

https://dspace.org/

The Relationship Between Sensory Disability Status and Contraceptive Use Among Women Aged 15- 49 Years Old In South Africa

Sifora, Kutlwano Katlego Kimberly

2024
University of the Witwatersrand, Johannesburg
https://hdl.handle.net/10539/44575
Sifora, Kutlwano Katlego Kimberly. (2024). The Relationship Between Sensory Disability Status and Contraceptive Use Among Women Aged 15- 49 Years Old In South Africa [Masters dissertation, University of the Witwatersrand, Johannesburg]. WIReDSpace. https://hdl.handle.net/10539/44575

Downloaded from a DSpace repository. https://dspace.org/

THE RELATIONSHIP BETWEEN SENSORY DISABILITY STATUS AND CONTRACEPTIVE USE AMONG WOMEN AGED 15–49 YEARS OLD IN SOUTH AFRICA

Kutlwano Katlego Kimberly Sifora

Student number: 1483686

Research Paper Submitted to the Faculty of Humanities, University of the Witwatersrand, Johannesburg, in partial completion of the requirements for a Masters Degree (MA) in the field of Demography and Population Studies

Supervised by Prof. Nicole De Wet-Billings

DECLARATION

I, Kutlwano Katlego Kimberly Sifora, declare that this paper represents my original work. I have duly acknowledged and referenced all secondary materials used in accordance with the American Psychological Association (APA) referencing style. This paper is being submitted to the Faculty of Humanities for a Master's Degree in Demography and Population Studies. Additionally, I affirm that this paper has not been previously submitted to any other university for examination or degree purposes.

Student's signature **Date**



12 March 2024

DEDICATION

To the Almighty, whose grace, wisdom, and guidance have sustained me throughout this journey, I offer my heartfelt gratitude. Your infinite blessings, unwavering presence, and divine guidance have illuminated my path, filling my heart with hope, strength, and perseverance. My deepest gratitude goes out to Leslie and Jenny Sifora, my loving parents, who have been my constant sources of support and inspiration while I have pursued my academic goals. Your belief in my abilities and your sacrifices have made this achievement possible. I will always be appreciative of your love, guidance, and inspiration. To my supportive siblings, Obakeng and Tiro Sifora, your kindness, understanding, and willingness to listen have made even the toughest challenges more manageable. To my cherished nephew, Puso Sifora, may this work inspire your own academic pursuits and encourage you to pursue your dreams with passion and determination.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to

- My supervisor, Professor Nicole De Wet-Billings, for her ongoing support, insightful guidance, and commitment to fostering my scholarly development. Her expertise, encouragement, and mentorship have been instrumental in navigating the complexities of this research project. I am truly fortunate to benefit from her expertise and guidance, and I am grateful for the opportunity to learn and grow under her mentorship.

- My former supervisor, Dr. Sasha Frade, I am deeply appreciative of her mentorship. Her wisdom, encouragement, and constructive feedback have profoundly influenced my academic journey and shaped the foundation of this research endeavour.

- My mentor, Dr. Million Phiri, for his generosity, wisdom, and unwavering belief in my abilities. His mentorship has not only shaped the outcome of this research but has also played a significant role in my personal and professional development as a researcher.

- Ms. Rebaone Petlele and Mr. Bwalya Bupe Bwalya, for dedicating their time and expertise to proofread and provide insightful comments on this research report.

- Ms. Tswelopele Makgale, her encouragement, collaboration, and willingness to lend a helping hand have been instrumental in navigating the challenges of our coursework and research.

- The Honours and Masters group, Doctoral students, and esteemed staff of the Demography and Population Studies programme for their support throughout the course of my studies.

- I would like to thank the Demographic and Health Survey (DHS) for providing me access to the dataset used in this study.

TABLE OF CONTENTS

DECLARATION i
DEDICATION ii
ACKNOWLEDGEMENTS iii
TABLE OF CONTENTS iv
LIST OF TABLES vii
LIST OF FIGURES viii
LIST OF ACRONYMS ix
ABSTRACT x
CHAPTER 1 1
INTRODUCTION 1
1.1 Introduction 1
1.2 Background 1
1.3 Problem statement 3
1.4 Research questions 6
1.4.1 Main research question 6
1.4.2 Sub-questions 6
1.5 Research objectives 7
1.5.1 Main research objective 7
1.5.2 Sub-objectives 7
1.6 Justification 7
CHAPTER 2 9
LITERATURE REVIEW 9
2.1 Introduction 9
2.2 Understanding contraceptives: definition and uses 9
2.3 Global trends in contraceptive use 10

2.4 Global trends in contraceptive non-use 11
2.5 Regional trends in contraceptive use 12
2.6 Regional trends in contraceptive non-use 13
2.7 South African trends in contraceptive use and non-use 14
2.8 Challenges in access to contraceptive methods and use in South Africa 15
2.9 Determinants of contraceptive use 16
2.10 Studies on sensory disabilities 17
2.11 Research gaps in contraceptive studies 19
2.12 Theoretical and conceptual models 20
2.12.1 Theoretical Framework 20
2.12.2 Conceptual framework 22
CHAPTER 3 24
METHODOLOGY 24
3.1 Introduction 24
3.2 Study area 24
3.3 Study design 25
3.4 Data source 25
3.5 Sampling strategy 26
3.6 Study population and sample size 26
3.7 Key study variables 27
3.7.1 Definition of the dependent variable 27
3.7.2 Definition of the main independent variable 27
3.7.3 Definition of control variables 28
3.8 Research Hypothesis 33
3.9 Analytical strategy 33
3.10 Data access 34
3.11 Ethics statement 34

CHAPTER FOUR 35
RESULTS 35
4.1 Introduction 35
4.2 Sample distribution 35
4.3 Sample characteristics and contraceptive prevalence, (SADHS 2016) 37
4.3 Relationship between demographic and socioeconomic characteristics and contraceptive use, (SADHS 2016) 43
4.4 Relationship between sensory disability status and contraceptive use, (SADHS 2016) 45
4.5 Testing of Hypothesis 49
CHAPTER FIVE 50
DISCUSSION AND CONCLUSION 50
5.1 Introduction 50
5.2 Sensory disability status and contraceptive use in South Africa 50
5.3 Prevalence of contraceptive use 51
5.4 Demographic and socioeconomic factors associated with contraceptive use in South Africa 52
5.5 Applicability of the findings to the theoretical and conceptual frameworks 56
5.6 Strengths and limitations of the study 57
5.7 Conclusion 58
5.8 Recommendations 59
5.8.1 Further research 59
5.8.2 Policy significance 61
REFERENCES 63

LIST OF TABLES

Table 3.1: Definition of the dependent variable 27
Table 3.2: Definition of the main independent variable 28
Table 3.3: Definition of control variables..... 30
Table 4.1: Frequency and percentage distribution of demographic and socioeconomic characteristics among women aged 15–49 years old in South Africa, (SADHS, 2016)..... 36
Table 4.2: Frequency and percentage distribution of contraceptive use by demographic and socioeconomic characteristics among women aged 15–49 years old in South Africa, (SADHS, 2016) 40
Table 4.3: Unadjusted odds ratios for the binary logistic regression of the association between the background characteristics and contraceptive use, (SADHS, 2016)..... 43
Table 4.4: Adjusted odds ratios for the stepwise multivariate binary logistic regression of the association between all the independent variables with contraceptive use, (SADHS, 2016) . 47

LIST OF FIGURES

Figure 2.1: Adaptation of Andersen and Newman's Behavioural Model for Health Service Utilisation (1973) 22
Figure 2.2: Conceptual framework adapted from Andersen and Newman's Behavioural Model for Health Service Utilisation (1973) 22
Figure 3.1: Map of South Africa 25
Figure 4.1: Percentage distribution of contraceptive use among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683 37
Figure 4.2: Percentage distribution of type of contraceptive among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683 38
Figure 4.3: Percentage distribution of sensory disability status among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683 38
Figure 4.4: Percentage distribution of contraceptive use by sensory disability status among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683 39
Figure 4.5: Percentage distribution of contraceptive use by province among women aged 15–49 years old in South Africa, (SADHS 2016) N=6 683 42

LIST OF ACRONYMS

BMHSU	Behavioural Model for Health Service Utilisation
CEE	Central and Eastern Europe
CI	Confidence Interval
DHS	Demographic and Health Survey
DU	Dwelling Units
EAs	Enumeration Areas
FP	Family Planning
IPV	Intimate Partner Violence
LAC	Latin America and the Caribbean
LMICs	Low- and Middle-Income Countries
MSF	Master Sample Frame
OR	Odds Ratio
PSU	Primary Sampling Units
SADHS	South Africa Demographic and Health Survey
SDGs	Sustainable Development Goals
SSA	sub-Saharan Africa
Stats SA	Statistics South Africa
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
WWDs	Women with Disabilities

ABSTRACT

Background: Studies suggest that disability significantly hinders access to reproductive health services, particularly family planning, in low- and middle-income countries. Women with disabilities have a low contraceptive use rate, leading to increased risks of unintended pregnancies and health complications. This study examined the relationship between sensory disability status and contraceptive use in South Africa. A sensory disability is a condition that affects one or more of the body's sensory functions like sight, hearing, touch, taste, or smell. In this study, sensory disabilities focused on hearing and visual impairments.

Methods: The study employed a cross-sectional design using the 2016 South Africa Demographic and Health Survey. The study focused on women of reproductive age (15–49 years old) in South Africa, who were sexually active and provided information on both their contraceptive use and sensory disability status. The outcome variable of this study was contraceptive use, and the main independent variable was sensory disability status. The control variables included demographic characteristics namely age, race, marital status, province, and place of residence, as well as socioeconomic characteristics such as employment status, wealth status, education, family planning messages, and contraceptive knowledge. The analysis was conducted using Stata 17.0 on a weighted sample of 6 683 sexually active women aged 15–49 years old who answered questions on contraceptive use. The data analysis was done in three phases. For the first phase, cross-tabulations and chi-square analysis were used to demonstrate the levels of contraceptive use as well as all characteristics of women. For the second phase, bivariate binary logistic regression models were used to determine the relationship between each of the independent variables and the outcome variable of contraceptive use. Lastly, for the third phase, a stepwise multivariate binary logistic regression was utilised to determine the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa.

Results: Among South African women of reproductive age, 55.4% were using contraceptives. Women with sensory disabilities were shown to have lower odds of using contraceptives than those without sensory disabilities, even after adjusting for all other variables [OR: 0.78, CI: 0.63873 - 0.95227]. Significant associations with contraceptive use were observed for factors

including age, race, marital status, education and province. Compared to women aged 15–24, women aged 35–39 had a much lower likelihood of using contraceptives. [OR: 0.46, CI: 0.38150 - 0.55364]. Women from races other than black were also observed to have lower odds for contraceptive use compared to black women [OR: 0.75, CI: 0.61098 - 0.92237]. Conversely, married women were significantly more likely to use contraceptives than women who were never married [OR: 1.23, CI: 1.05328 - 1.42899]. Additionally, women with secondary [OR: 1.98, CI: 1.28089 - 3.07512] or higher education [OR: 2.40, CI: 1.49931 - 3.83750] exhibited a significantly higher likelihood of contraceptive usage compared to those lacking formal education. Women residing in Western Cape [OR: 1.83, CI: 1.29743 - 2.57637], Eastern Cape [OR: 1.66, CI: 1.27747 - 2.15886], Northern Cape [OR: 1.61, CI: 1.18574 - 2.19087], KwaZulu Natal [OR: 1.51, CI: 1.17797 - 1.92456], North West [OR: 1.43, CI: 1.01266 - 2.01228], and Mpumalanga [OR: 1.50, CI: .15808 - 1.93439] were found to have a higher likelihood of using contraceptives compared to women residing in Limpopo.

Conclusions: Low contraceptive use among women with sensory disabilities in South Africa highlights the need for inclusive reproductive health services, addressing communication, information access, and societal attitudes to ensure informed decisions.

Keywords: Contraceptive use, Sensory Disability Status, South Africa

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides an overview of the study's context by examining the global and local prevalence of disability and how it relates to contraceptive use among women with disabilities. It then outlines the problem statement, articulates the study's objectives, and presents the justification for undertaking this research.

