking sites compared to other students. Therefore, students who used social networks and the internet more than the average population does had poor academic performance and poor levels of concentration in the classroom (Upadhayay and Guragain, 2017).

It is difficult to define the line where social media switches from being adaptive to maladaptive. However, researchers have found dimensional ways of assessing the impact of incremental social media usage. An exploratory structural equation was used to explore the basic dimensions of everyday social media use. Social media use intensity refers to the strength of involvement in the

platform and the intention is to understand the magnitude of the integration of social media in one's life (Orosz, Tóth-Király, & Bőthe, 2016). It is important to add that intense use does not automatically mean problematic behaviour, which means it is not indicative of social media addiction. In this paper, social media use intensity is assessed using four facets as described below:

2.6.1 Persistence

The first facet of social media intensity assesses the degree to which an individual has an emotional bond with these forms of social media (Orosz, Tóth-Király, & Bőthe, 2016). Intensely bonded individuals often report negative emotions when Facebook or Instagram is not available. The persistence facet often reflects a more stable, persistent social media habit (Orosz et al., 2016). Kolhar, Kazi, & Alameen (2021) also reported that the majority of participants said they used social networking sites for non-academic purposes for long periods. These habits can divert students' attention away from their studies and negatively impact their academic performance, social connections, sleep duration, and lead to a sedentary lifestyle filled with physical inactivity. Which leaves them vulnerable to morbidities such as non-communicable diseases and mental health issues.

2.6.2 Boredom

The second facet of social media intensity assesses the degree to which an individual uses social media platforms to alleviate boredom (Orosz et al., 2016). Stockdale and Coyne (2020) conducted a study over a period of three years during the transitional stage (from late adolescence into emerging adulthood), the findings demonstrated that the use of social media to alleviate boredom increased over the years.

Stockdale and Coyne's (2020) findings demonstrated initial levels of social media use to alleviate boredom were associated with problematic social networking site use, financial stress, anxiety, and empathy at year three. The use of social media for boredom as a coping mechanism is also referenced by Bai et al. (2020) through their research which found that the inappropriate use of mobile social media negatively affects users' subjective well-being; boredom has been found to be a partial mediator between mobile social media use and mental health. Jason (2017) states that research conducted in Germany amongst university students indicates that boredom "instigates a desire to escape from the situation" that causes boredom. Consequently, students resorted to using social media to escape daily boredom. It is hypothesized that a high number of participants in this study will exhibit a similar trend.

2.6.3 Overuse

The third facet of social media use intensity assesses the frequency that an individual logs onto the social media platform despite the limited time they have, this consequently results in intensive use (Orosz et al., 2016). It is important to note that this facet focuses on excessive use as seen by the user and the associated problems that result (Orosz et al., 2016). This facet was created not only to accommodate the pathologic use of social media (i.e. social media addiction) but also non-pathologic use. This is to include a larger group of the sample which is often excluded due to non-pathologic use of social media (Orosz et al., 2016).

2.6.4 Self-expression

The fourth facet of social media intensity assesses the individuals' social expression on social media. This encompasses their expression of their likes, feelings, thoughts, interests, and style which can be frequently accessed and changed (Orosz et al., 2016). According to Manago, Graham, Greenfield & Salimkhan (2008) in line with this "self-idealization perspective", research has shown that self-expression on social media platforms is often idealized, exaggerated, and sometimes unrealistic. However, Hogan (2010) points out that, social media users are often virtual curators of their online selves by staging or editing the content presented to others. In as much as it has been found that students use social media platforms to express themselves, it is important to add that others use it to drive and promote their political ideologies, cultural and religious beliefs. To support this point, Ellison, Steinfield & Lampe (2007) discuss that a contrasting body of research suggests that social media platforms constitute extensions of offline identities, with users presenting relatively authentic versions of themselves.

2.7 Programmes to support students

According to the American Psychological Association, 45% of university students seek counselling because they are stressed. Anxiety and depression are common consequences and are frequently linked to their stressors. As a result, Brock (2010) stated that universities have tested student support service programs that offer counselling and advise that they are regular, intensive, and personalized. Several studies have investigated how university students cope with the stressors (Addonizio, 2011).

Social support provided to university students is very important. It not only gives students a sense of belonging, but it also affects their cognitive and affective evaluations, as well as their self-efficacy in dealing with everyday stressors (Itzick, Kagan & Tal-Katz, 2018; Ryan & Deci, 2000). Rueger, Malecki, Pyun, Aycock, and Coyle (2016) and Chang, Yuan, and Chen (2018) stated that social support directly contributes to the reductions in individuals' depression and anxiety.

University students need to know that adequate help from family, peers, and others is accessible if needed or required.

According to Papadatou-Pastou, Goozee, Payne, Barrable, and Tzotzoli (2017), recent studies show that there is a growing need for accessible and anonymous programs to assist students in higher education who are experiencing psychological and/or academic issues as a result of adversities or everyday life stressors. The issue of the well-being of students is gaining momentum. This is mainly due to many students being faced with both mental health difficulties and study skill difficulties (Royal College of Psychiatrists, 2011).

Prolonged exposure to adversities/stressful life events has different impacts on different individuals. It is also highly reliant on students' genetic make-up, their predispositions, and their levels of resilience. Developmental psychologists identified children that were considered "at-risk" for developing psychopathology or difficulties as adults, through their significant adversities such as poverty, parental mental illness, paternal criminality, severe family or marital discord (Murphy, 1962; Murphy & Moriarty, 1976; Rutter, 1976, 1985; 1987; Werner, 1984; Werner & Smith, 1992). Risk factors are characterised at a familial, cultural, social, socio-economic, biological, or psychological level and they tend to precede and are associated with a higher probability of negative outcomes (Fraser, Galinsky, & Richman, 1999). The researchers periodically measured the children's economic, health, mental, social, and occupational statuses and found that many "at-risk" children displayed positive outcomes as adults despite the adversity. Following the diathesis-stress model which posits that psychological disorders result from an interaction between inherent vulnerability and environmental stressors (Eisenlohr-Moul et al., 2018). It is important to note that people who develop mental health issues may have an existing vulnerability which means their threshold is activated much easier than the next person. This explains why children who grow up in the same household with the same parents may achieve different mental health outcomes. This means that these programmes need to consider these factors.

2.8 Challenges to health-seeking behaviours

Gulliver, Griffiths, and Christensen (2010) stated that despite their difficulties, students may be hesitant in seeking assistance. Perceived stigma, accessibility (e.g., time or money), and a lack of awareness about what resources are available have all been suggested as hurdles to obtaining treatment. Gruttadaro and Crudo (2012) state that some students may be concerned that their concerns will go unnoticed, or they may just underestimate the importance of their mental health and prioritize their academic progress. Young people also often rely on self-taught skills to manage

their mental health. These self-soothing measures may be adaptive or maladaptive coping mechanisms. This paper is concerned with the maladaptive strategies employed to alleviate high levels of anxiety. Stigma may likely play a particularly prominent role in the failure to seek help among young adults.

This research aims to investigate whether the impact of stressful life events on social media use is mediated by levels of anxiety. Are students who feel overwhelmed by their SLEs more likely to overuse social media? This study essentially aims to reflect on whether social media use intensity could be an avoidance coping mechanism that emerges due to poor emotional regulation and distress tolerance skills where anxiety is the mediator between SLEs (IV) and social media use intensity (DV). Based on the literature, it is hypothesized that anxiety will mediate the relationship between SLEs and social media use intensity across all four domains.

2.9 Research hypotheses

The present study hypothesizes that anxiety will mediate the relationship between SLEs and social media use intensity in this sample of young adults. In order to meet the requirements of a full mediation (Baron & Kenny, 1986), the following hypotheses will be made in the four steps of a mediation analysis as specified by Baron and Kenny (1986):

1. Step 1- SLEs will be positively associated with social media use intensity among young adults.
2. Step 2- SLEs will be positively associated with anxiety among young adults.
3. Step 3- Anxiety will be associated with social media use intensity in this sample of young adults.
4. Step 4- Anxiety will mediate the relationship between SLEs and social media use intensity in this sample.

3. Chapter 3: Methodology

3.1 Research Design

This research was a cross-sectional design as the data was collected at one specific point using the online software, SurveyMonkey (Malhotra, 2010). SurveyMonkey enabled the researcher to formulate an online questionnaire. This research followed a quantitative data collection procedure (Stangor, 2011). The research was correlational as it aimed to investigate the associations between SLEs and social media use intensity with anxiety as a mediator (Stangor, 2011).

3.2 Population and Sample:

The research drew the sample from a target population of undergraduate young adults (aged 18-24) in a tertiary educational institution using a non-probability convenience sampling strategy. In this strategy, every individual in the population did not have an equal or fair chance to participate in the research (Malhotra, 2010); instead, it was highly reliant on who was available and accessible at that point in time. Additionally, participation was strictly voluntary and based on easy accessibility to the desired sample (Stangor, 2011). This population was ideal because The University of the Witwatersrand is one of the most diverse institutions in Southern Africa and the results from this research are applicable to a wider context. The initial sample was comprised of 402 participants, and the final sample was 360 participants. Pairwise deletion and mean imputation methods were used in cleaning the data (Enders, 2010). Please see 3.5.1 for further details.

3.3 Procedure:

The data was collected quantitatively through the SurveyMonkey site in the form of an online questionnaire. Various faculty course coordinators were approached for permission to invite students from their programmes.

Students were invited to participate via a link that was distributed on online learning platforms such as SAKAI and through their student email accounts. A request inviting students to participate was sent to the course coordinators, it included a link inviting students to participate in their course portals. The link directed the students to an electronic participant information sheet that served as "informed consent". This sheet thoroughly explained the pertinent details of the research that the students would potentially participate in. The details included information about the duration of the electronic survey. It also explained to the potential participant that participation is strictly voluntary and that he/she had the right to withdraw from the study at any time prior to the final submission of the survey without penalties. Some departments made provision for their students to obtain extra

credit for research participation. The participant information sheet also explained that extra credit would be allocated as per departmental policy.

The electronic questionnaire was administered to students using SurveyMonkey online software. It was made live and available to the students for a month which was adequate time to attain an optimal dataset size.

3.4 Measures:

In order to achieve the study's aims, four categories of measures were administered. These measures included: (1) measures to assess socio-demographic characteristics (e.g., age, sex, year of study, etc.), (2) a measure to assess stressful life events (i.e., the Social Readjustment Rating Scale (Holmes & Rahe, 1967), (3) a measure to assess anxiety (Beck's Anxiety Inventory) (Beck, Epstein, Brown, & Steer, 1988), and (4) a measure to assess social media use intensity (the Multidimensional Facebook Intensity Scale) (Ellison, Steinfield, & Lampe, 2007).

3.4.1 Demographic schedule (Appendix C)

The socio-demographic schedule consisted of questions about age, gender, ethnicity, home language, faculty of enrolment, year of study, and place of residence.

3.4.2 Stressful life events (Appendix C)

To assess students' experience of SLEs (the participants' stressful life events), the Social Readjustment Rating Scale by Holmes and Rahe (1967) was used. This is a 26-item scale that assessed any stressful life events they have had over the past term. It was a dichotomous scale with "0" (no occurrence) and "1" for (occurrence) (Clements & Turpin, 2000). During the assessment phase, all the occurrence "1" scores were changed to severity scores. For example, "Death of a family member" would be changed from a "1" to a "100".

The scale was slightly adapted to ensure that it was in alignment with young adults. For example, an item that read "Change in living conditions" was modified to "Change in living conditions/accommodations". Additionally, "Chronic car problems" was modified to "Trouble with transport". It is also important to note that, "financial difficulties" addressed funding difficulties university students are exposed to. There were several life stressors including events pertaining to family, relationships with authority figures, personal losses, etc. This instrument has been used in a university setting on young adults from Botswana and yielded a reliability score of 0.96 – 0.89

(Holmes & Rahe, 1967). This study yielded a Cronbach's alpha coefficient of 0.65, which indicates a good reliability score.

3.4.3 Anxiety (Appendix C)

Beck's Anxiety Inventory Scale (BAI) will be used to measure anxiety in the participants; it is one of the most reliable scales that are commonly used to assess anxiety. The BAI was developed in 1988 by Beck, Epstein, Brown, and Steer (1988). This is a multiple-choice 21-item self-report inventory which is used to assess the symptoms and severity of anxiety based on the Diagnostic and Statistical Manual of Mental Disorders-IV Edition (DSM-IV) (Bantjes et al., 2016; Bardhoshi, Duncan & Erford, 2016). The items are scored on a 4-point-Likert scale where the participants indicate whether they have been experiencing specific symptoms in the past month (Bardhoshi et al., 2016). The measures are rated 0, 1, 2, and 3. "0" indicates not at all; "1" indicates mild severity; "2" indicates moderate severity and "3" indicates severe. This scale accounts for cognitive, emotional, and physiological symptoms of anxiety (Bantjes et al., 2016; Bardhoshi et al., 2016). The total score ranges between 0-63. (1) Scores between 0-21 indicate low anxiety; (2) scores between 22-35 indicate moderate anxiety; (3) scores that are 36< indicate potentially concerning levels of anxiety.

The BAI has a Cronbach alpha value of 0.94 for adults, which is an excellent internal consistency (Bantjes et al., 2016). The 1-week test-retest reliability is BAI = 0.75. Some examples of the items include “dizzy or lightheaded”, “fear of losing control” and “fear or worst happening”. This scale has been used in similar contexts before (Bardhoshi et al., 2016). This study yielded a Cronbach’s alpha score of 0.67, which is indicative of a good reliability score.

3.4.4 Social media use intensity (Appendix C)

The Multidimensional Facebook Intensity Scale (MFIS) will be used to assess social media use intensity in young adults. The MFIS was developed from Ellison, Steinfield, & Lampe's (2007) Facebook Intensity scale (Orosz et al., 2016). The MFIS has less focus on the pathologic or addiction-related aspects of Facebook usage, instead, it assesses the daily usage of general users (Orosz et al., 2016). The total MFIS scale is a 13-item self-report measure that consists of four sub-scales which are Persistence, Boredom, Overuse, and Self-expression (Orosz et al., 2016). The psychometric properties of the total scale has a Cronbach alpha value of 0.88. Persistence has 4 items whilst Boredom, Overuse and Self-expression have 3 items each. In order to adapt the questionnaire for the study, "Facebook" was adapted to "social media" to test intense use. An

example of the Persistence items include, “I feel bad if I don’t check my Facebook daily” was adapted to “I feel bad if I don’t check my social media daily”. An example of the Boredom items include, “When I’m bored, I often go to Facebook” was adapted to “When I’m bored, I often go to social media”. An example of the Overuse items include, “I spend more time on Facebook than I would like to" was adapted to, "I spend more time on social media than I would like to". An example of the Self-expression items include, “I like refining my Facebook profile” was adapted to, “I like refining my social media profile”. The measures are rated on a 5-point Likert scale which indicates the level of agreement with the items. The measures of the scores are as follows; 1=strongly disagree; 2=disagree; 3=neither agree or disagree; 4=agree; 5= strongly agree. The total score requires you to add all the items in the subscale and divided it by the number of items in that subscale (Orosz et al., 2016). This scale has been used in university students before (Orosz et al., 2016), however, it has not been used in a South African context. The reliability of the MFIS yielded a Cronbach alpha score of 0.5 for Persistence, 0.6 for Boredom, 0.6 for Overuse, and 0.6 for Self-expression which is indicative of a good reliability score (Orosz et al., 2016). In this study, the reliability of the MFIS yielded a Cronbach alpha score of 0.8 for Persistence, 0.9 for Boredom, 0.8 for Overuse, and 0.9 for Self-expression which is indicative of a very good reliability.

3.5 Data analysis

3.5.1 Simple statistics

The questionnaires were retrieved from Survey Monkey, all the data was saved and cleaned as an Excel spreadsheet. Pairwise deletion and mean imputation methods were used in cleaning the data (Enders, 2010). Pairwise deletion has been noted to be a more powerful means of data cleaning than listwise deletion methods, especially when missing data is random. Additionally, person mean imputation was used on cases where there were few missing questions on a measure. In this instance, the items with responses were averaged and the average score was imputed on those missing data points as discussed by Enders (2010). The final cleaned dataset was then imported into SAS (SAS Institute, 2011) for statistical analyses. The p values of less than .05 were considered statistically significant.

Reliability tests were conducted to calculate Cronbach’s α. Descriptive statistics were then conducted where means and standard deviations were calculated. Prior to any parametric statistical procedures, the parametric assumptions were assessed and met, this was to ensure that no gross violations were made. Descriptive statistics are very useful because they allow for the data

collected to be described and summarized in a way that allows for meaningful interpretation (Howell, 2011).

3.5.2 Correlation Tests

Pearson's correlation coefficients were calculated to report bivariate relations between pairs of variables under study (Howell, 2011). Correlation tests were therefore conducted to determine whether the inter-relations between SLEs, anxiety, and social media use intensity are significant.

3.5.3 Tests of mediation (Sobel Test)

A Sobel test was used, this is a method used to test the significance of a mediation effect between variables (Soper, 2021). In order to test whether anxiety acts as a mediator, between SLEs and social media use intensity, Baron and Kenny's (1986) steps for testing mediation were used. Considering that this method largely depends on the multiple regression procedure, a set of parametric assumptions were met.

3.6 Ethical considerations:

Ethical clearance was requested from the University of Witwatersrand's Human Research Committee (Non-Medical) before administering the questionnaires to the potential participants. Once approval was gained, we proceeded to approach the relevant department heads to proceed and conduct the research.

Informed consent was acquired by availing Participation Information Sheets (PIS) before the research participation. Proceeding with participation in the research was deemed as consent.

Participants were assured of confidentiality and anonymity as no identifying details were collected. Additionally, the only people who have had access to their responses were the researcher and the supervisor. In addition, they were informed that the analyses that would be run would happen in group forms and not at individual levels. Finally, they were informed that during the research analysis and upon completion of the research, the responses would be stored in a password-secured electronic device that only the supervisor and the researcher would have restricted access to. They were further informed that the dataset would be stored and could be used in future publications.

Anonymity was maintained because SurveyMonkey did not record who gave which responses. However, student numbers were requested for the students requesting extra credit for their participation as per departmental policies. However, these student numbers were collated separately

from the participation data. The PIS explicitly explained that participation was strictly voluntary. It also ensured that it thoroughly explained the research aims; duration of the questionnaire and procedures that would be followed thereafter. Participants also had the right to withdraw from the research any time prior to the final submission of the questionnaire without any consequences or questions asked.