1.2 Background

Disability is a growing concern worldwide, both in terms of its increasing numbers and its growing significance on the global agenda. Roughly 1.3 billion people, equivalent to 16% of the global population, have serious disabilities (CDC, 2020). Disabilities can encompass a wide range of conditions that impact the body or mind, resulting in difficulties performing particular tasks and participating fully in the environment (CDC, 2020). Disability is thus divided into three dimensions: impairments, limitations in activities, and restrictions in participation (World Health Organization, 2001). This three-dimensional framework provides a comprehensive understanding of disability. A disability may affect various aspects such as vision, mobility, cognitive abilities, learning, communication, hearing, mental health, and social interactions (CDC, 2020). This study focuses on examining the levels and relationship between demographic, socioeconomic, and sensory disability status and contraceptive use among women aged 15–49 years old in South Africa. Sensory disability refers to the impairment of sensory functions like hearing, sight, taste, touch, smell, and spatial awareness (Abdullah et al., 2021). In this study, sensory disabilities focused on hearing and visual impairments. The study prioritised auditory and visual impairments due to their prevalence among sensory disabilities. Additionally, these impairments were chosen because individuals with visual and hearing disabilities often encounter challenges accessing health messages and face unique barriers in communication and information dissemination (Assi et al., 2020; Shukla et al., 2019). Vision and hearing interventions are some of the most cost-effective that exist, yet they are too

frequently difficult to access and poorly integrated into health services (World Health Organization, 2023b)

Globally, approximately 2.2 billion individuals, accounting for 27% of the population, experience near or distance vision impairment (World Health Organization, 2024). Moreover, over 1.5 billion people, constituting nearly 20% of the global population, are affected by hearing loss (World Health Organization, 2021). The global visually impaired population consists of 64% women, while 5% of women make up those affected by hearing loss (World Health Organization, 2021, 2023c). In India, 2.01% of women have disabilities, with 20% having visual or hearing impairments, 18% facing mobility-related disabilities, and 8% having multiple disabilities (Department of Empowerment of Persons with Disabilities, 2021). Similarly, in South Sudan, women and girls constitute 61.1% of the population with disabilities, with visual disabilities affecting 58.5% of women and hearing disabilities affecting 30% (Ghazal, 2023). This data highlights the widespread occurrence of disabilities, especially visual and hearing impairments, in developing countries. This trend may be attributed to inadequate healthcare infrastructure and resources, leading to limited access to essential health services, including early detection and treatment of vision and hearing impairments.

In South Africa, disability prevalence among persons aged 5 years or older was 6.0% in 2022, with women (7.0%) being more affected than men (4.9%) (Statistics South Africa, 2023). The prevalence varied by province, ranging from 5.0% in Limpopo to 8.5% in the Eastern Cape (Statistics South Africa, 2023). These regional differences can be attributed to various factors, such as healthcare infrastructure, access to medical services, socioeconomic conditions, and overall public health initiatives. Moreover, the 2022 Census of Population and Housing report revealed that glasses, spectacles, or contact lenses were the most frequently employed assistive devices, with a prevalence of 11.6%, accounting for 6 386 536 individuals. In contrast, individuals using hearing aids constituted 1.1% totalling 631 914 individuals (Statistics South Africa, 2023). This implies a substantial population in the country experiencing visual impairments.

Multiple studies suggest that disability poses a significant barrier to accessing reproductive health services, particularly family planning, in sub-Saharan Africa (SSA) (Alhusen et al., 2021; Ayiga & Kigozi, 2016; Beyene et al., 2023a; Rugoho & Maphosa, 2017; Tenaw et al.,

2023a; Yimer & Modiba, 2019). These hindrances encompass personal, societal, and institutional dimensions, such as stigma from healthcare providers as well as inaccessible facilities and information (Beyene et al., 2023a; Peta, 2017). According to a study conducted in Uganda, women with disabilities (WWDs) tend to use contraception less frequently as part of reproductive health care interventions (Ayiga & Kigozi, 2016). Similarly, in Ethiopia, contraceptive use was found to be low, and transport accessibility, contraceptive knowledge, and disability type were found to be influencing contraceptive use (Tenaw et al., 2023a). These disparities further heighten the existing inequalities in reproductive health care interventions. Limited access to contraception does not only affects family planning but also puts WWDs at a higher risk of unintended pregnancies, which can have significant consequences for their overall well-being and quality of life.

Additionally, studies have shed light on the specific struggles faced by women with sensory disabilities, highlighting issues ranging from paperwork difficulties to obtaining sign language interpretation services (Horner-Johnson et al., 2021; Timilsina et al., 2024). Blind individuals have reported privacy infringements during paperwork completion, while deaf participants have underscored the challenges in securing interpreters for appointments, often resulting in care disruptions due to interpreter unavailability (Horner-Johnson et al., 2021).

1.3 Problem statement

The percentage of sexually active women—cohabiting or married—or women who are capable of conceiving—who would prefer to completely stop having children or delay getting pregnant by at least two years and who are not currently using any kind of contraception is known as the "unmet need for contraception" (Bradley et al., 2012). Women who wish to stop having children are seen as having an “unmet need for limiting,” and those who want to wait two years to have children or are unsure of when or if they want children are seen as having an “unmet need for spacing” (Bradley & Casterline, 2014). In 2017, unmet need was at its lowest, measuring below 10%, in regions such as Eastern Asia, Eastern Europe, Northern America, Northern Europe, South America, and Western Europe (United Nations, 2017). This data illustrates that there is a relatively low level of unmet need in developed and some developing nations. This also highlights the effectiveness of robust healthcare systems and social policies in ensuring the well-being of populations.

The unmet need for healthcare services can be categorised according to their root causes, which encompass concerns associated with the accessibility (financial constraints), availability (waiting lists and long service times), and acceptability (cultural barriers) of these services (Bongaarts, 2016; Vahedi et al., 2021). Moreover, additional factors contributing to this issue include low levels of female education, insufficient knowledge about and access to contraception, and apprehension of side effects (Bongaarts, 2016). A study conducted using Demographic and Health Surveys (DHS) from 52 countries between 2005 and 2014 showed that married women often abstain from contraceptive use due to concerns about side effects (26%), limited sexual activity (24%), opposition from family and friends (23%), and factors like breastfeeding or absence of menstruation after childbirth (20%) (Sedgh et al., 2016). Additionally, few women stated lack of knowledge, affordability, accessibility, or not being fecund as reasons (7%) (Sedgh et al., 2016).

In numerous low- and middle-income countries (LMICs), the unmet need for family planning among pregnant women is a primary factor leading to births that are closely spaced, early-age childbearing, unsafe abortions, or instances of physical abuse (Wulifan et al., 2017). All of these factors are recognised as significant contributors to elevated rates of maternal and infant mortality (Wulifan et al., 2017). Globally, approximately 74 million women residing in LMICs experience unintended pregnancies each year (World Health Organization, 2019). Consequently, this results in 25 million unsafe abortions and 47 000 maternal fatalities annually (World Health Organization, 2019). A study conducted in Nigeria revealed that the likelihood of under-five mortality was significantly higher, nearly twice as much, for children born to mothers with unmet needs for either spacing or limiting pregnancies compared to children born to mothers who reported having their family planning needs met (Adedini et al., 2015). However, the unmet need for family planning not only has adverse effects on women's reproductive health but also hampers their engagement in essential economic and educational activities (Ahinkorah, 2020; Habte et al., 2023; Wulifan et al., 2017). Addressing this situation is pivotal for improving overall health and ending the poverty cycle.

Globally, the highest share of women experiencing unmet needs for contraception is found in sub-Saharan Africa (SSA). The overall prevalence of unmet need for contraception stands at 22.9%, with variations ranging from 10% in Zimbabwe to 38% in Sao Tome and Principe and Angola (Phiri et al., 2023). This may be due to societal and personal barriers, such as civil war,

political disturbances, lack of health services, religious and cultural values (Bahamondes & Peloggia, 2019). This significantly contributes to the elevated levels of fertility and unsafe abortion rates in SSA (United Nations, 2019b). Sub-Saharan Africa possesses the highest rate of unintended pregnancies among all global regions, standing at 91 per 1,000 women (Bankole et al., 2020). In South Africa, approximately one in five women in the reproductive age group (15–49 years) experience an unmet need for contraception (The South African Medical Research Council, 2022). Among adolescent girls aged 15–19, the unmet need is even higher, at 31%, and among young women aged 20–24 years, it stands at 28% (The South African Medical Research Council, 2022).

Women with disabilities in Sub-Saharan Africa often face exacerbated health challenges compared to their non-disabled counterparts. This includes sexually transmitted infections, unintended pregnancies, unsafe abortions and violence. In Ethiopia, the prevalence of unintended pregnancy among women with disabilities was 65.6%,whereas for women without disabilities it was reported at 30% (Bekele & Fekadu, 2021; Tenaw et al., 2023b). A study conducted in Uganda showed that 64% of Ugandan women with disabilities reported ever experiencing physical, sexual, or emotional intimate partner violence (IPV), compared to 55% of women without disabilities (Valentine et al., 2019). Women experiencing IPV may face barriers to accessing and using contraceptives. The nexus between the adverse health outcomes and contraceptive utilisation underscores the critical need for tailored interventions that not only address the unique health needs of women with disabilities but also prioritise their reproductive autonomy and access to comprehensive sexual healthcare. Without evidence-based research highlighting the disparities and health inequalities faced by women with disabilities, there may be insufficient investment in healthcare infrastructure, services, and programs tailored to their needs.

Women with disabilities (WWDs) in LMICs face a low contraceptive use rate and significant unmet needs compared to their non-disabled counterparts. For example, in Ethiopia, contraceptive use among WWDs ranged from 13% to 31.1%, with an unmet need of 24.3% (Beyene et al., 2023a; Mesfin, 2021; Tessema et al., 2015; Yimer & Modiba, 2019). It was evident that the unmet need for family planning was notably high among WWDs in Ethiopia, and this was significantly associated with factors such as age, educational status, partner involvement and desired number of children (Beyene et al., 2019, 2023a; Mesfin, 2021;

Tessema et al., 2015). Low contraceptive use among WWDs carries significant consequences, including heightened risks of unintended pregnancies and associated health complications (Tenaw et al., 2023a). This situation exacerbates financial strain, impedes educational and economic prospects, and contributes to psychological stress among affected individuals. Moreover, it perpetuates cycles of poverty and amplifies social stigma and discrimination faced by WWDs (Beyene et al., 2023a). Failure to address this issue prolongs these adverse outcomes, further marginalising WWDs within society and denying them their reproductive rights. Prioritising accessible contraceptive services and comprehensive reproductive healthcare for WWDs is crucial to mitigating these consequences and upholding their dignity and autonomy. It is against this background that this study examined the relationship between sensory disability status and contraceptive use in South Africa.

1.4 Research questions

1.4.1 Main research question

What is the relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa?

1.4.2 Sub-questions

1. What is the prevalence of contraceptive use among women aged 15–49 years old in South Africa?
2. What is the relationship between demographic and socioeconomic characteristics and contraceptive use among women aged 15–49 years old in South Africa?
3. What is the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa?

1.5 Research objectives

1.5.1 Main research objective

To examine the relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa.

1.5.2 Sub-objectives

1. To determine the prevalence of contraceptive use among women aged 15–49 years old in South Africa.
2. To examine the relationship between demographic and socioeconomic characteristics and contraceptive use among women aged 15–49 years old in South Africa.
3. To examine the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa.

1.6 Justification

Contraceptive use remains a significant public health issue in South Africa (Hlongwa et al., 2020a).Meeting the demand for contraception is essential, particularly in countries such as South Africa, where contraceptives play a crucial role in HIV prevention strategies (Lince-Deroche et al., 2016). The South African government has put in place several policies and initiatives to enhance contraceptive utilisation. These include the National Health Act, the 2012 National Contraception and Fertility Planning Policy, and the Campaign for Accelerated Reduction of Maternal and Child Mortality, among others (Hlongwa et al., 2020a). Despite numerous government interventions, contraceptive utilisation remains low, indicating a necessity to reevaluate these programmes, with a particular focus on customising policies to effectively address the unique requirements of women with sensory disabilities.

Individuals with disabilities often face the stereotype of being perceived as unable to engage in reproduction and are often deemed unsuitable for sexual relationships, marriage, or parenthood (Addlakha et al., 2017). The sexual and reproductive health and rights of people

with disabilities continue to be debated, with particular attention given to the potential consequences (Addlakha et al., 2017). The adverse outcomes resulting from women with disabilities lacking access to contraceptives includes unintended pregnancy, abortion, adverse pregnancy outcomes, and high maternal morbidity and mortality (Beyene et al., 2023a). The prevailing stereotypes and lack of access to contraceptives for individuals with disabilities underscore the ongoing challenges in addressing their sexual and reproductive health needs. This necessitates comprehensive efforts to promote inclusivity and accessibility in healthcare services to ensure the fulfilment of their sexual and reproductive health and rights.

Ensuring access to contraception is pivotal to achieving the Sustainable Development Goals (SDGs). Sustainable Development Goals Target 3.7 seeks to guarantee universal access to sexual and reproductive health services (United Nations, 2019a). It is crucial to focus on contraceptive services and address the sexual and reproductive health needs of women with disabilities (WWDs) in order to build a genuinely inclusive society. This goal also aligns with the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) Article 25, which states that people with disabilities have the right to the best possible level of health without facing discrimination (United Nations, 2006). Additionally, Article 31 of the UNCRPD emphasises the importance of collecting and disseminating data to help design and implement policies that promote the rights of persons with disabilities (United Nations, 2006). Research on contraceptive use among women with sensory disabilities provides valuable data that can be used for evidence-based policy advocacy to address the health challenges that affect the utilisation of contraceptives among WWDs.