Participation in this research asked questions about stressful life events, coping, and experiences with anxiety symptoms. There was a low risk that responding to these questions may have resulted in some distress, especially in participants who were more prone to anxiety. In order to protect these participants, the researcher provided details of free counselling resources on campus (The CCDU and Emthonjeni Centre) that have explicitly agreed to provide free counselling for participants who may have been triggered by this research. Additional external recommendations such as Lifeline, SADAG, and FAMSA's contact details were also provided.

The researcher's details were included in the participant information sheet and the circulation email in case any of the participants had questions at any point prior to or post the completion of the questionnaire for any clarity.

4. Chapter 4: Results

This chapter systematically presents the results of this research study. All the data in the study was analysed through the Statistical Analysis Software (SAS; SAS Institute, 2011). The descriptive statistics and bivariate correlations of the sample will be presented in this chapter to describe the sample characteristics. Lastly, hypothesis testing results are presented.

4.1 Preliminary Analyses

4.1.1 Participant descriptors

The participants in this study were all undergraduate students from the University of the Witwatersrand in Johannesburg, South Africa. A total of 441 students accessed and completed the survey through a SurveyMonkey link which consisted of a demographic section and three separate scales measuring SLEs, anxiety, and social media intensity usage. For participants to be included in the final data set, they had to have completed all subscales of the study's measures. Where there were only one or two missing items on a measure, mean imputation was used (Howell, 2009). Additionally, listwise deletion was used to handle missing data as this is the default setting in SAS. This means that these participants' responses were omitted in the final analyses, a total of 81 participants were excluded. The final sample consisted of 360 ethnically diverse participants, 255 identified as female, 101 identified as male, and 4 preferred not to share their gender or were classified as non-binary (Table 1). The demographic questions were at the end of the questionnaire in order to motivate participants to complete the survey. 81 participants did not finish the survey and consequently could not identify their gender. This sample yielded sample power for the analyses required for this research (holding α at .05 and β at .80). The racial distribution is presented in Table 2 below, "other" included participants who preferred not to respond, were Egyptian and biracial. Table 3 presents participants' year of study and Table 4 presents their faculties.

Table 1*:* Sample attrition – Gender distribution:

	Female		Male		Other		Total	
	n	%	n	%	n	%	n	%
Full sample	255	70	101	28	4	2	441	100
Attrition	0		0		0		81	100
Final sample	255	70	101	28	4	2	360	100

Table 2: Sample – Racial distribution:

Race/ ethnicity	N	%
Black African	222	61
White	80	22
Coloured	37	10
Indian	3	1
Asian	11	3.5
Other	7	2.5
Total	360	100

Table 3: Sample – Year of Study:

Year of Study	N	%
1	96	27
2	75	21
3	75	21
4	111	30
No response	3	<1
Total	360	100

Table 4: Sample – Faculty:

Faculty	N	%
Sciences	1	<1
Commerce	19	5
Engineering	89	25
Health Sciences	112	31
Humanities	139	38
Total	360	100

4.1.2 Descriptive statistics

The descriptive statistics of all key variables are presented in Table 2 below presents the means, standard deviations, and ranges for all key variables.

Table 5: Means, Standard Deviations and Ranges for variables

Variable	N	*M*	*SD*	Min	Max
SRRS (SLE)	360	387.1	211.5	0	1200
BAI (Anxiety)	360	25.1	14.5	0	63
MFIS (Social Media usage)					
Persistence	360	10.6	4.3	4	20
Boredom	360	10.8	3.3	3	15
Overuse	360	9.1	3.5	3	15
Self-expression	360	6	3	3	15

4.2 Intercorrelation matrix

A series of bivariate correlations were conducted and are presented in the following section. The intercorrelation matrix is presented in Table 4 below. The data were first tested to see whether the parametric assumptions of the Pearson's Product-Moment correlation were adequately met. These assumptions were considered and met as follows:

(1) Variables should be continuous variables, which they are in the present study.

(2) Assumption of linearity- This was checked using bivariate scatterplots which suggested that all pairs of variables are linearly related.

(3) No outliers - a PROC REG procedure was run and variance inflation, tolerance, and influence statistics were run to detect any significant outliers.

(4) Assumption of normality: To assess the assumptions for normality, Shapiro-Wilk's *W* statistic was used, in conjunction with skewness and kurtosis indices. Histograms and absolute skewness and kurtosis values were used to determine normality, this is applicable to sample sizes greater than 300 (Kim, 2013). The skewness and kurtosis coefficients fell within -1 and +1, suggesting that normality may be assumed (Kim, 2013; Howell, 2009, 2011). Following the Central Limit Theorem, as the sample size increases in any normally distributed population, the mean distribution of the population will approximate a normal distribution after a sample size of 30 (Field, 2009). Taken together, it was concluded that there were no significant deviations from the assumption of normality so Pearson's *r* would be a reliable estimate of the bivariate relations in this sample.

(5)

Table 6: Intercorrelation Matrix

	Age	Persistence	Boredom	Overuse	Self-Exp	BAI	SLE
Age	**1.00**	**-0.01**	**-0.07**	**-0.1**	**-0.03**	**-0.01**	**0.1**
Persistence	-	**1.00**	**0.67****	**0.63****	**0.56****	**0.15****	**0.14****
Boredom	-	-	**1.00**	**0.60****	**0.39****	**0.11***	**0.10***
Overuse	-	-	-	**1.00**	**0.43****	**0.16****	**0.19****
Self-exp	-	-	-	-	**1.00**	**0.13****	**0.13****
BAI	-	-	-	-	-	**1.00**	**0.38****

*p < 0.05 **p < 0.01

As expected, all four domains of social media use were strongly correlated with each other as they are all facets of the same construct (problematic social media use). Persistence was significantly and positively associated with Anxiety ($r = 0.15$, $p < 0.004$) and intensity of SLEs ($r = 0.14$, $p < 0.006$). This suggests that participants who reported higher persistent social media use also reported significantly higher levels of anxiety *and* higher stressful life event stress (SLE) intensity in this sample.

A significant positive relationship was found between Boredom and Anxiety ($r = 0.11$, $p < 0.04$) as well as between Boredom and SLE intensity ($r = 0.10$, $p < 0.05$), although the strength of association was not as strong as Persistence, this suggests that participants who reported higher levels of social media use due to boredom also reported higher levels of anxiety and greater intensity of SLEs in this sample.

Overuse was also significantly positively associated with Anxiety ($r = 0.16$, $p < 0.003$) and with intensity of SLEs ($r = 0.19$, $p < 0.0002$), suggesting that participants who scored higher on the social media overuse measure also reported higher levels of anxiety and SLEs in this sample. Similarly, a significant positive correlation was found between Self-expression and each of Anxiety ($r = 0.13$, $p < 0.001$) and Stress ($r = 0.13$, $p < 0.001$), suggesting that participants who scored higher on the self-expression measure also reported higher levels of anxiety and SLEs in this sample. Age was not found to be associated with any of the study variables.

Lastly, Anxiety was significantly associated with SLEs (r = 0.38, p < 0.0001). This suggests that participants who reported higher intensity SLEs were also more likely to report higher levels of anxiety in this sample.

In sum, the correlation analysis suggested that there were significant positive relationships between all four domains of social media use and each of Anxiety and intensity of SLEs. No significant age effect was found for any of the variables in this sample.

4.3 Main Analyses

In order to meet the study's objective, a series of analyses were conducted to test the study's research questions. These are systematically discussed below.

4.3.1 Does anxiety mediate the relationship between SLEs and social media use intensity in this sample? (Test of mediation)

In order to test whether anxiety acts as a mediator, between SLE and social media use intensity, Baron and Kenny's (1986) steps for testing mediation were used. Considering that this method largely depends on the multiple regression procedure, a set of parametric assumptions were required to be met. Some of these assumptions were met in the correlation analyses (please see the abovementioned). Additional assumptions tested included:

(1) Homoscedasticity- examination of a scatterplot of residuals suggested that this assumption was met.

(2) Independence of errors- the residuals were randomly scattered, suggesting that they were uncorrelated.

(3) Multicollinearity- The tolerance and variance inflation factor were examined (Field, 2009). Additionally, the collinearity option in SAS was used and no multicollinearity violations were found.

(4) Lastly, multivariate normality- The residuals were found to be normally distributed as tested using histograms, QQ plots, and the Kolmogorov-Smirnov test.