Additionally, this study contributes to the existing body of knowledge by providing comprehensive insights into the prevalence of contraceptive use, the factors influencing contraceptive behaviour, and the unique experiences of women with sensory disabilities in South Africa. While there is existing research on disability and its correlates, studies that specifically examine sensory disabilities among women within the context of South Africa and how these intersect with demographic and socioeconomic factors are relatively limited. By addressing these objectives, the study has the potential to inform policies and practices aimed at improving reproductive health outcomes and promoting equity in contraceptive access and utilisation.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents an examination of worldwide and local literature pertaining to the utilisation of contraceptives among women of reproductive age. It includes a comprehensive review of the topic in the global, regional, and South African contexts of contraceptive use and non-use, challenges associated with accessing contraceptives, as well as determinants of contraceptive use. Additionally, the literature is explored with a focus on contraceptive practices among women with sensory disabilities. Subsequent to this literature review, the chapter shifts into a discussion on the theoretical and conceptual framework that forms the basis for the current study.

2.2 Understanding contraceptives: definition and uses

Contraception is the deliberate action taken to prevent conception, achieved through a range of means such as devices, chemicals, sexual practices, medications, or surgical procedures (Jain & Muralidhar, 2011). Contraceptive methods may be temporary or permanent (David et al., 2022). These methods encompass pills, implants, injections, patches, vaginal rings, intrauterine devices, condoms, male and female sterilisation, methods based on lactational amenorrhoea, withdrawal, and fertility awareness (World Health Organization, 2020). Conception can be avoided by hormonally altering the menstrual cycle, by physically obstructing the reproductive pathway through approaches, or by abstaining from sexual activity during a woman's fertile periods (Bansode et al., 2023). In the case of interfering with implantation, this can be achieved by introducing a foreign object into the uterus or by conducting surgical procedures that involve the removal or modification of reproductive organs (Bansode et al., 2023).

Contraception empowers women by granting them control over their reproductive health, enabling them to choose the timing of pregnancies, thereby decreasing unsafe abortions and pregnancy-related health risks (Bansode et al., 2023; David et al., 2022). Research has shown that having a short gap between births significantly increases the health risks for both the

mother and the child (Gahungu et al., 2021). Methods, such as male and female condoms, can also help to prevent the transmission of sexually transmitted illnesses, such as HIV, between partners. (United Nations, 2020a). Contraception also brings about various non-health advantages, including increased educational opportunities and empowerment for women, as well as sustainable population growth and economic development for nations (World Health Organization, 2020). Contraceptive access empowers women by enabling them to assert control, make decisions, and effectively plan their careers. This access promotes a healthier balance between personal and professional aspects of their lives (Bayr, 2020).

2.3 Global trends in contraceptive use

Globally, in 2020, 63% of married or in-union women aged 15 to 49 were using contraception, an increase from 55% in 1990 (Dasgupta et al., 2022). Contraceptive use has risen globally in all regions since 2000, with notable increases in Latin America and the Caribbean (LAC), Central and Southern Asia, Oceania, excluding Australia and New Zealand, and Western Asia (United Nations, 2020a). Between 1990 and 2019, contraceptive use increased from 20% to 28% in Oceania; 26% to 34% in Western Asia; 30% to 42% in Central and Southern Asia; and 40% to 58% in LAC (United Nations, 2020b). In all other regions, contraceptive use had already exceeded 50%, such as in Northern America and Europe (57% to 58%); Eastern Asia and South-Eastern Asia (51% to 60%); and Australia and New Zealand, going up from 56% to 58% (United Nations, 2020b). Modern contraceptive use has nearly doubled between 1990 and 2021, from 467 million to 874 million, with the proportion of women using these methods increasing from 35% to 45% (United Nations, 2022). Most women worldwide use modern contraceptives, with 90% using modern methods in 2020, except in Northern Africa, Western Asia, and Oceania, excluding Australia and New Zealand (United Nations, 2020a). Additionally, the number of people using traditional contraceptive methods rose from 84 million to 92 million between 1990 and 2021, despite a decline in the proportion from 6% to 5% (United Nations, 2022).

In 2022, the global prevalence of contraceptive use stood at 65%, with 58.7% utilising modern methods among married or partnered women (World Health Organization, 2023a). Generally, countries in the Global North exhibit higher contraceptive use rates compared to those in the Global South. A 2018 study in the United States of America revealed that 65.3% of women

aged 15 to 49 were using contraceptives, with female sterilisation (18.1%) and pills (14.0%) being the most common choices (Daniels, 2020). However, these rates were lower than in several European countries. For instance, in 2018, Norway, Czechia, and Finland boasted the highest percentages of contraceptive use among women aged 15 to 49 years old, with rates exceeding 88%, 86.3%, and 85.5%, respectively (Stewart, 2021). Nevertheless, Europe demonstrates a wide range of contraceptive usage. Montenegro, for instance, had the lowest prevalence in Europe, with less than 25% of women using any form of contraception (Stewart, 2021). Additionally, in Western Europe, the majority of contraceptive users rely on modern methods, with 95.5% using hormonal contraception, barrier methods, or sterilisation, while only 4.5% opt for traditional methods (Dereuddre et al., 2016). In Central and Eastern Europe, 77.5% use modern methods, while 22.5% rely on traditional methods (Dereuddre et al., 2016).

Compared to countries in the Global North, those in the Global South generally have lower rates of contraceptive use. In the LAC region, there are significant variations in contraceptive prevalence (OECD & The World Bank, 2020). For instance, Haiti and Guyana have reported that less than 35% of married or partnered women of reproductive age use any form of contraception (OECD & The World Bank, 2020). Similar trends have been observed in Oceania with contraceptive use, which is below the global average (63%). For instance, in Fiji, contraceptive use stands at 45% and 28.7% in Samoa for any method (Imtishal et al., 2023; UNFPA, 2015b). However, in the LAC region, there are some exceptions to countries with high contraceptive use, which include countries like Costa Rica, Colombia, Nicaragua, and Brazil, where over 75% of married or in-union women of reproductive age report using any contraceptive method (OECD & The World Bank, 2020). In the Middle East, 30.4% of women of reproductive age in Saudi Arabia used contraceptives, a rate lower than in neighbouring countries like Iraq (58%) and Jordan (63%) (Alrawi, 2021; Mahfouz et al., 2023).

2.4 Global trends in contraceptive non-use

From 2000 to 2019, the proportion of women with an unmet need for contraception remained constant at 10% (United Nations, 2019a). However, in most regions, the number of women with unmet needs has decreased, with less decline in areas with high contraceptive use rates (United Nations, 2020a). In Central and Southern Asia, the unmet need decreased from 12.6% to 9.3%, and similar declines were observed in Latin America and the Caribbean (LAC) (9.3%

to 8.0%) and Oceania, excluding Australia and New Zealand (18.4% to 17.1%). The latter two regions have witnessed a rise in the percentage of women experiencing an unmet need, increasing from 7.3% to 7.6% (United Nations, 2020a).

The unmet need for contraception is generally low in the Global North but varies among countries. According to the UN, levels above 20% are considered high, while those below 10% are considered low (United Nations, 2017). In 2017, unmet need for contraception was below 10% in Eastern Asia, Eastern Europe, Northern America, Northern Europe, South America, and Western Europe, while exceeding 20% in Melanesia, Micronesia, and Polynesia (United Nations, 2017). In Central and Eastern Europe (CEE), the unmet need for contraception ranged from 1.7% in France to around 15-20% in many CEE countries (Dereuddre et al., 2016). For example, in Turkey, 11.5% of women needed contraception (UNFPA, 2020). Similar trends were observed in North America; in Mexico, the unmet need for contraception was estimated at 11.5% among women in unions and 28.9% for women never in unions (Juarez et al., 2018).

The unmet need for contraception is significantly higher in low- and middle-income countries, with varying rates observed across different regions (Agyekum et al., 2022). In a study encompassing 52 countries in Africa, Asia, and LAC, the proportion of married women aged 15–49 years old having unmet needs ranged from 8% in Colombia to 38% in Sao Tome & Principe (Sedgh et al., 2016). Various other research studies in the global south have provided insights into the unmet need for contraception. For instance, in Oceania, a study conducted in Papua New Guinea indicated a significant unmet need for contraception of 32.2% (Agyekum et al., 2022). Asian countries had lower unmet needs compared to Oceania. For example, in Indonesia, the unmet need was 17%; in Nepal, it was 20.8%; and in Myanmar, it was 19.4% (Ayuningtyas et al., 2015; Kc et al., 2023; Wai et al., 2019). Similarly, in Arab states, a total of 15% of women aged 15–49 years old have an unmet need for contraception (UNFPA, 2015a). These findings underscore the disparities in access to contraception services across different countries.

2.5 Regional trends in contraceptive use

Contraceptive use among married or in-union women of reproductive age in sub-Saharan Africa (SSA) surged from 13% in 1990 to 33% in 2020, whereas in Northern Africa, it

increased from 26% to 34% (Dasgupta et al., 2022; United Nations, 2020b). From 2000 to 2014, countries in the Eastern and Southern regions experienced a more rapid growth in the adoption of modern contraceptive methods, with certain countries in the Southern region reaching nearly 60% utilisation rates (Odimegwu et al., 2018). However, SSA continues to have the lowest contraceptive usage rates among all regions (Dasgupta et al., 2022). This trend is commonly attributed to the widespread preference for large families (Bongaarts, 2020). Contraceptive usage rates differ significantly across different regions of Africa. For instance, in North Africa, South Sudan has a low contraceptive prevalence rate of 4.7%, while Tunisia had a much higher rate of 51% in 2018 (Frini & Muller, 2023; Kane et al., 2016). Similarly, SSA countries also exhibit diverse patterns in contraceptive utilisation. For instance, in Namibia, contraceptive use stood at 49.7%, with the lowest at 3.5% in the Central African Republic. Common methods include injectables (32%), pills (27%), implants (16%), and condoms (15%) (Apanga et al., 2020).

Moreover, there is significant variation in the use of modern contraceptive methods among women of reproductive age (15–49 years old) both within and across countries. For instance, Boadu's 2022 study found a low prevalence of modern contraceptive use in SSA at 22.0%, with injections (39.4%) and male condoms (17.5%) being the most commonly used methods (Boadu, 2022). Eswatini and Namibia have the highest modern contraceptive prevalence, with 52% of women using these methods in 2019 (United Nations, 2019a). In contrast, South Sudan had a notably lower prevalence, with only 4% of women utilising modern contraceptives (United Nations, 2019a). These findings highlight the regional variations in contraceptive method preferences, reflecting cultural, economic, and healthcare system differences in these countries.

2.6 Regional trends in contraceptive non-use

In Africa, approximately one in five women faces an unmet need for contraception (United Nations, 2017). The patterns regarding unmet contraception needs vary across different sub-regions within Africa. In the Sub-Saharan Africa (SSA) region, the overall prevalence of unmet family planning needs saw a decline from the 1995–10 to the 2011–15 periods (Phiri et al., 2023). However, this decline was not sustained, as the prevalence increased from 21% during 2011–2015 to 24% between 2016 and 2020 (Phiri et al., 2023).

In North Africa, the unmet need for contraception is notably lower when compared to SSA. For instance, in 2015, Egypt, Morocco, and Tunisia had unmet needs of 12%, 14%, and 7%, respectively (Das Shrestha et al., 2019). These figures indicate a low unmet need for contraception, resembling the levels observed in more developed regions in the global north. In contrast, the unmet need for contraception is greater than 20% in 15 countries in SSA (United Nations, 2019a). A study examining 19 Demographic and Health Surveys in SSA revealed that the overall prevalence of unmet need for contraception in the region was 23.70% (Teshale, 2022). Various research studies have indicated differing levels of unmet need for contraception. For example, a study in Burundi revealed that the unmet need stood at 32.4% among women (Nzokirishaka & Itua, 2018). Similarly, studies in Ghana (35.17%) and Benin (38.0%) showed significant unmet needs (Wulifan et al., 2019; Yeboah et al., 2023). These figures contrast with lower rates reported in Ethiopia (16.2%), Northern Nigeria (18%), Gambia (17.6%), and Malawi (21.0%) (Barrow et al., 2021; Nkoka et al., 2020; Solanke et al., 2019; Tadele et al., 2019).

2.7 South African trends in contraceptive use and non-use

Many studies have been conducted in South Africa to examine contraceptive use among women of reproductive age (Harries et al., 2019; Hlongwa et al., 2020b, 2021). In a study by Chersich et al. (2017), it was observed that the current contraceptive prevalence rate in South Africa was 49.1%, with injections (25%) being the most common method used. Comparatively, South Africa's rate is higher than the average for SSA (33%), indicating a relatively positive trend in the country's contraception initiatives. However, the prevalence is lower than that of some neighbouring countries in the southern region, such as Botswana (50.5%), Eswatini (53.4%), Lesotho (51.5%), and Namibia (52.3%) (United Nations, 2020b). This calls for renewed strategies to improve contraceptive use among women in South Africa (Bolarinwa et al., 2023).

Over the years, data trends show consistent modern contraceptive use among sexually active women, with rates remaining steady at 61% in 1998 and 59% in 2016 (Department of Health et al., 2019). However, there were changes in the methods used, including a decrease in female sterilisation, pills, and injectables and an increase in male condoms and implants, while traditional methods remained low (Department of Health et al., 2019). The decline in the use of certain methods might signify evolving preferences or barriers to accessing these specific

contraceptives. Additionally, research has shown variations in different parts of South Africa. For example, in a study conducted in Mafikeng, involving a sample of 568 women of reproductive age revealed that 16.2% of women used both condoms and non-barrier methods for protection against both pregnancy and sexually transmitted infections. Meanwhile, 40.3% relied solely on non-barrier contraception for pregnancy prevention, and 43.5% did not use any contraceptive method at all (Osuafor & Maputle, 2017). Whereas, in another study in Umlazi Township, KwaZulu-Natal, involving a sample of 433 women of reproductive age revealed that 84% were using a contraceptive method (Hlongwa et al., 2021). Additionally, the use of contraceptives varies significantly throughout provinces. The percentage of sexually active women who use modern contraceptives ranged from 51% in the Free State to 65% in KwaZulu-Natal (Department of Health et al., 2019). The variations in contraceptive utilisation among different regions and communities highlight the need for targeted and region-specific interventions.

Regarding unmet contraceptive needs in South Africa, 20% of women of reproductive age had unmet needs, and it was more prevalent among women aged 15–19 (31%) and 20–24 years (28%) (The South African Medical Research Council, 2022). Until recently, public sector clinics in the country primarily offered condoms, oral contraceptive pills, and progestin-only injectable methods (Cordero et al., 2019). However, there have been recent improvements, including the introduction of hormonal implants and increased accessibility to intrauterine devices (Cordero et al., 2019).

2.8 Challenges in access to contraceptive methods and use in South Africa

South Africa is relatively successful in terms of contraception, especially when considering its laws, policies, and service guidelines, as well as comparing its contraceptive prevalence rate to that of other African countries (Lince-Deroche et al., 2016). Nevertheless, this obscures issues related to the quality of contraceptive services, equal access, and women's capability to use their chosen contraceptive methods correctly and consistently (Harries et al., 2019). According to the SADHS data from 2016, 2% of contraceptive users stopped using their method due to barriers related to access, which included issues such as affordability and physical accessibility (Department of Health et al., 2019).

However, limiting the focus to affordability and physical access provides an incomplete and inaccurate understanding of overall access to contraceptives (Lince-Deroche et al., 2016). Healthcare providers' moral values and attitudes significantly influence their provision of sexual and reproductive health services, including contraception and abortion, affecting both the type and quality of service provided (Lince-Deroche et al., 2016; Müller et al., 2016).

Additional obstacles have been identified in various studies, such as inadequate quality of healthcare, a limited selection of modern contraceptive methods, inadequate integration of sexual and reproductive health services with primary healthcare, deteriorating infrastructure, a scarcity of trained nurses, and societal stigma (Harries et al., 2019; Kriel et al., 2023; Lince-Deroche et al., 2016). Additionally, within the South African healthcare system, women often access contraceptives from public sector clinics free of charge, but service provision challenges include extended waiting periods, restricted information, and staff judgement (Harries et al., 2019).

2.9 Determinants of contraceptive use

Many studies have looked at various factors influencing contraceptive use, including individual factors, relationship factors, and community or societal factors. In exploring the determinants of contraceptive use at the individual level, demographic and socioeconomic characteristics were found to play a significant role. For instance, research has consistently shown that age is a key determinant, with younger women often being more likely to use contraception to delay or prevent pregnancy (Ahinkorah et al., 2021; Kraft et al., 2022; Lasong et al., 2020). Additionally, education has been found to influence contraceptive behaviour, with women with secondary and tertiary education having higher rates of contraceptive use than those with no education (Apanga et al., 2020; Boah et al., 2023). Moreover, marital status has been found to influence contraceptive behaviour, with unmarried women typically having higher rates of contraceptive use compared to married women, who may be more likely to use contraception for family planning purposes (Cleland & Potter, 2019; Kraft et al., 2022). Other individual factors that have been found to influence contraceptive use are religion, race, place of residence, employment status, wealth index, number of living children, and family planning messages (Amoah et al., 2023; Boah et al., 2023; Hoo & Lai, 2023; Mahfouz et al., 2023).

When examining family and relationship factors influencing contraceptive use, research has shown that the approval and support of one's partner can significantly impact an individual's contraceptive decision-making (Agyekum et al., 2022). For instance, women who perceive their partners as supportive of contraceptive use are more likely to use contraception consistently and effectively (Hernandez et al., 2022). Other family members (e.g., parents or parents-in-law) or neighbours may also influence the practice of contraception (Bongaarts & Hodgson, 2022). Additionally, power dynamics within relationships, such as unequal decision-making authority or control over contraceptive use, can influence women's ability to access and use contraception (Nkonde et al., 2023). Therefore, understanding the dynamics of intimate relationships and the level of partner involvement in contraceptive decision-making is crucial for promoting contraceptive access and use within couples.

When examining community and societal factors influencing contraceptive use, studies have looked at the availability and accessibility of contraceptive services within the community. Research has shown that the presence of accessible healthcare facilities offering a range of contraceptive methods can positively impact contraceptive use (Kraft et al., 2022; Kristiansen et al., 2023). For example, communities with well-established family planning clinics or outreach programmes may have higher rates of contraceptive use compared to those with limited access to such services. Additionally, community norms and attitudes towards contraception can influence women's perceptions and behaviours regarding contraceptive use (Kristiansen et al., 2023; Mutumba et al., 2018). In communities where contraceptive use is culturally or socially accepted, women may be more likely to seek out and use contraception.

2.10 Studies on sensory disabilities

There is a significant disparity in the use of contraceptive methods among women with sensory disabilities. Women with sensory disabilities face barriers to accessing and using contraceptive methods effectively. Research in Ethiopia highlighted this issue, revealing a low utilisation rate of modern contraceptive methods at 31.1% among women with sensory disabilities (Yimer & Modiba, 2019). A striking difference was noted between blind women (66%) and deaf women (33.5%) in reporting the use of contraception services, emphasising the challenges faced by the latter (Yimer & Modiba, 2019). However, the study did not report on the prevalence of contraception among women without disabilities for comparison. Another study in Ethiopia

further emphasised this disparity, indicating that participants with hearing disabilities were 62% less likely to use contraceptives compared to those with vision disabilities (Tenaw et al., 2023). In a US study in seven states, it was found that women with vision impairments were more likely than women without disabilities to report not using contraception during their most recent sexual encounter (34.8%); nevertheless, this percentage did not differ significantly from that of women without disabilities (27.6%) (Haynes et al., 2018). This evidence builds a compelling argument for the urgent need to address these disparities in contraceptive access and use among women with sensory disabilities. Adequate measures, such as tailored healthcare services, accessible information, and awareness campaigns specifically designed for women with sensory disabilities, are essential to bridge this gap.

Deaf women face significant access issues due to their unique communication needs, often facing more challenges in healthcare than their hearing counterparts, and often being excluded from common health information sources like radio and television (Mprah et al., 2017). Some deaf women were able to access information through written materials. However, this approach was not viable for illiterate women, a common challenge among people with disabilities due to barriers to accessing education (Tun et al., 2016). A study in Ghana found that deaf women had little knowledge of contraceptive methods (Nketsia et al., 2022). Additionally, women with sensory disabilities face challenges with paperwork (Horner-Johnson et al., 2021). Blind women highlighted that the paperwork process frequently breaches their privacy rights, and for deaf women, it depends on the availability of an interpreter (Horner-Johnson et al., 2021). Socioeconomic and demographic factors associated with modern contraception use among women with sensory disabilities include higher age, marital status, knowledge of FP (family planning) methods, blindness, and self-perception compared to younger, unmarried, and deaf women (Yimer & Modiba, 2019). A study conducted in the Unites States of America found that women from minority groups, those with less education, and those without private insurance had the lowest rates of contraceptive use (Wu et al., 2017). The factors associated with contraceptive use in these studies align with those observed in research conducted within the general population (Ahinkorah, 2020; Chola et al., 2020; Tiruneh et al., 2016).

2.11 Research gaps in contraceptive studies

Contraceptive utilisation plays a crucial role in safeguarding sexual and reproductive health by effectively preventing unplanned pregnancies. While extensive research has examined various factors associated with contraceptive use, there is a significant gap in the literature concerning disability status as a factor in using contraceptives. The existing literature primarily focuses on contraceptive use among the general population, often overlooking the specific needs of women with disabilities. Additionally, previous studies that have looked at sensory disability status and contraceptive use have primarily focused on disability as a study population rather than as an associated factor (Beyene et al., 2023b; Mesfin Yesgat et al., 2020; Tenaw et al., 2023a). Viewing disability solely as a study population overlooks the complex interplay between disability and other factors, which can significantly impact the experiences and outcomes of women with disabilities.

While prior research has provided valuable insights into the connection between disability and contraceptive use, most of the studies did not analyse various disability types separately (Casebolt et al., 2022; Horner-Johnson et al., 2021; Senders & Horner-Johnson, 2022; Wu et al., 2017). Instead, the studies often grouped sensory disabilities with other disability types. This study focuses on sensory disabilities, aiming to provide valuable data on the unique challenges and requirements faced by women with sensory impairments. Additionally, previous research predominantly relied on qualitative methods, which did not explore the levels and factors related to contraceptive use (Horner-Johnson et al., 2021). In contrast, this study employed a quantitative approach to address these aspects. In South Africa, previous research has predominantly focused on exploring the connection between disability and sexual reproductive health. Nevertheless, there is a notable research gap when it comes to directly examining the relationship between sensory disability status and the use of contraceptives. The prior studies focused on provincial analysis, limiting the applicability of their findings to the entire country (Gichane et al., 2017; Mavuso & Maharaj, 2015). In contrast, the primary goal of this study is to offer a perspective that is representative of the entire nation.

In summary, the literature review has provided a comprehensive overview of various aspects related to contraceptive use, non-use, and the intersection with sensory disabilities. It looked at global trends of contraceptive use and delved into regional and South African-specific trends,

highlighted the challenges in access to contraceptive methods and the determinants influencing their use. Moreover, by examining studies on sensory disabilities, the review recognised the importance of considering the unique needs and perspectives of this population in reproductive health research. However, despite the valuable insights gained, there remain notable research gaps, particularly in understanding the complexities surrounding contraceptive use among women with sensory disabilities.

2.12 Theoretical and conceptual models

2.12.1 Theoretical Framework

This research paper has adopted the Behavioural Model for Health Service Utilisation (BMHSU). The model proposed by Andersen and Newman suggests that there are various factors influencing the utilisation of healthcare services, which can be grouped into three main categories: predisposing factors, enabling factors, and need factors (Andersen & Newman, 2005). The predisposing component of the model suggests that certain individuals are more likely to use healthcare services due to individual characteristics, such as demographics, social structure, and personal beliefs, even before specific health issues arise (Andersen & Newman, 2005). The enabling component of the model ensures individuals can access healthcare services despite their predisposition to use them. Enabling conditions, such as income, health insurance coverage, and third-party payment, make healthcare resources accessible (Andersen & Newman, 2005).

Besides family-related factors, the community in which a family resides can also have an impact on the utilisation of healthcare services (Andersen & Newman, 2005). One such factor is the availability of healthcare facilities and healthcare professionals within the community (Andersen & Newman, 2005). When there are ample resources and individuals can access them without significant delays, it is more likely that the population will use these services more frequently (Andersen & Newman, 2005). From an economic perspective, when medical care is affordable, one might expect people to seek healthcare services more frequently (Andersen & Newman, 2005). Other aspects of community resources include the geographic region of the country and whether the community is rural or urban (Andersen & Newman, 2005). These variables can influence healthcare utilisation because of local cultural norms regarding

healthcare practices and broader community values that shape the behaviour of individuals living in that community (Andersen & Newman, 2005).

The concept of illness level (need factor), within the context of predisposing and enabling conditions being present, is critical for the utilisation of healthcare services (Andersen & Newman, 2005). It signifies that for someone to seek healthcare services, either the individual or their family must recognise the presence of an illness or the likelihood of it occurring (Andersen & Newman, 2005). The perception of illness is the most immediate trigger for seeking healthcare services (Andersen & Newman, 2005).