Considering that there were no gross violations of the parametric assumptions of the multiple regression procedure, the analytic procedures as recommended by Baron and Kenny (1986) were conducted. According to these procedures, the following steps were followed with associated hypotheses and assumptions to test the model:

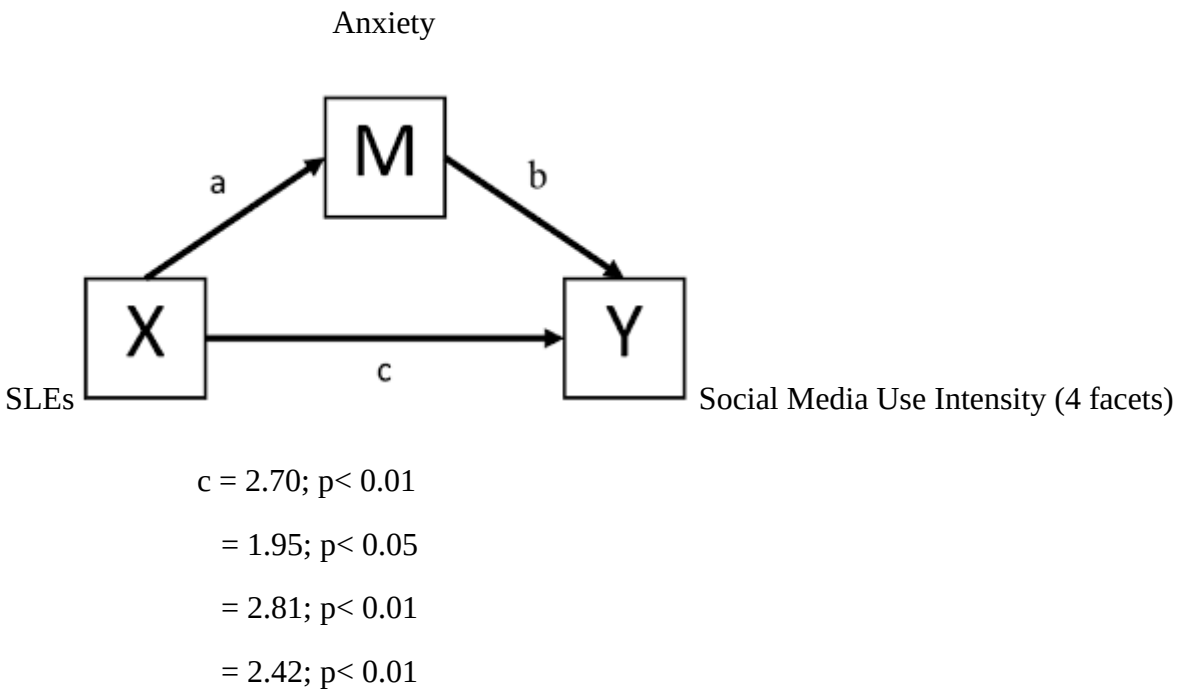

Figure 1

Please see *Table 7* with these steps.

Step 1: The first step assumes that the relationship between SLEs (X) and social media intensity (Y) is significantly different from 0 (path "c"). See intercorrelation matrix (Table 4).

Step 2: This step assumes that the relationship between SLE (X) and anxiety (M) is significantly different from 0 (path "a"). Which stipulates that there is a relationship between the independent variable and the mediator.

Step 3: The relationship between anxiety (M) and social media use intensity (Y) was estimated because this step assumes that path "b" is significantly different from 0.

Step 4: Tests of mediation were conducted using the Sobel test which was designed for larger sample sizes (Preacher & Hayes, 2004). Table 4 illustrates the Sobel test results. When a Sobel test was carried out with anxiety as the mediator, SLEs as the independent variable and the four facets of social media use intensity as the dependent variable, significant results were found. Persistence (c = 2.70; p< 0.01), boredom (c= 1.95; p< 0.05), overuse (c= 2.81; p< 0.01) and self-expression (c= 2.42; p<0.01).

Table 7: Mediation analysis results

Predictor (IV)		Criterion (DV)	F	*b*	SE_b	Sobel
Step 1 (c)	SLE	*Social media use intensity*				
		Persistence (path c)	7.62**	0.00294	0.00106	
		Boredom	3.79*	0.00159	0.00008	
		Overuse	13.09**	0.00032	0.00086	
		Self-expression	6.59*	0.00188	0.00073	
Step 2 (a)	SLE	Anxiety	61.22**	0.02617	0.00334	
Step 3 (b)	Anxiety	*Social media use intensity*				
		Persistence	8.27**	0.0446	0.01551	
		Boredom	4.07*	0.02404	0.01191	
		Overuse	9.06**	0.03784	0.01257	
		Self-expression	6.47*	0.02723	0.0107	
Step 4		*Social media use intensity*				
		Persistence				2.70**
		Boredom				1.95*
		Overuse				2.81**
		Self-expression				2.42**

*p < 0.05 **p < 0.01

In conclusion, SLEs are associated with anxiety and social media use intensity. In sum, the findings reported that reporting more SLEs was associated with increased severity of anxiety and increased social media use intensity. Furthermore, there is a mediation that exists between SLEs (IV), anxiety (M), and the four facets of social media use intensity (DV). This means that participants' intensity of social media use increases due to avoidance coping when they report more SLEs and experience more severe anxiety.

5. Chapter 5: Discussion

The present study aims to explore the role of anxiety in the face of SLEs and whether it predicts social media overuse in this sample of university students. In interpreting these results, it is important to take into account the global coronavirus (COVID-19) pandemic and associated challenges it may have imposed on young people, in addition to their usual sources to stress. This chapter will systematically present and discuss the findings of this research endeavour.

A series of bivariate correlations were conducted to determine the associations between anxiety, stressful life events, and the four facets of social media use intensity (persistence, boredom, overuse, and self-expression). The findings reported that all four facets of social media use intensity were strongly associated with one another in this sample. A positive association between SLEs and anxiety was found, these findings are corroborated by (Aktekin et al., 2001; McLaughlin & Hatzenbuehler, 2009). This suggests that experiencing overwhelming stressful life events is likely to result in higher levels of anxiety in young adults.

These findings further suggest that anxiety intensity is very strongly associated with social media use intensity in this sample: people who reported a more intense prolonged state of anxiety were also more likely to report more intense social media usage in this sample (Vannucci, Flannery & Ohannessian, 2017). This finding corroborates the predictions of this study because these individuals may use social media as a mechanism to avoid or regulate emotions associated with anxiety (Leung, 2007; Wiederhold, 2020). The relationship between anxiety and boredom was more modest than the other three domains, similarly with SLEs and boredom. This means that most participants were less likely to use social media due to boredom. These findings are supported by (LePera, 2011). In sum, the findings indicated that reporting more SLEs was associated with increased severity of anxiety and increased social media use intensity.

This study's focus is not on the reciprocal relationship between anxiety and social media use intensity. Rather, it focuses on how participants tolerate their anxiety and the self-soothing role social media use plays. Research indicates that there is a pre-existing association between stressful life events and social media use (Leung, 2007), however, when anxiety mediated the relationship, it exacerbates the intensity of social media use. It posits that the higher the levels of stress and adversities experienced by university students, the more likely they are to have increased anxiety which increases their likelihood of using social media to cope, avoid and soothe, which may, in turn, reinforce the anxiety and perpetuate the cycle. This may be attributed to poor interpersonal

problem-solving skills and perhaps poorly developed problem-solving and coping skills (Holahan et al., 2005; Wierderhold, 2020).

5.1 Anxiety

The study also found that the mean BAI score in this sample was suggestive of moderate levels of anxiety (M=25.1; SD=14.5) (Beck, Epstein, Brown, & Steer, 1988). This is very high compared to other samples of university students that have tended to report mild mean levels of anxiety in similar samples (Ibrahim & Abdelreheem, 2014; Vannucci et al., 2017). Research studies found that emerging adults from the United States presented with moderate anxiety (Vannucci et al., 2017) and another study conducted at Alexandra University in Arabia found that 51% of the pharmaceutical and medical students reported mild anxiety (Ibrahim & Abdelreheem, 2014). The high anxiety rates in this study may be, in part, attributed to increased stress associated with the Covid-19 pandemic and associated lockdowns. This finding was corroborated by Sahin, Aydin & Kulakac (2020) who reported severe mean anxiety levels in a similar sample of university students with data also collected during the pandemic. Their research found that the female gender and their family's COVID-19 diagnoses were more associated with high anxiety (Sahin et al., 2020). McCraty (2007); McCraty, Dana, Mike, Pam, and Stephen (2000) have well documented the detrimental effects of anxiety on students. At low levels, anxiety is adaptive and helps students remain motivated. However, at high levels, it is very debilitating, making functioning very difficult or impossible (AlKandari, 2020). Examples include the inability to socialize due to elevated levels of uncontrollable worry, recurrent panic attacks, which may result in behaviours that prevent one from adequately functioning in their social and occupational contexts.

The population is increasingly becoming anxious during the pandemic. Various aspects of social media are of great assistance for people feeling anxious and isolated (Wiederhold, 2020). Many people resort to using subtle avoidance or "safety behaviours" in order to cope with their anxiety (Boehm, 2019). These behaviours may include having a mobile phone as some form of security. The American Psychological Association (APA) has recommended that maintaining a sense of normality and social networks with loved ones can reduce anxiety (Wiederhold, 2020), however, this results in more time spent on social media sites and messenger applications which makes managing anxiety difficult to balance. Consequently, this plays a part in the dependence that develops over time (Boehm, 2019). Instead, a cyclical relationship may develop where anxiety is alleviated by social media use, which increases intensity which may eventually become problematic. Research has found that high intensity is associated with problematic use of social

media (Boehm, 2019). Furthermore, escapism is associated with problematic use. This increases the likelihood of the use of avoidance behaviour in university students (Holahan et al., 2005; Wiederhold, 2020).

5.2 Social media use intensity

Social media has proven to be a useful and common tool used by university students to alleviate SLEs and anxiety related to interpersonal relationships (Andrews & Wilding, 2004; Hetolang & Amone-P'Olak, 2018; Leung, 2007; North et al., 2014). The participants made use of intense social media use to manage their internal states.

The results indicated that intensely bonded individuals often reported negative emotions when social media was not available. They further suggest that participants used social media persistently due to their emotional bond with these social media platforms (Orosz et al., 2016).