Several studies conducted in Uganda, Malawi, Indonesia, and Bangladesh have employed the BMHSU framework as their analytical model to examine the utilisation of reproductive health services, including contraceptive use (Ahmed et al., 2021; Forty et al., 2021; Mbalinda et al., 2020; Sujarwoto et al., 2023). For example, research conducted in Bangladesh found that women between the ages of 23 and 24, those belonging to non-Muslim communities, those with two or more living children, residents of urban areas, and those who participated in joint decision-making with their husbands were more inclined to use contraceptives (Islam, 2018). The findings of the study align with Andersen and Newman's framework. The study's factors, such as predisposing factors (such as age and religion), enabling factors (such urban residence), and need factors (such as family size), all fit within the framework's categories, making it suitable for analysing the utilisation of reproductive health services among the studied population. The widespread use of the BMHSU framework in studies related to contraceptive use suggests its effectiveness and relevance in analysing healthcare utilisation patterns.

Studies conducted in South Africa have utilised the Behavioural Model for Health Service Utilisation (Mboweni & Sumbane, 2019; Mnkandla et al., 2023). For instance, one study examined the healthcare-seeking patterns of homeless substance users during the COVID-19 Lockdowns in Gauteng using this framework(Mnkandla et al., 2023). Another study investigated the factors contributing to delayed health-seeking behaviours among adolescents at the Kutlwanong clinic in the North West Province, also employing the same theory (Mboweni & Sumbane, 2019). These studies demonstrate the versatility and applicability of the Behavioural Model for Health Service Utilisation in understanding healthcare-seeking behaviours across diverse populations and contexts within South Africa.

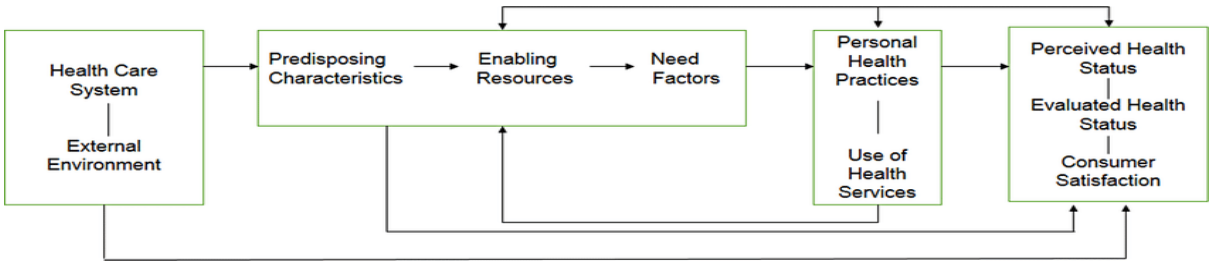

Figure 2.1: Adaptation of Andersen and Newman's Behavioural Model for Health Service Utilisation (1973)

2.12.2 Conceptual framework

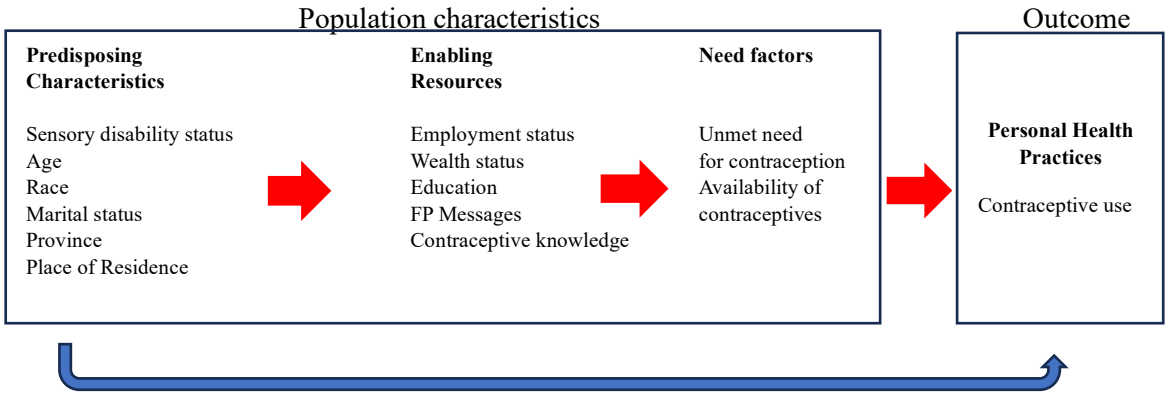

Figure 2.2: Conceptual framework adapted from Andersen and Newman's Behavioural Model for Health Service Utilisation (1973)

The conceptual framework for this study is an adaptation of Andersen and Newman's Behavioural Model for Health Service Utilisation (1973). Based on the BMHSU and the literature reviewed, the study hypothesised that the following factors would predict contraceptive use (outcome): predisposing factors—sensory disability status, age, race, marital status, province, and place of residence; enabling factors—employment status, wealth status, education, FP messages, and contraceptive knowledge; and need factors—unmet need for contraception and availability of contraceptives. The factors involved in contraceptive decision-making are interlinked. Predisposing factors, encompassing demographic characteristics, set the stage for understanding why women may consider or reject contraceptives. Enabling factors, often socioeconomic, come into play once women are inclined towards contraceptives, providing the means necessary for action. These factors bridge the gap between predispositions and actual utilisation. Need factors emerge when women

recognise specific reproductive health requirements. Ultimately, contraceptive use occurs when these predisposing, enabling, and need factors align. However, it is essential to acknowledge that some predisposing characteristics may directly impact contraceptive use without necessarily relying on enabling resources. For instance, cultural beliefs or personal values may influence contraceptive decisions independent of the availability of resources. The framework excludes elements like the healthcare system and perceived and evaluated health status to focus specifically on healthcare access and utilisation, aligning closely with the research objectives.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter outlines the methodology employed to achieve the objectives of this study. This encompasses an overview of the study area, study design, data source, sampling approach, study population, sample size, and a delineation of both independent and dependent variables. It also encompasses the analytical strategy, data management procedures, and ethical considerations.

3.2 Study area

The research was conducted in South Africa, situated in the southernmost part of the African continent. It shares borders with Namibia to the northwest, Botswana and Zimbabwe to the north, and Mozambique and Swaziland to the northeast and east (Hall et al., 2023). South Africa has coastlines along the Indian Ocean to the southeast and the Atlantic Ocean to the southwest (Hall et al., 2023). Geographically, the country is split into nine provinces, with the Gauteng province constituting barely 1.5% of the country's land area and the Northern Cape region encompassing approximately 30% (Government Communications, 2022). These provinces are further subdivided into metro and districts, and each district is divided into local municipalities (Government Communications, 2022). Statistics South Africa (Stats SA) reported in their 2022 Census that the population comprises approximately 62 million individuals (Statistics South Africa, 2023). The majority of the population is located in Gauteng, with 15 million people, while the smallest population is in the Northern Cape, with 1 million residents (Statistics South Africa, 2023).



Figure 3.1: Map of South Africa
Source: https://gisgeography.com/south-africa-map/#Administration-Map

3.3 Study design

The study utilised a cross-sectional design, measuring exposures and outcomes in participants at a single point in time (Setia, 2016). Unlike other types of observational studies, cross-sectional studies do not follow individuals over time. These studies are particularly useful for assessing prevalence rates and exploring associations between various factors and outcomes (Wang & Cheng, 2020). The research had a quantitative nature since it relied on pre-existing quantitative secondary data. Quantitative data offered the advantage of working with larger sample sizes and facilitated the ability to make generalisations based on statistical analysis.

3.4 Data source

The research utilised data from the 2016 South Africa Demographic and Health Survey (SADHS). This survey included a specific questionnaire for women aged 15–49 years old. The questionnaire covered various topics such as demographic details (like age, education, and media exposure), knowledge and use of family planning methods, as well as marriage and sexual activity (Department of Health et al., 2019). The questionnaires were prepared in

English and then translated into South Africa's 10 other official languages for comprehensive data collection (National Department of Health et. al, 2019).

The 2016 SADHS utilised the Stats SA Master Sample Frame (MSF), which was established using the enumeration areas (EAs) from the 2011 Census (Department of Health et al., 2019). In this frame, manageable-sized EAs were designated as primary sampling units (PSUs) (Department of Health et al., 2019). Smaller neighbouring EAs were combined to create new PSUs, and larger EAs were divided into conceptual PSUs (Department of Health et al., 2019). The MSF provides information about the geographic type and the estimated number of residential dwelling units (DUs) in each PSU (Department of Health et al., 2019). Stats SA employed a sampling method based on dwelling units, where a single DU could contain one or more households (Department of Health et al., 2019).

3.5 Sampling strategy

The 2016 SADHS employed a stratified, two-stage sampling approach. Each province was divided into urban, rural, and traditional sectors, creating 26 sampling strata (Department of Health et al., 2019). In the first stage, 750 PSUs were selected, with the probability based on PSU size and independent selection in each stratum (468 in urban regions, 224 in traditional areas, and 58 in farm areas). In the second stage, 20 dwelling units per cluster were chosen systematically with equal probability (Department of Health et al., 2019).

3.6 Study population and sample size

This study focused on women of reproductive age in South Africa, aged 15–49 years old, who were sexually active and provided responses to questions about both contraceptive use and their sensory disability status. Exclusions from the study encompassed women who were not currently sexually active (N = 1 038; 12.19%), as well as those who were pregnant (N= 304; 3.57%), sub-fecund/infecund (N = 142; 1.67%), or sterilised (N = 317; 3.72%). These exclusions were implemented because the questions related to contraceptive use were not applicable to these specific groups. Consequently, the unweighted sample size of the study following the application of these exclusion criteria was 6 723, and the weighted sample size was 6 683 participants.

3.7 Key study variables

3.7.1 Definition of the dependent variable

The dependent variable in this study was contraceptive use. Contraceptive use was defined in the DHS by asking women the question, "Which contraceptive method are you using to prevent a pregnancy?" The responses to this question were categorised into four options: 1) Using modern methods; 2) Using traditional methods; 3) Non-user - intents to use later; and 4) Does not intend to use. For this study, the responses of "non-user- intents to use later" and "does not intend to use" were merged to create a category labelled "Not using" (coded as 0). The responses "using modern methods" and "using traditional methods" were combined into a category labelled "Using" (coded as 1).

Table 3.1: Definition of the dependent variable

Variable code	**Variable name**	**Variable definition**	**Original codes**	**How variables are coded in this study**
v364	Contraceptive use	Which contraceptive method are you using to prevent a pregnancy?	Using modern methods (1) Using traditional method (2) Non-user – intends to use later (3) Does not intend to use (4)	Not using (0) Using (1)

3.7.2 Definition of the main independent variable

The main independent variable in this study was the sensory disability status, derived from two variables: "difficulty hearing" and "difficulty seeing." Each of these variables originally comprised five response options. For "difficulty hearing," the choices included no difficulty

hearing (1), some difficulty (2), a lot of difficulty (3), cannot hear at all (4), and don't know (8). Similarly, for "difficulty seeing," the response options were no difficulty seeing (1), some difficulty (2), a lot of difficulty (3), cannot see at all (4), and don't know (8). To simplify the analysis, these ten responses were consolidated into two categories. The first category, labelled "No Sensory Disability" (coded as 1), was formed by combining responses indicating no difficulty hearing, no difficulty seeing, and those who responded with "don't know." The second category, labelled "Sensory Disability" (coded as 2), was created by grouping responses of some difficulty, a lot of difficulty, and cannot hear or see at all for each respective variable.

Table 3.2: Definition of the main independent variable

Variable code	**Variable name**	**Operational description**	**Original codes**	**How variables are coded in this study**
hdis4	Difficulty hearing	Whether a woman has a hearing impairment or not	No difficulty hearing (1) Some difficulty (2) A lot of difficulty (3) Cannot hear at all (4) Don't know (8)	No sensory disability (1) Sensory disability (2)
hdis2	Difficulty seeing	Whether a woman has a vision impairment or not	No difficulty seeing (1) Some difficulty (2) A lot of difficulty (3) Cannot see at all (4) Don't know (8)	

3.7.3 Definition of control variables

This study employed several control variables that pertained to both demographic and socioeconomic aspects. Within the demographic category, variables such as "age," "race,"

"marital status," "province," and "place of residence" were used as indicators. Conversely, in the socioeconomic category, "employment status," "wealth status," "education," "FP messages," and "contraceptive knowledge" were employed as indicators. The selection of these specific variables was guided by the existing literature examined by previous researchers.

Age was determined by asking participants, "How old were you at your last birthday?" The variable was divided into 7 categories: 15–19 (1), 20–24 (2), 25–29 (3), 30-34 (4), 35–39 (5), 40–44 (6), and 45–49 (7). The categorisation was not changed. Race was determined by asking participants, "Which population group do you consider yourself: Black, White, Coloured, Indian or something else?". Originally, there were 4 categories: Black (1), White (2), Coloured (3) and Indian/Asian (4). For this study, White, Coloured, and Indian/Asian categories were combined into a group called "others" to ensure a sufficiently large sample size for meaningful statistical analysis. Therefore, race was recoded into Black (1) and Others (2). Marital status was determined by asking participants, "Are you currently married or living together with someone as if you are married?" Initially, there were five categories: Never in union (0), Married (1), Living with partner (2), Widowed (3), Divorced (4), and No longer living together/ separated (5). In this study, Married and Living with partner were combined into "Married" because they share similar social and economic dynamics. Additionally, Divorced and No longer living together/separated were grouped as "Separated" due to the limited sample sizes in these categories when analysed separately. Therefore, the variable was recoded to Never married (1), Married (2), Widowed (3), and Separated (4). The province variable represents the region where the respondent was interviewed and was categorised as Western Cape (1), Eastern Cape (2), Northern Cape (3), Free State (4), KwaZulu Natal (5), North West (6), Gauteng (7), Mpumalanga (8), and Limpopo (9). This categorisation remained unchanged. Similarly, the place of residence variable indicates the type of residence where the respondent was interviewed, coded as Urban (1) and Rural (2), and this classification also remained unchanged.

The employment status of participants was determined by asking, “Have you done any work in the last 12 months?”. The variable was originally coded No (0) and Yes (1) and later recoded to No (1) and Yes (2). Wealth status was calculated as a composite measure of a household's overall living standard. It was categorised as Poorest (1), Poorer (2), Middle (3), Richer (4), and Richest (5). In this study, the categories "Poorest" and "Poorer" were merged to create the category "Poor," while "Richer" and "Richest" were combined to form the category "Rich."

This consolidation was undertaken due to the shared social and economic dynamics within each combined category. Consequently, the wealth status variable was redefined as Poor (1), Middle (2), and Rich (3). Education was determined by asking participants, “What is the highest level you attended: primary, secondary, or higher than secondary?”. Initially coded as No education (0), Primary (1), Secondary (2), and Tertiary (3), it was recoded to No education (1), Primary (2), Secondary (3), and Tertiary (4). Messages pertaining to family planning from various media outlets were evaluated. Respondents were asked about their awareness of family planning messages on the radio, television, and in newspapers or magazines over the past six months. Initially, three distinct variables gauged media exposure to family planning messages, with the original categories denoting "no" (0) and "yes" (1) for each media source. For the purpose of this study, family planning messages were consolidated into a single variable for a larger sample size to enhance statistical analyses. Those who answered affirmatively for any media source were grouped into a unified "yes" category, while those who responded negatively for any of the media sources were amalgamated into a collective "no" category. Therefore, FP messages were recoded as (1) representing “no” and (2) representing “yes”. Additionally, contraceptive knowledge was determined by asking participants, “Have you ever heard of (METHOD)? Initially, the variable was coded as Knows no method (0) and Knows modern method (3); it was then recoded as Knows no methods (1) and Knows modern method (2).

Table 3.3: Definition of control variables

Variable code	**Variable Name**	**Variable definition**	**Original Code**	**How variables are coded in this study**
Demographic characteristics				
v013	Age	How old were you at your last birthday?	15–19 (1) 20–24 (2) 25–29 (3) 30–34 (4) 35–39 (5) 40–44 (6) 45–49 (7)	15–19 (1) 20–24 (2) 25–29 (3) 30–34 (4) 35–39 (5) 40–44 (6) 45–49 (7)
v131	Race	Which population	Black (1)	Black (1)

		group do you consider yourself: black, white, coloured, Indian or something else?	White (2) Coloured (3) Indian/ Asian (4)	Other races (2)
v501	Marital status	What is your current marital status?	Never in union (0) Married (1) Living with partner (2) Widowed (3) Divorced (4) No longer living together/ separated (5)	Never married (1) Married (2) Widowed (3) Separated (4)
V024	Province	Region in which the respondent was interviewed	Western Cape (1) Eastern Cape (2) Northern Cape (3) Free State (4) KwaZulu Natal (5) North West (6) Gauteng (7) Mpumalanga (8) Limpopo (9)	Western Cape (1) Eastern Cape (2) Northern Cape (3) Free State (4) KwaZulu Natal (5) North West (6) Gauteng (7) Mpumalanga (8) Limpopo (9)
v025	Place of residence	Type of place of residence where the respondent was interviewed as either urban or rural.	Urban (1) Rural (2)	Urban (1) Rural (2)
Socioeconomic characteristics				
v714	Employment status	Whether or not a woman is working	No (0) Yes (1)	(1) No (1) Yes

v190	Wealth status	A composite measure of a household's cumulative living standard.	Poorest (1) Poorer (2) Middle (3) Richer (4) Richest (5)	Poor (1) Middle (2) Rich (3)
vl06	Education	What is the highest level you attended: primary, secondary, or higher than secondary	No education (0) Primary (1) Secondary (2) Higher (3)	No education (1) Primary (2) Secondary (3) Higher (4)
v384a	FP messages: Radio	In the last six months have you heard about family planning on the radio?	No (0) Yes (1)	No (1) Yes (2)
v384b	FP messages: TV	In the last six months have you seen anything about family planning on the television?	No (0) Yes (1)	
v384c	FP Message: Newspaper/ Magazine	In the last six months have you read about family planning in a newspaper or magazine?	No (0) Yes (1)	
v301	Contraceptive knowledge	Have you ever heard of (METHOD)?	Knows no method (0) Knows modern method (3)	Knows no method (1) Knows modern method (2)

3.8 Research Hypothesis

H_0: There is no relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa.

H_A: There is a relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa.

3.9 Analytical strategy

In order to address the research questions in the study, each of the research objectives was addressed.

The first objective aimed at determining the prevalence of contraceptive use among women aged 15–49 years old in South Africa. Cross-tabulations and chi-square analysis were used to demonstrate the levels of contraceptive use among women in the sample, as well as by all characteristics of women.

The second objective focused on examining the relationship between demographic and socio-economic characteristics and contraceptive use among women aged 15–49 years old in South Africa. For this objective, bivariate binary logistic regression models, showing odds ratios (OR), were used to determine the relationship between each of the independent variables and the outcome variable of contraceptive use. The statistical analyses were carried out with a significance level of 5% and a confidence interval (CI) of 95%.

The third objective focused on examining the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa. Due to the categorical and dichotomous nature of the outcome variable—contraceptive use—a stepwise multivariate binary logistic regression was employed. Odds ratios, along with their corresponding confidence intervals, were used to describe the statistical significance between the outcome variable and independent variables. The equation of the binary logistic model is as follows:

Logit [P(y = 1)|Xi…Xk] = βo + β1X1 + β2X2.....βkXk

Where:

Bo= Intercept

B1= Regression Coefficient

Xi…Xk=Independent Variables

Xi= Independent Variable (Warner, 2008)

3.10 Data access

Registration on the DHS website was essential to requesting authorisation to download the dataset for the study. A brief justification for the dataset's request was required as part of the registration process, and it was given. After receiving permission, the 2016 SADHS data was downloaded in Stata format from the DHS website and managed and analysed using the statistical software Stata 17. The individual recode data and the household member recode were chosen from the survey. The two datasets were merged to form a single dataset.

3.11 Ethics statement

The study was a secondary analysis performed with the use of the 2016 SADHS, and thus no approval from an ethics review board was necessary. The identity and information of the respondent were kept strictly confidential. An ethics waiver was requested and granted by the Faculty of Humanities at the University of the Witwatersrand, and an ethics number of WDEMG2023/07/05 was issued.

CHAPTER FOUR

RESULTS

4.1 Introduction

The study comprised three sub-objectives. The first sub-objective aimed to determine the prevalence of contraceptive use. The second aimed to examine the relationship between demographic and socioeconomic characteristics and contraceptive use. Lastly, the third sub-objective aimed to examine the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa. This section presents the quantitative results addressing the objectives of the study.

4.2 Sample distribution

Table 4.1 shows the background characteristics of women in this study. In terms of age, the age group 25 – 34 constituted the majority of women with 37.15% (N= 2 483); closely followed by age group 35 – 49 at 36.45% (N=2 436), and age group 15-24 had the least number of women with a percentage of 26.40% (N=1 764).In terms of racial demographics, Black women constituted the majority at 88.35% (N=5 905), while women from other racial groups comprised 11.65% (N=779). Unmarried women represented the largest portion at 55.75% (N=3 726), followed by married women at 37.93% (N=2 535). Separated and widowed women accounted for the smallest proportions at 3.80% (N=254) and 2.52% (N=168) respectively. Regarding provincial distribution, Gauteng, KwaZulu Natal, and Eastern Cape housed the most significant numbers of women at 27.30% (N=1 825), 17.78% (N=1 188), and 11.46% (N=766) respectively. Conversely, North West, Free State, and Northern Cape had the fewest women at 7.24% (N=484), 5.17% (N=345), and 2.09% (N=140) respectively. Regarding urban-rural distribution, urban areas saw a higher concentration of women at 66.71% (N=4 459), while rural areas had a lower proportion at 37.74% (N=2 225). In terms of employment status, a larger percentage of women, at 62.27% (N=4 161), were not employed compared to the 37.74% (N=2 522) who were employed. As for wealth status, the majority of women were classified as poor, comprising 40.70% (N=2 720), followed by those considered rich at 37.40% (N=2 500), with middle-income women making up 21.90% (N=1 464). In terms of education, the predominant level attained by women was secondary education, accounting for 76.70% (N=5

126), followed by higher and primary education at 12.26% (N=820) and 9.01% (N=602), respectively, with the smallest proportion having no education at 2.03% (N=136). Regarding exposure to family planning messages, a majority of women, constituting 54.70% (N=3 656), reported having heard an FP message, while 45.30% (N=3 028) had not. Finally, concerning contraceptive knowledge, the majority of women, at 99.91% (N=6 678), were aware of modern contraceptive methods, whereas only a small percentage, 0.09% (N=6), had no knowledge of any contraceptive method.

Table 4.1: Frequency and percentage distribution of demographic and socioeconomic characteristics among women aged 15–49 years old in South Africa, (SADHS, 2016)

Independent Variables	Frequencies (N)	Percentages (%)
Demographic characteristics		
Total	6683	100
Age		
15-24	1764	26.40
25-34	2483	37.15
35-49	2436	36.45
Race		
Black	5905	88.35
Other races	779	11.65
Marital status		
Never married	3726	55.75
Married	2535	37.93
Widowed	168	2.52
Separated	254	3.80
Province		
Western Cape	725	10.85
Eastern Cape	766	11.46
Northern Cape	140	2.09
Free State	345	5.17
KwaZulu Natal	1188	17.78
North West	484	7.24
Gauteng	1825	27.30
Mpumalanga	552	8.26
Limpopo	658	9.85
Residence		
Urban	4459	66.71
Rural	2225	33.29
Socioeconomic characteristics		
Employment status		
No	4161	62.27
Yes	2522	37.74
Wealth status		
Poor	2720	40.70

Middle	1464	21.90
Rich	2500	37.40
Education		
No education	136	2.03
Primary	602	9.01
Secondary	5126	76.70
Higher	820	12.26
FP Messages		
No	3028	45.30
Yes	3656	54.70
Contraceptive knowledge		
Knows no method	6	0.09
Knows modern method	6678	99.91

4.3 Sample characteristics and contraceptive prevalence, (SADHS 2016)

The results depicted in Figure 4.1 illustrates the prevalence of contraceptive usage among women aged 15–49 years old in South Africa. According to the figure, 55.39% (N= 3 702) of women were using contraceptives, whereas 44.61% (N= 2 981) of women were not using contraceptive methods.

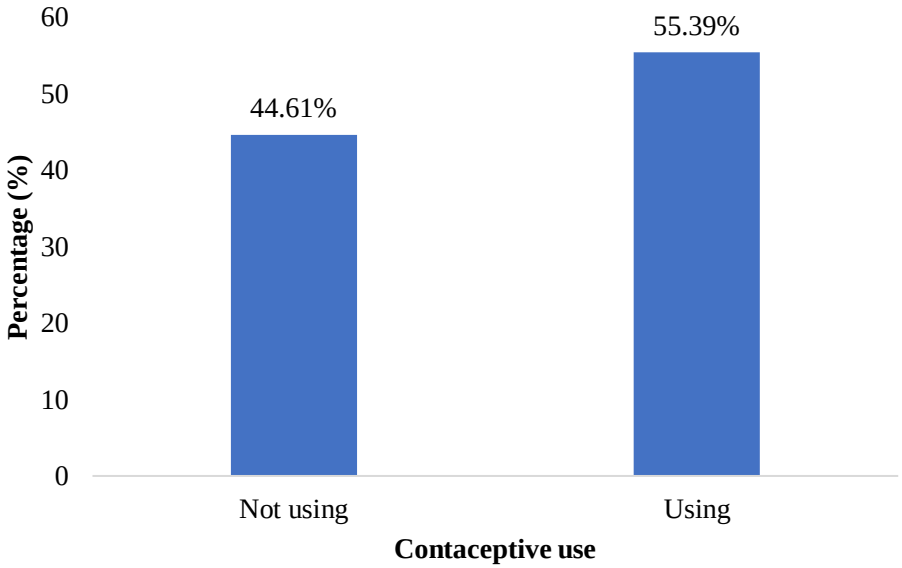

Figure 4.1: Percentage distribution of contraceptive use among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683

Figure 4.2 displays the percentage distribution of the contraceptive methods used by women in the age group of 15 to 49 years in South Africa. According to the figure, it is shown that 55.04%

(N= 3 678) of women utilised modern contraceptive methods, while 44.61% (N= 2 981) did not use any method. Additionally, 0.35% (N= 24) relied on traditional methods of contraception.