A modest association was found between boredom and both SLEs & anxiety. This means that a modest subpopulation in the sample used social media platforms to alleviate boredom (Orosz et al., 2016). These results suggest that boredom "instigates a desire to escape from the situation" (Jason, 2017). Consequently, the students are motivated to use social media to escape daily boredom.

Social media has fulfilled people's desire for human interaction during these times and it has become an adaptive coping mechanism to some level (Singh et al., 2020). The results suggest that participants frequently log onto social media platforms despite the limited time they have, this consequently results in to overuse (Orosz et al., 2016). This is a form of escapism because participants prevent ruminating and when they feel overwhelmed they resort to social media which increases their usage over time.

Participants were found to use social media intensely because they use these platforms for their social expressions. This encompasses their expression of their likes, feelings, thoughts, interests, and style which can be frequently accessed and changed (Orosz et al., 2016). Many issues are discussed on social media platforms and a variety of social issues impact participants. As a result, they are more likely to log in more when issues that they relate to are being discussed.

Multiple studies have found associations between heavy social media use and an increased risk for depression, anxiety, loneliness, self-harm, and even suicidal thoughts (Bantjes et al., 2016). Social media may promote negative experiences such as inadequacy about your life or appearance. In addition, when these factors are experienced simultaneously; excessive use can fuel feelings of

anxiety, depression, and isolation amongst others. Barthorpe, Winstone, Mars, and Moran (2020) stated that the benefits and disadvantages of social media for people with social anxiety are the same as those for those without the disorder, this increases university students' vulnerability.

5.3 Implications

Multiple studies have found associations between heavy social media use and an increased risk for depression, anxiety, loneliness, self-harm, and even suicidal thoughts (Bantjes et al., 2016). Research has shown that having a higher level of mindful awareness significantly decreases using social media as a mood regulatory tool and has poor negative outcomes for problematic internet usage (Calvete, Gámez-Guadix, & Cortazar, 2017). Universities are encouraged to create mental health programs that promote mindfulness and adaptive mood regulation tools. Given that this pandemic has steered the world into a more digital-orientated world, it is important to place these measures in place because individuals are consistently exposed to social media sites which makes them more susceptible. These support programs should not only focus on their social burdens because they could make the students feel alienated and isolated. Instead, they should be taught skills that will pre-empt them to be able to reach out and address their psychological and emotional issues.

The more time people spend on these sites to alleviate anxiety, the more detrimental it will be to their health. Associations have been found between more time spent on social media sites and dispositional symptoms of anxiety (Vannucci et al., 2017). Furthermore, neuroscientific research suggests that intense social media use mirrors the underlying neural processes that exist in substance addiction and this may lead to worse implications (Love, Laier, Brand, Hatch, & Hajela, 2015). Gaining a more nuanced understanding by conducting further research of this relationship will help to inform novel approaches to anxiety and problematic use treatment. The results suggest that helping students build emotional regulation, mindfulness, and distress tolerance skills when faced with adversities may have a positive impact on their wellbeing, as it may reduce their levels of anxiety and ultimately reduce excessive social media. The reduction in anxious affect can allow for productive processes such as problem solving and engagement with the academic programme. It is important for universities to take socio-cultural factors into account when developing interventions and perhaps to include problem-focused coping skills development in the support structures for new students. The implications of social media overuse on psychological adjustment needs to be explored further.

5.4 Limitations of this study

This study needs to be viewed in the context of methodological limitations and as such, the conclusions of this study should be interpreted with caution.

First, the sample was attained through a convenience design. The participants are all students who attended the same institution which was a convenient sample to reach. Furthermore, the survey was sent out to participants who were between their first and fourth years. This means that the proportion of the students who participated in this study may have been struggling with stressful life events, anxiety and social media use intensity. Furthermore, the proportion of female participants who participated in the study was significantly larger than the male proportion. These factors may have influenced the findings as women tend to be more prone to anxiety than men.

Second, the use of self-report design may be liable to inaccuracies. The study was anonymous and confidential, this ensured that social desirability was not a concern in this study. However, this study relied predominantly on the participants' introspective ability. The participants may have overestimated or underestimated their social media use intensity. Therefore it is important to add that this is their *perceived* social media use intensity.

Third, there were scoring difficulties with respect to the Social Readjustment Rating Scale whereby descriptive statistics and prevalence rates could not be interpreted. Initially they were scored using “0” indicating non-occurrence and “1” indicating occurrence as seen in the methods section. However, this scoring method did not account for the severity of the stressful life events and lead to the assumption that death of a family member would have the same impact as bad grades. Different severity scores were assigned to the different SLEs, however due to the different scales they were obtained from. The standard deviation was too high which means the data was more spread out.

Fourth, future research should consider using a standardized avoidance coping measure. Some participants were anxious and perhaps used avoidance coping methods which were not social media. A measure would reveal the different variations of this coping tool.

Fifth, the use of a cross-sectional design may be liable to inaccuracies. This means that causal and social factors that may affect stressful life events, anxiety, and social media use intensity were not taken into account. With that said, it is important to add that we had a large sample which significantly reduces the influence of these factors.

Sixth, the present study was a cross-sectional analysis, and therefore causal and social factors that may affect depression, anxiety, and stress were not taken into account. Despite this, it needs to

be kept in mind that this is a very large sample which significantly reduces the impact of the above-mentioned factors.

Seventh, despite the fact the sample was from one of the most diverse institutions in South Africa, participants varied in socio-economic status, race, gender only to name a few. There could be further disparities in other institutions and countries.

6. Conclusion

In conclusion, this research quantitatively explored the associations between SLEs, anxiety and social media use intensity (four facets). It further explored whether the impact of stressful life events on social media use was mediated by levels of anxiety.

Positive associations were found between SLEs, anxiety and social media use intensity. This means reporting more SLEs was associated with increased severity of anxiety and increased social media use intensity. Therefore, students who feel overwhelmed by their SLEs are more likely to overuse social media. This study reflected that social media use intensity is a form of an avoidance coping mechanism that emerges due to poor emotional regulation and distress tolerance skills. Anxiety mediated the relationship between SLEs and social media use intensity across all four domains.

The study also found that the university students reported moderate levels of anxiety on average which is higher than what previous research reported. This can be attributed to the COVID-19 pandemic and associated lockdowns that emerged when the data was collected. The results highlight the emotional vulnerability of South African students, especially during times when they are burdened with multiple stressors. These findings further suggest that interventions should encompass approaches that include mindfulness facets in order to protect against the development of problematic Internet use.

7. References

Addonizio, F. P. (2011). *Stress, coping, social support, and psychological distress among MSW students*. University of South Carolina.

Adewuya, A. O., Ola, B. A., Aloba, O. O., Mapayi, B. M., & Oginni, O. O. (2006). Depression amongst Nigerian university students: Prevalence and sociodemographic correlates. *Social Psychiatry and Psychiatric Epidemiology, 41*(8), 674–678. https://doi.org/10.1007/s00127-006-0068-9

Aktekin, M., Karaman, T., Senol, Y. Y., Erdem, S., Erengin, H., & Akaydin, M. (2001). Anxiety, depression and stressful life events among medical students: A prospective study in Antalya, Turkey. *Medical Education, 25(1),* 12-17.

AlKandari, N. Y. (2020). Students anxiety experiences in higher education institutions. In *Anxiety Disorders-The New Achievements*. IntechOpen.

Al-Yafi, K., El-Masri, M., & Tsai, R. (2018). The effects of using social network sites on academic performance: the case of Qatar. *Journal of Enterprise Information Management*.

American Psychological Association. (2020). APA Dictionary of Psychology. https://dictionary.apa.org/avoidance-coping.

Andrews, B., & Wilding, J. M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology, 95*(4), 509–521. https://doi.org/10.1348/0007126042369802

Bai, Y., Yao, L., Wei, T., Tian, F., Jin, D. Y., Chen, L., & Wang, M. (2020). Presumed asymptomatic carrier transmission of COVID-19. *Jama, 323*(14), 1406-1407.

Balmores-Paulino R.S. (2018). Avoidance Coping Strategies. In: Zeigler-Hill V., Shackelford T. (eds) Encyclopedia of Personality and Individual Differences. Springer, Cham. https://doi.org/10.1007/978-3-319-28099-8_645-1.

Bantjes, J. R., Kagee, A., McGowan, T., & Steel, H. (2016). Symptoms of posttraumatic stress, depression, and anxiety as predictors of suicidal ideation among South African university students.

Journal of American College Health, *64*(6), 429–437. https://doi.org/10.1080/07448481.2016.1178120

Bardhoshi, G., Duncan, K., & Erford, B. T. (2016). Psychometric Meta-Analysis of the English Version of the Beck Anxiety Inventory. *Journal of Counseling and Development*, *94*(3), 356–373. https://doi.org/10.1002/jcad.12090

Barlow, D, H., & Durand, V. M. (2009). *Abnormal Psychology: An intergrative approach* (2nd ed.). Stamford, USA: Cengage Learning.

Barlow, D. H. (2004). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. Guilford press.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Barthorpe, A., Winstone, L., Mars, B., & Moran, P. (2020). Is social media screen time really associated with poor adolescent mental health? A time use diary study. *Journal of affective disorders*, *274*, 864-870.

Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social Psychiatry and Psychiatric Epidemiology*, *43*(8), 667–672. https://doi.org/10.1007/s00127-008-0345-x

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical psychology*, *56*(6), 893.

Benson, V., Morgan, S., & Filippaios, F. (2014). Social career management: Social media and employability skills gap. *Computers in Human Behavior*, *30*, 519-525.