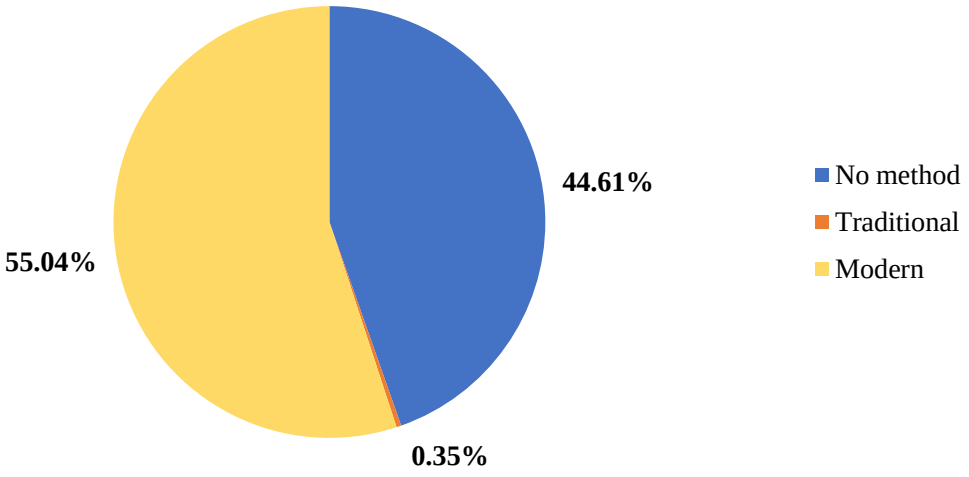

Figure 4.2: Percentage distribution of type of contraceptive among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683

Figure 4.3 depicts the percentage distribution of sensory disability status among women aged 15–49 years old in South Africa. As per the figure, 89.33% (N= 5 970) of women in South Africa were without sensory disabilities.

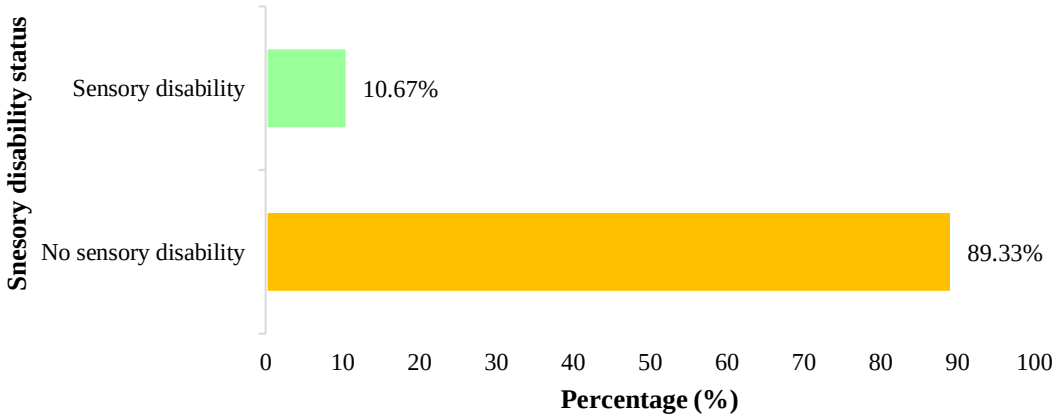

Figure 4.3: Percentage distribution of sensory disability status among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683

Figure 4.4 shows the percentage distribution of contraceptive use by sensory disability status among women aged 15–49 years old in South Africa. 56.32% (N= 3 362) of women without sensory disabilities use contraceptives, while 47.60% (N= 340) of women with sensory disabilities use contraceptives. Significantly, the observed differences in contraceptive usage between these two groups were supported by a p-value of 0.000, indicating statistical significance.

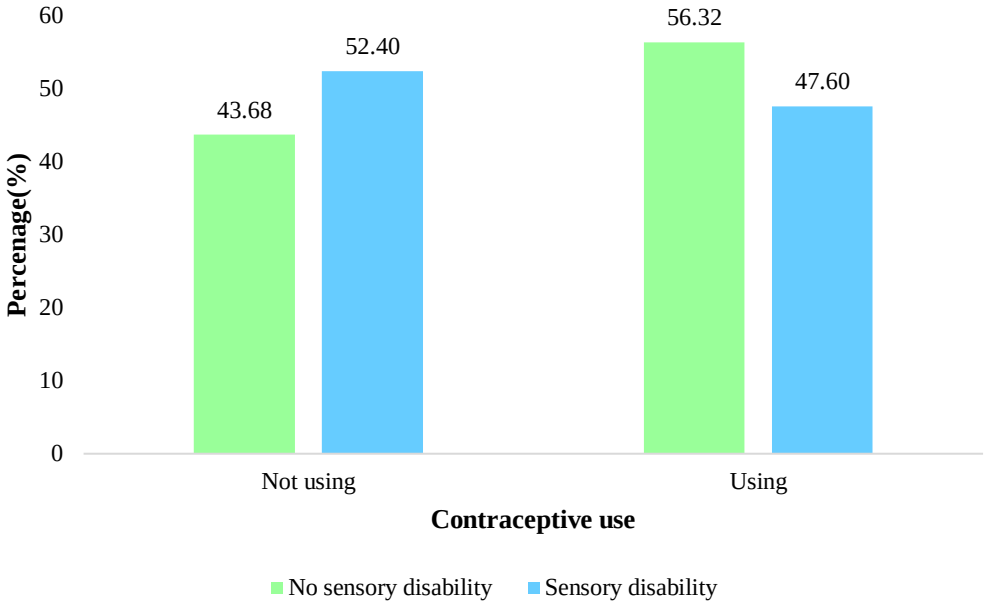

Figure 4.4: Percentage distribution of contraceptive use by sensory disability status among women aged 15–49 years old in South Africa, (SADHS 2016) N= 6 683

Table 4.2 displays the outcomes of cross-tabulations and chi-square analysis conducted to demonstrate the levels of contraceptive use among women in the sample, as well as by all characteristics of women. The results of the Pearson chi-square test show a significant association between contraceptive use and all independent variables, except for place of residence, employment status, wealth status, and family planning messages. This lack of significance was indicated by p-values greater than 0.05. Contraceptive use exhibited notable variations across distinct age groups (p= 0.000). Specifically, 63.05% (N= 1 566) of women in the 25–34 age group used contraceptives, closely trailed by 62.29% (N= 1 099) of women aged 15–24 years old. Conversely, women aged 35–49 years old demonstrated the lowest percentage of contraceptive usage at 42.59% (N= 1 037). Race-wise, 56.44% (N= 3 333) of women identifying as black used contraceptives, a higher proportion compared to other racial groups

at 47.40% (N= 369). This difference was shown to be statistically significant (p= 0.000). Marital status emerged as a noteworthy factor (p= 0.035) influencing contraceptive use. Among the different marital statuses, both never-married (N= 2 987) and married (N=599) women exhibited comparable contraceptive usage rates, standing at 55.71% and 56.15%, respectively. Separated women had a slightly lower rate at 50.24% (N= 85), while widowed women had the lowest rate at 36.07% (N=31). Regarding education, 59.28% (N= 486) of women with higher education used contraceptives, which was the highest group, followed by 56.31% (N= 2 886) of those with secondary education, and 47.00% (N= 285) with primary education. Women with no formal education had the lowest contraceptive use at 32.98% (N= 45), a difference confirmed by a p-value of 0.000. Notably, women who lacked knowledge about any contraceptive methods did not use contraceptives, while 55.44% (N= 3 702) of those informed about modern contraceptives were contraceptive users, a relationship confirmed by a p-value of 0.001.

Table 4.2: Frequency and percentage distribution of contraceptive use by demographic and socioeconomic characteristics among women aged 15–49 years old in South Africa, (SADHS, 2016)

Independent variables	**Number and percentage (N and %)**	**Contraceptive use**		**Total**
		Not using	**Using**	
Demographic characteristics				
Total	**N** **%**	**2 981** **44.61**	**3 702** **55.39**	**6 683** **100.00**
Age				
15–24	N %	665 **37.71**	1 099 **62.29**	1 764 **100.00**
25–34	N %	918 **36.95**	1 566 **63.05**	2 483 **100.00**
35–49	N %	1 398 **57.41**	1 037 **42.59**	2 436 **100.00**
				chi2(2) = 256.0228 p value= 0.000
Race				
Black	N %	2 572 **43.56**	3 333 **56.44**	5 905 **100.00**
Other races	N %	410 **52.60**	369 **47.40**	779 **100.00**
				chi2(1) = 22.9291 p value= 0.000
Marital status				

Never married	N %	2 375 **44.29**	2 987 **55.71**	5 362 **100.00**
Married	N %	468 **43.85**	599 **56.15**	1 068 **100.00**
Widowed	N %	54 **63.93**	31 **36.07**	85 **100.00**
Separated	N %	84 **49.76**	85 **50.24**	169 **100.00**
				chi2(3) = 15.1765 p value= 0.035
Residence				
Urban	N %	2 003 **44.91**	2 456 **55.09**	4 459 **100.00**
Rural	N %	979 **44.00**	1 246 **56.00**	2 225 **100.00**
				chi2(1) = 0.5036 p value= 0.617
Socioeconomic characteristics				
Employment status				
No	N %	1 816 **43.65**	2 345 **56.35**	4 161 **100.00**
Yes	N %	1 165 **46.20**	1 357 **53.80**	2 522 **100.00**
				chi2(1) = 4.1518 p value= 0.109
Wealth status				
Poor	N %	1 185 **43.57**	1 535 **56.43**	2 720 **100.00**
Middle	N %	624 **42.62**	840 **57.38**	1 464 **100.00**
Rich	N %	1 172 **46.90**	1 327 **53.10**	2 500 **100.00**
				chi(2) =8.9022 p value = 0.106
Education				
No education	N %	91 **67.02**	45 **32.98**	136 **100.00**
Primary	N %	317 **53.00**	285 **47.00**	602 **100.00**
Secondary	N %	2 240 **43.69**	2 886 **56.31**	5 126 **100.00**
Higher	N %	334 **40.72**	486 **59.28**	820 **100.00**
				chi2(3) = 50.4123 p value= 0.000
FP Messages				
No	N %	1 388 **45.84**	1 640 **54.16**	3 028 **100.00**
Yes	N %	1 594 **43.59**	2 062 **56.41**	3 656 **100.00**

				chi2(1) = 3.4072 p value= 0.189
Contraceptive knowledge				
Knows no method	N %	6 **100.00**	0 **0.00**	6 **100.00**
Knows modern method	N %	2 976 **44.56**	3 702 **55.44**	6 678 **100.00**
				chi2(1) = 7.1950 p value= 0.001

Figure 4.5 depicts the percentage distribution of contraceptive use across different provinces. According to the figure, Mpumalanga (59.29%) and the Eastern Cape (58.69%) had the highest contraceptive usage among provinces, followed by KwaZulu Natal (57.30%), North West (57.13%), Western Cape (55.44%), and Gauteng (55.03%). The Northern Cape exhibited a slightly lower rate at 53.30%. Conversely, Limpopo and the Free State showed the lowest contraceptive usage rates at 48.77% and 48.05%, respectively. Importantly, it is worth noting that the differences among provinces lacked statistical significance, as indicated by a p-value of 0.049.