Blalock, J. A., & Joiner, T. E. (2000). Interaction of cognitive avoidance coping and stress in predicting depression/anxiety. *Cognitive Therapy and Research*, *24*(1), 47–65. https://doi.org/10.1023/A:1005450908245

Boehm, N. (2019). Stuck on Social Media: Predicting Young Adults' Intentions to Limit Social Media Use. *The Journal of Social Media in Society Fall*, *8*(2), 143–166. https://www.thejsms.org/index.php/TSMRI/article/view/506

Bojuwoye, O. (2002). Stressful experiences of first year students of selected universities in South Africa. *Counselling Psychology Quarterly*, *15*(3), 277–290. https://doi.org/10.1080/09515070210143480

Brock, T. (2010). Young adults and higher education: Barriers and breakthroughs to success. *The future of children*, 109-132.

Bukstein, O. G. (2005). Practice parameter for the assessment and treatment of children and adolescents with substance use disorders. *Journal of the American academy of child & adolescent psychiatry*, *44*(6), 609-621.

Calvete, E., Gámez-Guadix, M., & Cortazar, N. (2017). Mindfulness facets and problematic Internet use: A six-month longitudinal study. *Addictive Behaviors*, *72*, 57-63.

Caplan, S. E. (2007). Relations among loniness, social anxiety and probematic internet use. *Cyberpsychology & Behavior*, *10(2)*, 232-242. https://doi.org/10.1089/cpb.2006.9963

Cauberghe, V., Van Wesenbeeck, I., De Jans, S., Hudders, L., & Ponnet, K. (2021). How adolescents use social media to cope with feelings of loneliness and anxiety during COVID-19 lockdown. *Cyberpsychology, Behavior, and Social Networking*, *24*(4), 250-257.

Chan, D. W. (2003). Dimensions of Emotional Intelligence and Their Relationships with Social Coping among Gifted Adolescents in Hong Kong. *Journal of Youth and Adolescence*, *32*(6), 409–418. https://doi.org/10.1023/A:1025982217398

Chang, C. W., Yuan, R., & Chen, J. K. (2018). Social support and depression among Chinese adolescents: The mediating roles of self-esteem and self-efficacy. *Children and Youth Services Review*, *88*, 128-134.

Cisler, J. M., Begle, A. M., Amstadter, A. B., Resnick, H. S., Danielson, C. K., Saunders, B. E., & Kilpatrick, D. G. (2012). Exposure to interpersonal violence and risk for PTSD, depression, delinquency, and binge drinking among adolescents: Data from the NSA-R. *Journal of traumatic stress*, *25*(1), 33-40.

Clement, J. (2019). South Africa: number of Facebook users 2017-2023 (n.d.). Retrieved March 8, 2020, from Statista website: https://www.statista.com/statistics/558248/number-of-facebook-users-in-south-africa/

Clements, K., & Turpin, G. (2000). Life event exposure, physiological reactivity, and psychological strain. *Journal of Behavioral Medicine*, *23*(1), 73–94. https://doi.org/10.1023/A:1005472320986

Clinciu, A . I . (2013) . Adaptation and stress for the first year university students . Procedia: Social and Behavioral Sciences, 78, 718–722 . https://doi .org/10 .1016/j . sbspro .2013 .04 .382

Cohen, S., Murphy, M., & Prather, A. A. (2019). Ten Surprising Facts About Stressful Life Events and Disease Risk. Annual review of psychology, 70, 577–597. https://doi.org/10.1146/annurev-psych-010418-102857.

Corcoran, M., & Mcnulty, M. (2018). Examining the role of attachment in the relationship between childhood adversity, psychological distress, and subjective well-being. *Child Abuse & Neglect, 76*, 297–309.

Cronkite, R. C. &, Moos, R. H. (1995). Life context, coping processes, and depression. In: Beckham EE, Leber WR, editors. *Handbook of depression, 2*, 569-587. New York: Guilford Press.

Dahlin, M., Joneborg, N., & Runeson, B. (2005). Stress and depression among medical students: A cross-sectional study. *Medical Education, 39(6),* 594-604. https://doi.org/ 10.1111/j.1365-2929.2005.02176.x

Daniels, A. Z., & Holtfreter, K. (2019). Moving Beyond Anger and Depression: The Effects of Anxiety and Envy on Maladaptive Coping, *Deviant Behavior, 40 (3),* 334-352. DOI: 10.1080/01639625.2017.1422457.

Daniels, A. Z., & Holtfreter, K. (2019). Moving Beyond Anger and Depression. *The Effects of Anxiety and Envy on Maladaptive Coping, Deviant Behavior*,40(3), 334-352, DOI: 10.1080/01639625.2017.1422457

Darling-Fisher, C. S., & Leidy, N. K. (1988). Measuring Eriksonian development in the adult: The modified Erikson psychosocial stage inventory. *Psychological Reports*, *62*(3), 747-754.

Davidowitz, B., & Schreiber, B. (2008). Facilitating adjustment to higher education: Towards enhancing academic functioning in an academic development programme. *South African Journal of Higher Education*, *22*(1), 191-206.

Dohrenwend, B. S., & Dohrenwend, B. P. (1974*). Stressful life events: Their nature and effects*. Hoboken, NJ: Wiley.

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour research and therapy*, *38*(4), 319-345.

Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and Correlates of Depression, Anxiety, and Suicidality Among University Students. *American Journal of Orthopsychiatry*, *77*(4), 534–542. https://doi.org/10.1037/0002-9432.77.4.534

Eisenlohr-Moul, T. A., Miller, A. B., Giletta, M., Hastings, P. D., Rudolph, K. D., Nock, M. K., & Prinstein, M. J. (2018). HPA axis response and psychosocial stress as interactive predictors of suicidal ideation and behavior in adolescent females: A multilevel diathesis-stress framework. *Neuropsychopharmacology*, *43*(13), 2564-2571.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer- Mediated Communication, 12(4)*, 1143–1168. http://dx.doi.org/10.1111/j.1083-6101. 2007.00367.x.

Enders, C. K. (2010). *Applied missing data analysis*. Guilford Press.

Field, A. (2009). Discovering statistics using SPSS (3. baskı). *New York: Sage Publications*.

Fisher, S. & Hood, B. (1988) Vulnerability factors in the transition to university: self-reported mobility history and sex differences as factors in psychological disturbance. *British Journal of Psychology*, *79*, 09–320.

Forum Research. (2015). Instagram tops in user satisfaction. Forum Research, Toronto. Viewed 21 September 2016 at http://poll.forumresearch.com/post/213/facebook-leads-in-penetration-linkedinshows-most-growth/.

Fraser, M. W., Galinsky, M. J., & Richman, J. M. (1999). Risk, protection, and resilience: Toward a conceptual framework for social work practice. *Social work research*, *23*(3), 131-143.

Grant, D. M., Wingate, L. R., Rasmussen, K. A., Davidson, C. L., Slish, M. L., Rhoades-Kerswill, S., Mills, A. C., & Judah, M. R. (2013). An examination of the reciprocal relationship between avoidance coping and symptoms of anxiety and depression. *Journal of Social and Clinical Psychology*, *32*(8), 878–896. https://doi.org/10.1521/jscp.2013.32.8.878

Gruttadaro, D., & Crudo, D. (2012). College students speak: A survey report on mental health. *National Alliance on Mental Illness*, 1-24.

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC psychiatry*, *10*(1), 1-9.

Hamad, R., Fernald, L. C. H., Karlan, D. S., & Zinman, J. (2007). Social and economic correlates of depressive symptoms and perceived stress in South African adults. *Journal of Epidemiology and Community Health, 62(6),* 538-544. https://doi.org/ 10.1136/jech.2007.066191

Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology*, *1*, 293-319.

Harmon, J. M. (2017). Adolescent social media use: Coping or avoidance? *Master of Arts (Psychology)*, Sam Houston State University, Huntsville, Texas.

Hetolang, L. T., & Amone-P'Olak, K. (2018). The associations between stressful life events and depression among students in a university in Botswana. *South African Journal of Psychology*, *48*(2), 255–267. https://doi.org/10.1177/0081246317711793

Hogan, B. (2010). The presentation of self in the age of social media: Distinguishing performances and exhibitions online. *Bulletin of Science, Technology & Society*, *30*(6), 377-386.

Holahan, C. J., Moos, R. H., & Bonin, L. (1999). Social context and depression: An integrative stress and coping framework. In: Joiner T, Coyne J, editors. The interactional nature of depression. *Advances in interpersonal approaches*, 39-63. Washington, DC: American Psychological Association.

Holahan, C. J., Moos, R. H., Holahan, C. K., Brennan, P. L., & Schutte, K. K. (2005). Stress generation, avoidance coping, and depressive symptoms: A 10-year model. *J Consult Clin Psychology, 73(4)*: 658–666. doi:10.1037/0022-006X.73.4.658.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11,* 213–218.

Howell, D. C. (2009). *Statistical methods for psychology*. Belmont, CA: Wadsworth Cengage Learning.

Howell, D.C. (2011). *Fundamental Statistics for the Behavioural Sciences* (7th Ed.). Canada: Wadsworth Cengage Learning.

Ibrahim, M. B., & Abdelreheem, M. H. (2015). Prevalence of anxiety and depression among medical and pharmaceutical students in Alexandria University. *Alexandria Journal of Medicine*, *51*(2), 167–173. https://doi.org/10.1016/j.ajme.2014.06.002

Itzick, M., Kagan, M., & Tal-Katz, P. (2018). Perceived social support as a moderator between perceived discrimination and subjective well-being among people with physical disabilities in Israel. *Disability and rehabilitation*, *40*(18), 2208-2216.

Jason, Z. (2017). Bored out of their minds. *Harvard Ed Magazine*.

Jaycox, L. H., Langley, A. K., Stein, B. D., Wong, M., Sharma, P., Scott, M., & Schonlau, M. (2009). Support for students exposed to trauma: A pilot study. *School mental health*, *1*(2), 49-60.

Kalpidou, M., Costin, D., & Morris, J. (2011). The Relationship Between Facebook and the Well-Being

Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology and Behavior*, *1*(1), 11–17. https://doi.org/10.1089/cpb.1998.1.11

Keyes, K. M., Hatzenbuehler, M. L., & Hasin, D. S. (2011). Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors. *Psychopharmacology*, *218*(1), 1-17.

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business horizons*, *54*(3), 241-251.

Kim, H. Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, *38*(1), 52-54.

Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi journal of biological sciences*, *28*(4), 2216-2222.

Kraut, R., Kiesler, S., Boneva, B., Cummings, L., Hegelson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Sciences, 58(1),* 49-74.

Labrague, L. J. (2014). *Health Science Journal*, *8*(1). http://hypatia.teiath.gr/xmlui/bitstream/handle/11400/1481/817.pdf?sequence=1

Lave J, Wenger E. (1991). Situated learning: Legitimate peripheral practice. Cambridge: Cambridge University Press.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

LePera, N. (2011). Relationships between boredom proneness, mindfulness, anxiety, depression, and substance use. *The New School Psychology Bulletin*, *8*(2), 15-25.

Letseka, M., & Breier, M. (2008). Student poverty in higher education: the impact of higher education dropout on poverty. *Edited by Simeon Maile*, *83*.

Leung, L. (2007). Stressful life events, motives for internet use, and social support among digital kids. *Cyberpsychology & Behavior*, 10(2), 204-214.

Levin, C., Ilgen, M., & Moos, R. (2007). Avoidance coping strategies moderate the relationship between self-efficacy and 5-year alcohol treatment outcomes. *Psychology of Addictive Behaviors, 21*(1), 108–113. https://doi.org/10.1037/0893-164X.21.1.108

Love, T., Laier, C., Brand, M., Hatch, L., & Hajela, R. (2015). Neuroscience of Internet pornography addiction: A review and update. *Behavioral sciences*, *5*(3), 388-433.

Low, N. C., Dugas, E., O'Loughlin, E., Rodriguez, D., Contreras, G., Chaiton, M., & O'Loughlin, J. (2012). Common stressful life events and difficulties are associated with mental health symptoms and substance use in young adolescents. *BMC psychiatry*, 12, 116. https://doi.org/10.1186/1471-244X-12-116.

Lowe H, Cook A. (2003). Mind the gap: Are students prepared for higher education? J Furt Higher Educ. 27: 53–76.

Makhubela, M. (2020). Assessing psychological stress in South African university students: Measurement validity of the perceived stress scale (PSS-10) in diverse populations. *Current Psychology*. https://doi.org/10.1007/s12144-020-00784-3

Malhotra, N.K. (2010). *Marketing Research: An Applied Orientation* (6th Ed.). USA: Pearson Education.

Manago, A. M., Graham, M. B., Greenfield, P. M., & Salimkhan, G. (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology*, *29*(6), 446-458.

Mason, H. D. (2017). Stress-Management Strategies among First-Year Students at a South African University: A Qualitative Study. *Journal of Student Affairs in Africa*, *5*(2), 131–149. https://doi.org/10.24085/jsaa.v5i2.2744

McCraty, R. (2007). When Anxiety Causes Your Brain to Jam Use Your Heart. Institute of Heart Math.

McCraty, R., Dana, T., Mike, A., Pam, A., and Stephen, J. (2000). Improving Test-Taking Skills and Academic Performance in High School Students Using Heart Math Learning Enhancement Tools. Institute of Heart Math.

McLaughlin, K. A., & Hatzenbuehler, M. L. (2009). Stressful life events, anxiety sensitivity, and internalizing symptoms in adolescents. *Journal of abnormal psychology*, *118*(3), 659.

McMillan, W. (2013). Transition to university: the role played by emotion. *European Journal of Dental Education*, *17*(3), 169-176.

Mdepa, W., & Tshiwula, L. (2012). Student diversity in South African higher education. *Widening participation and lifelong learning*, *13*(1), 19-33.

Moeketsi, L. & Maile, S. (2008). HSRC Policy Brief High University Drop-Out Rates: a threat To South Africa‘s Future infor@hsrc.ac.za /www.hsrc.ac.za

Mosallam, A. Y., & Thabet, A. A. (2016). Coping with stressful life events and mental health disorders among university students. *BAOJ Psychology*, *1*(3).

Moss, D. (2002). Psychological Perspectives anxiety Disorders. *Performance Anxiety: Origins and Management. 1st ed. Thompson Learning*.

Murphy Munir, L. B. (1962). The widening world of childhood: Paths toward mastery. New York: Basic Books.

Murphy, L. B., & Moriarty, Alice E. (1976). Vulnerability, coping, and growth: From infancy to adolescence. New Haven, CT: Yale University Press., S., Gondal, A.Z., & Takov, V., (2019). Generalized anxiety disorder.

Nagel, T. W., Remillard, C., Aucoin, R., & Takenishi, A. (2018). Findings on student use of social media at the collegiate, undergraduate, and graduate levels: Implications for post-secondary educators. *Journal of University Teaching & Learning Practice*, *15*(1), 8.

National Institue of Mental health. (2018). Health Topics: Anxiety Disorders https://www.nimh.nih.gov/health/topics/anxiety-disorders

Nel, C., Troskie-de Bruin, C., & Bitzer, E. (2009). Students' transition from school to university: Possibilities for a pre-university intervention. *South African Journal of Higher Education*, *23*(5), 974-991.

North, D., Johnston, K., & Ophoff, J. (2014). Issues in Informing Science and Information Technology The Use of Mobile Phones by South African University Students. 11, 115–138. http://iisit.org/Vol11/IISITv11p115-138North0469.pdf

Nurius, P. S., Logan-Greene, P., & Green, S. (2012). Adverse childhood experiences (ACE) within a social disadvantage framework: Distinguishing unique, cumulative, and moderated contributions to adult mental health. *Journal of Prevention and Intervention in the Community*, *40*(4), 278–290.

of Undergraduate College Students. *Cyberpsychology, Behavior, and social networking*, *14(4)*, 183-190. doi: 10.1089/cyber.2010.0061

Orosz, G., Tóth-Király, I., & Bőthe, B. (2016). Four facets of Facebook intensity — The development of the Multidimensional Facebook Intensity Scale. *Personality and Individual Differences*, *100*(November), 95–104. https://doi.org/10.1016/j.paid.2015.11.038

Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, *25*(1), 104-112.

Papadatou-Pastou, M., Goozee, R., Payne, E., Barrable, A., & Tzotzoli, P. (2017). A review of web-based support systems for students in higher education. *International Journal of Mental Health Systems*, *11*(1), 1-20.

Pargetter, R. (2000). Transition: From a school perspective. *Journal of Institutional research*, *9*(1), 14-21.

Penley, J. A., Tomaka, J., & Wiebe, J. S. (2002). Review The association of coping to physical and psychological health outcomes: a meta-analytic review. *J Behaviour Medicine*, *25(6)*, 551-603.

Pillay, A. L., & Ngcobo, H. S. B. (2010). Sources of stress and support among rural-based first-year university students: An exploratory study. *South African Journal of Psychology*, *40*(3), 234–240. https://doi.org/10.1177/008124631004000302

Reuters. (2020). ‘Toxic’: Online abuse drives women, girls from social media. https://www.aljazeera.com/news/2020/10/5/toxic-online-abuse-drives-women-girls-from-social-media

Rhoades, G. K., Kamp Dush, C. M., Atkins, D. C., Stanley, S. M., & Markman, H. J. (2011). Breaking Up Is Hard to Do: The Impact of Unmarried Relationship Dissolution on Mental Health and Life Satisfaction. *Journal of Family Psychology*, *25*(3), 366–374. https://doi.org/10.1037/a0023627

Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, *29*(3), 1243–1254. https://doi.org/10.1016/j.chb.2012.11.012

Royal College of Psychiatrists. (2011). The mental health of students in higher education. Council Report CR166), London.

Rueger, S. Y., Malecki, C. K., Pyun, Y., Aycock, C., & Coyle, S. (2016). A meta-analytic review of the association between perceived social support and depression in childhood and adolescence. *Psychological Bulletin*, *142*(10), 1017.

Rutter, E. H. (1976). A discussion on natural strain and geological structure-the kinetics of rock deformation by pressure solution. *Philosophical Transactions of the Royal Society of London. Series A, Mathematical and Physical Sciences*, *283*(1312), 203-219.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *The British journal of psychiatry*, *147*(6), 598-611.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American journal of orthopsychiatry*, *57*(3), 316-331.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, *25*(1), 54-67.

Sadock, B. J., Sadock, V. A., & Ruiz, P. (2015). Chapter 9: Anxiety Disorders. *Kaplan & Sadock's Synopsis of psychiatry behavioral sciences/clinical psychiatry 11th edition*. Wolters Kluwer

Sahin, C. U., Aydin, M., & Kulakac, N. (2020). Anxiety, Motivation, Stress Levels and Associated Factors Among University Students in the COVID-19 Pandemic. *Cyprus Journal of Medical Sciences*. https://doi.org/10.5152/cjms.2020.2685

SAS Institute Inc (2002). *SAS 9.1.3 Help and Documentation*. Cary, NC: SAS Institute Inc.

Scealy, M., Phillips, J. G., & Stevenson, R. (2002). Shyness and Anxiety as Predictors of Patterns of Internet Usage. *Cyberpsychology and Behavior, 5(6)*, 507-515.

Scott, E. (2021). Avoidance Coping and Why It Creates Additional Stress. Available at: https://www.verywellmind.com/avoidance-coping-and-stress-4137836#citation-2.

Shanahan, L., Copeland, W., Costello, E. J., & Angold, A. (2011). Cumulative prevalence of psychiatric disorders by young adulthood: A prospective cohort analysis from the Great Smoky Mountains Study. *Journal of the American Academy of Child and Adolescents Psychiatry, 50*(3), 252–261.

Singh, S., Dixit, A., & Joshi, G. (2020). "Is compulsive social media use amid COVID-19 pandemic addictive behavior or coping mechanism?. *Asian journal of psychiatry, 54*, 102290.

Smith, K. (2004). School to university: An investigation into the experience of first-year students of English at British universities. *Arts and Humanities in Higher Education*, *3*(1), 81-93.

Soper, D.S. (2021). Sobel Test Calculator for the Significance of Mediation [Software]. Available from https://www.danielsoper.com/statcalc.

Stangor, C. (2011). *Research methods for the behavioural sciences* (4th Ed.). California: Wadsworth.

Steckman, L. M., & Andrews, M. J. (Eds.). (2017). *Online around the world: A geographic encyclopedia of the Internet, social media, and mobile apps*. ABC-CLIO.

Stockdale, L. A., & Coyne, S. M. (2020). Bored and online: Reasons for using social media, problematic social networking site use, and behavioral outcomes across the transition from adolescence to emerging adulthood. *Journal of Adolescence*, *79*, 173-183.

Sunday, O. (2015). *the Vicious Cycle of*. 1–6.

Swift, P., Cyhlarova, E., Goldie, I., & O'Sullivan, C. (2014). Living with anxiety. *London: Mental Health Foundation*.

Tang, J., Yu, Y., Du, Y., Ma, Y., Zhang, D., & Wang, J. (2014). Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addictive Behaviors*, *39*(3), 744–747. https://doi.org/10.1016/j.addbeh.2013.12.010

Tolor, A., & Fehon, D. (1987). Coping with Stress: A Study of Male Adolescents' Coping Strategies as Related to Adjustment. Journal of Adolescent Research, 2(1), 33–42. https://doi.org/10.1177/074355488721003

Upadhayay, N., & Guragain, S. (2017). Internet use and its addiction level in medical students. *Advances in medical education and practice*, *8*, 641.

Van Walbeek, C., & Chelwa, G. (2019). Using price-based interventions to reduce abusive drinking in the Western Cape Province.

Vannucci, A., Flannery, K. M., & Ohannessian, C. M. C. (2017). Social media use and anxiety in emerging adults. *Journal of Affective Disorders*, *207*(July 2016), 163–166. https://doi.org/10.1016/j.jad.2016.08.040

Vitasari, P., Wahab, M. N. A., Othman, A., Herawan, T., & Sinnadurai, S. K. (2010). The relationship between study anxiety and academic performance among engineering students. *Procedia-Social and Behavioral Sciences*, *8*, 490-497.

Werner, E. E. (1984). Resilient children. *Young children*.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Cornell University Press.

Wickham, S., Jones, B., Coetzee, G., & Bailey, T. (2008). Factors that facilitate success for disadvantaged higher education students. *An investigation into approaches used by REAP, NSFAS and selected higher education institutions. Cape Town: Rural Education Access Program (REAP)*.

Wiederhold, B. K. (2020). Using Social Media to Our Advantage: Alleviating Anxiety during a Pandemic. *Cyberpsychology, Behavior, and Social Networking*, *23*(4), 197–198. https://doi.org/10.1089/cyber.2020.29180.bkw

Wintre, M. G., & Yaffe, M. (2000). First-year students' adjustment to university life as a function of relationships with parents. *Journal of adolescent research*, *15*(1), 9-37.

World Health Organisation. (2019). Retrieved March 10, 2020, from Adolescent mental health: https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

Yan, W., Li, Y., & Sui, N. (2014). The relationship between recent stressful life evnts, personality traits, perceived family functioning and internet addiction among college students. *Stress Health*, 30, 3-11.

8. Appendices

Appendix A: Demographic Scale

1. **Gender:** Male/ Female/ Other
2. **Age:** Open-ended
3. **Ethnicity:** African White Indian Chinese Other: Specify
4. **Home Language:** Setswana isiXhosa Tshivenda Xitshonga isiZulu Afrikaans English Sesotho Sepedi Sign language Other: Specify
5. **Faculty:** Sciences Commerce, Law and Management Engineering Health Sciences Humanities
6. **Year of Study:** 1 2 3 4

- **Home Residence:** Gauteng Limpopo North-West Mpumalanga Free State Northern Cape KwaZulu-Natal Western Cape Eastern Cape Other: Specify

Appendix B: The Social Readjustment Rating Scale

Please complete the following questionnaire. If you have not experienced the event, select "1" for "no occurrence". If you have, select "0" for occurrence.

Stressful Life Events	No occurence	Occurence
1. Not getting desired grades	0	29
2. Problem with assignments, tests, and or exams	0	37
3. Financial difficulties (e.g., debts, lack of pocket money)	0	39
4. Troubles with registration (e.g., timetable clashes and system failure)	0	39
5. Change in living conditions/accommodation	0	31
6. Troubles with transport	0	26
7. Death of a relative or close friend	0	73

8. Breaking up with a boy/girlfriend	0	73
9. Failing a course	0	47
10. Entering a new relationship (e.g., new boyfriend/girlfriend)	0	38
11. Having to retake or write a supplementary exam	0	47
12. Loss of a cellphone, tablet, or tablet computer	0	39
13. Personal injury or illness	0	63
14. Serious argument with a close friend	0	40
15. Illness in the family (e.g., cancer, diabetes)	0	45
16. Death of a family member (e.g., parent, sibling)	0	100
17. Arguments with parents (dressing, curfew, etc.)	0	39
18. Change in acceptance by peers	0	29
19. Trouble with parents	0	39
20. Serious argument with lecturer	0	30
21. Problem with alcohol or drugs	0	29
22. Trouble with police	0	63
23. Trouble with law enforcement (e.g., fraud, parents in jail)	0	63
24. Excessive alcohol use by parents	0	39
25. Unplanned pregnancy	0	45
26. Getting married	0	58

Appendix C: Beck's Anxiety Inventory

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not at	Mildly,	Moderately	Severely

	all	but it didn't bother me much	– it wasn't pleasant at times	– it bothered me a lot
1. Numbness or tingling	0	1	2	3
2. Feeling hot	0	1	2	3
3. Wobbliness in legs	0	1	2	3
4. Unable to relax	0	1	2	3
5. Fear of worst happening	0	1	2	3
6. Dizzy or lightheaded	0	1	2	3
7. Heart pounding/ racing	0	1	2	3
8. Unsteady	0	1	2	3
9. Terrified or afraid	0	1	2	3
10. Nervous	0	1	2	3
11. Feeling of choking	0	1	2	3
12. Hands trembling	0	1	2	3
13. Shaky or unsteady	0	1	2	3
14. Fear of losing control	0	1	2	3
15. Difficulty in breathing	0	1	2	3
16. Fear of dying	0	1	2	3
17. Scared	0	1	2	3
18. Indigestion	0	1	2	3
19. Faint/lightheaded	0	1	2	3
20. Face flushed	0	1	2	3
21. Hot/ cold sweats	0	1	2	3

Appendix D: The Multidimensional Facebook Intensity Scale

In the following, you are going to read items related to Facebook use. For each statement, please indicate your answer on the following scale:

1 - Strongly disagree. 2 - Disagree. 3 - Neither agree nor disagree.

4 - Agree. 5 - Strongly agree.

Persistence: 1-4

Boredom: 5-7

Overuse: 8-10

Self-expression: 11-13

	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
1. If I could only visit one site on the internet, it would be Facebook.	1	2	3	4	5
2. I feel bad if I don't check my Facebook daily.	1	2	3	4	5
3. I often search for internet connection in order to visit Facebook.	1	2	3	4	5
4. Before going to sleep, I check Facebook once more.	1	2	3	4	5
5. Watching Facebook posts is good for overcoming	1	2	3	4	5

boredom.					
6. When I'm bored, I often go to Facebook.	1	2	3	4	5
7. If I'm bored, I open Facebook.	1	2	3	4	5
8. I spent time on Facebook at the expense of my obligations.	1	2	3	4	5
9. I spend more time on Facebook than I would like to.	1	2	3	4	5
10. It happens that I use Facebook instead of sleeping.	1	2	3	4	5
11. My Facebook profile is rather detailed.	1	2	3	4	5
12. I like refining my Facebook profile.	1	2	3	4	5
13. It's important for me to update my Facebook profile	1	2	3	4	5

regularly.					