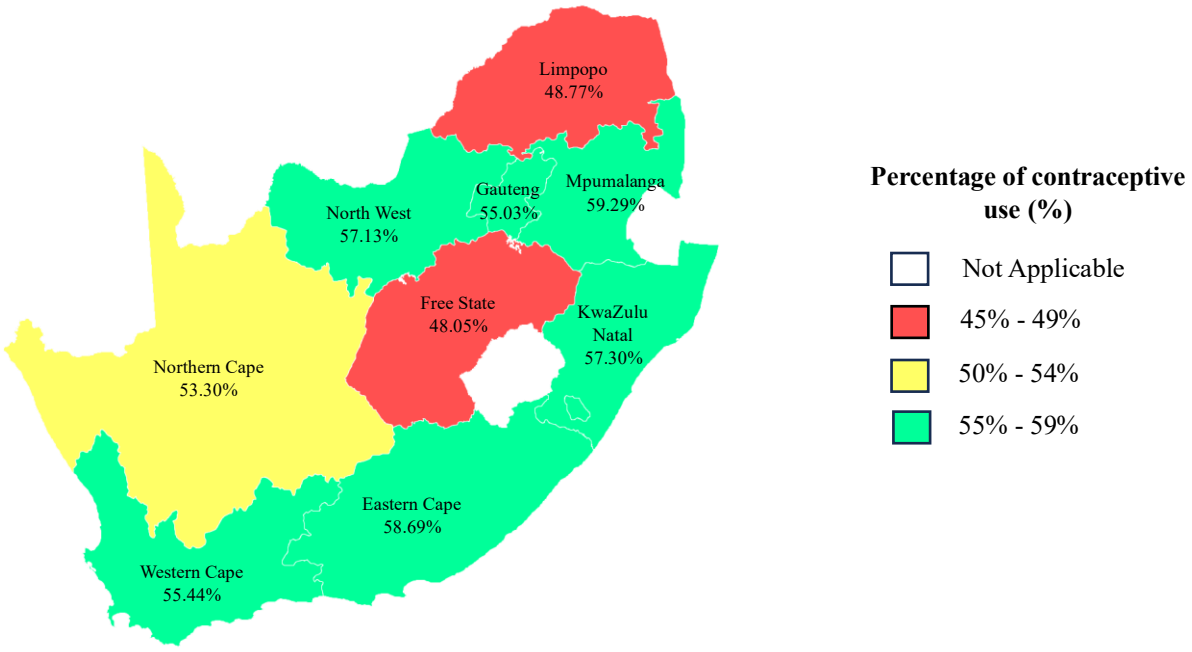

Figure 4.5: Percentage distribution of contraceptive use by province among women aged 15–49 years old in South Africa, (SADHS 2016) N=6 683

4.3 Relationship between demographic and socioeconomic characteristics and contraceptive use, (SADHS 2016)

Table 4.3 displays the unadjusted odds ratios of contraceptive use for each demographic and socioeconomic variable individually. Contraceptive knowledge was not considered in the unadjusted regression analysis due to the limited number of cases in the reference category, which was "knows no method" (N= 10). The findings from Table 4.2 reveal that all the independent predictors have a significant impact on contraceptive use except for place of residence, employment status, wealth status, and family planning messages.

Women with sensory disabilities were significantly less likely to use contraceptives compared to those without sensory disabilities (OR: 0.70, p= 0.000, CI: 0.58956 - 0.84191). Similarly, women in the age group of 35–49 years old were significantly less likely to use contraceptives in comparison to women aged 15–24 years old (OR: 0.45, p=0.001, CI: 0.38334 - 0.52620). Regarding race, women belonging to other racial categories were significantly less likely to use contraceptives than those identifying as black (OR: 0.70, p=0.001, CI: 0.57685 - 0.83798). Marital status played a significant role, as evidenced by the lower likelihood of contraceptive use among widowed women (OR: 0.44, p=0.000, CI: 0.29798 - 0.65270) and separated women (OR: 0.63, p= 0.008, CI: 0.45337 - 0.88701) in comparison to women who had never been married. In terms of provinces, women residing in the Eastern Cape (OR: 1.49, p=0.001, CI: 1.16662 - 1.90791), KwaZulu Natal (OR: 1.41, p= 0.004, CI: 1.11450 - 1.78284), and Mpumalanga (OR: 1.53, p= 0.001, CI: 1.19602 - 1.95647) were significantly more likely to use contraceptives compared to those in Limpopo. Education also played a significant role, with women with primary (OR: 1.83, p= 0.018, CI: 1.10835 - 3.01569), secondary (OR: 2.62, p= 0.001, CI: 1.67608 - 4.09197), or higher education (OR: 2.96, p= 0.001, CI: 1.84977 - 4.73129) being more likely to use contraceptives compared to those without formal education.

Table 4.3: Unadjusted odds ratios for the binary logistic regression of the association between the background characteristics and contraceptive use, (SADHS, 2016)

Independent variables	Odds Ratio (OR)	P value	95% Confidence Interval (CI)
Sensory disability status			
No sensory disability (RC) Sensory disability	0.70**	0.000	0.58956 - 0.84192

Age			
15–24 (RC)			
25–34	1.03	0.676	0.88646 - 1.20410
35–49	0.45**	0.000	0.38334 - 0.52620
Race			
Blacks (RC)			
Other races	0.70**	0.000	0.57685 - 0.83798
Marital status			
Never Married (RC)			
Married	0.95	0.418	0.82835 - 1.08150
Widowed	0.44**	0.000	0.29798 - 0.65270
Separated	0.63**	0.008	0.45337 - 0.88701
Province			
Limpopo (RC)			
Western cape	1.31	0.069	0.97932 - 1.74369
Eastern cape	1.49**	0.001	1.16662 - 1.90791
Northern cape	1.20	0.186	0.91612 - 1.56836
Free state	0.97	0.840	0.73366 - 1.28650
KwaZulu-Natal	1.41**	0.004	1.11450 - 1.78284
North West	1.40	0.064	0.98074 - 1.99777
Gauteng	1.29	0.071	0.97828 - 1.68897
Mpumalanga	1.53**	0.001	1.19602 - 1.95647
Residence			
Urban (RC)			
Rural	1.04	0.617	0.89741 - 1.19984
Socioeconomic characteristics			
Employment status			
No (RC)			
Yes	0.90	0.109	0.79523 - 1.02335
Wealth status			
Poor (RC)			
Middle	1.04	0.650	0.87844 - 1.23055
Rich	0.87	0.091	0.74790 - 1.02182
Education			
No education (RC)			
Primary	1.83**	0.018	1.10835 - 3.01569
Secondary	2.62**	0.000	1.67608 - 4.09197
Higher	2.96**	0.000	1.84977 - 4.73129
FP messages			
No (RC)			
Yes	1.10	0.189	0.95620 - 1.25445

RC = Reference Category, **p < 0.05 represents significant results at a 95% level of confidence

4.4 Relationship between sensory disability status and contraceptive use, (SADHS 2016)

In the first model, which focused solely on sensory disability status, women with sensory disabilities were significantly less likely to use contraceptives when compared to those without sensory disabilities [OR: 0.70, CI:0.58956 - 0.84192].

The second model considered both sensory disability status and demographic factors. Similar to the first model, women with sensory disabilities were notably less likely to use contraceptives compared to those without sensory disabilities [OR: 0.81, CI: 0.67981 - 0.97212]. Additionally, women aged 35–49 years old were significantly less inclined to use contraceptives than those aged 15–24 years old [OR: 0.45, CI: 0.37897 - 0.53796]. Women from racial backgrounds other than black were also less likely to use contraceptives compared to black women [OR: 0.74, CI: 0.61619 - 0.89772]. Conversely, married women were significantly more likely to use contraceptives than women who were never married [OR: 1.19, CI: 1.02608 - 1.37857]. With the inclusion of demographic factors, this model accounted for nearly 3% of the variability in contraceptive use.

In the third model, which accounted for sensory disability status, demographic, and socioeconomic factors, the analysis found that employment status, wealth status, and family planning messages were not statistically significant. Women with sensory disabilities were still less likely to use contraceptives compared to those without sensory disabilities [OR: 0.81, CI:0.67850 - 0.97153]. Like the second model, women aged 35–49 years old were significantly less likely to use contraceptives compared to those aged 15–24 years old [OR: 0.46, CI: 0.38022 - 0.55037]. Women from races other than black were also less likely to use contraceptives compared to black women [OR: 0.75, CI: 0.61098 - 0.92237]. On the other hand, married women were significantly more likely to use contraceptives than women who were not married [OR: 1.20, CI: 1.03088 - 1.38752]. Additionally, women with secondary [OR: 1.91, CI: 1.23372 - 2.95985] or higher education [OR: 2.28, CI: 1.42398 - 3.66595] were significantly more likely to use contraceptives than those without formal education. The independent variables in the model explain only about 3% of the variability in the outcome variable.

In the fourth model, which considered sensory disability status alongside demographic, socioeconomic, and geographical factors, the analysis showed that employment status, wealth status, family planning messages, and place of residence were not statistically significant. Women with sensory disabilities were still less likely to use contraceptives compared to those without sensory disabilities [OR: 0.78, CI: 0.63873 - 0.95227]. Similar to the third model, women aged 35–39 years old were significantly less likely to use contraceptives compared to those aged 15–24 years old [OR: 0.46, CI: 0.38150 - 0.55364]. Women from races other than black were also less likely to use contraceptives compared to black women [OR: 0.75, CI: 0.61098 - 0.92237]. On the other hand, married women were significantly more likely to use contraceptives than women who were never married [OR: 1.23, CI: 1.05328 - 1.42899]. Additionally, women with secondary [OR: 1.98, CI: 1.28089 - 3.07512] or higher education [OR: 2.40, CI: 1.49931 - 3.83750] were significantly more likely to use contraceptives than those without formal education. Women residing in Western Cape [OR: 1.83, CI: 1.29743 - 2.57637], Eastern Cape [OR: 1.66, CI: 1.27747 - 2.15886], Northern Cape [OR: 1.61, CI: 1.18574 - 2.19087], KwaZulu Natal [OR: 1.51, CI: 1.17797 - 1.92456], North West [OR: 1.43, CI: 1.01266 - 2.01228], and Mpumalanga [OR: 1.50, CI: .15808 - 1.93439] were more likely to use contraceptives than women residing in Limpopo. The independent variables in the model explain only about 4% of the variability in the outcome variable.

Table 4.4: Adjusted odds ratios for the stepwise multivariate binary logistic regression of the association between all the independent variables with contraceptive use, (SADHS, 2016)

Independent variable	Model 1	Model 2	Model 3	Model 4
Sensory disability status				
Sensory disability status				
No (RC)				
Yes	0.70** [0.58956 - 0.84192]	0.81** [0.67981 - 0.97212]	0.81** [0.67850 - 0.97153]	0.80** [0.67017 - 0.95885]
Demographic characteristics				
Age				
15–24 (RC)				
25–34		1.01 [0.85593 - 1.18255]	0.98 [0.83478 - 1.15949]	0.99 [0.83714 - 1.16182]
35–49		0.45** [0.37897 - 0.53796]	0.46** [0.38022 - 0.55037]	0.46** [0.38150 - 0.55364]
Race				
Blacks (RC)				
Other races		0.74**[0.61619 - 0.89772]	0.75** [0.61098 - 0.92237]	0.62** [0.48673 - 0.78987]
Marital Status				
Never married (RC)				
Married		1.19** [1.02608 - 1.37857]	1.20** [1.03088 - 1.38752]	1.23** [1.05328 - 1.42899]
Widowed		0.70 [0.47288 - 1.04529]	0.75 [0.49689 - 1.12885]	0.78 [0.52073 - 1.17336]
Separated		0.85 [0.59497 - 1.20937]	0.84 [0.58281 - 1.20431]	0.88 [0.60847 - 1.26163]
Socioeconomic characteristics				
Employment status				
No (RC)				
Yes			1.07 [0.92615 - 1.24184]	1.06 [0.92015 - 1.22888]
Wealth Status				
Poor (RC)				
Middle			0.99 [0.82997 - 1.17196]	0.99 [0.82472 - 1.17693]
Rich			0.87 [0.71775 - 1.05124]	0.86 [0.69530 - 1.06547]
Education				
No education (RC)				
Primary			1.57 [0.95822 - 2.58285]	1.58 [0.96294 - 2.59852]
Secondary			1.91** [1.23372 - 2.95985]	1.98** [1.28089 - 3.07512]
Higher			2.28** [1.42398 - 3.66595]	2.40** [1.49931 - 3.83750]
FP Messages				
No (RC)				
Yes			1.09 [0.94257 - 1.26615]	1.10 [0.95150 - 1.28083]

Geographical factors				
Province				
Limpopo (RC)				
Western Cape				1.83** [1.29743 - 2.57637]
Eastern Cape				1.66** [1.27747 - 2.15886]
Northern Cape				1.61** [1.18574 - 2.19087]
Free State				1.03 [0.75634 - 1.39235]
KwaZulu Natal				1.51** [1.17797 - 1.92456]
North West				1.43** [1.01266 - 2.01228]
Gauteng				1.30 [0.95813 - 1.76554]
Mpumalanga				1.50** [1.15808 - 1.93439]
Place of residence				
Urban (RC)				
Rural				1.00 [0.83745 - 1.18454]

Model 1 controlled for only sensory disability status

Model 2 controlled for model 1 and demographic characteristics

Model 3 controlled for model 2 and socioeconomic characteristics

Model 4 controlled for model 3 and geographical factors

4.5 Testing of Hypothesis

The study tested the hypothesis using the full model for multilevel analysis:

H_0: There is no relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa.

H_A: There is a relationship between sensory disability status (hearing and vision impairments) and contraceptive use among women aged 15–49 years old in South Africa.

With a significance level set at $\alpha = 0.05$, the p-value obtained was below 0.05. Consequently, the study rejected the null hypothesis and concluded that there is indeed a relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

The aim of this study was to explore sensory disability status and contraceptive use among women aged 15–49 years old in South Africa. This study is crucial for reevaluating existing programmes and customising policies to address the specific needs of women with sensory disabilities. This chapter discusses the findings of the study with reference to existing literature, the theoretical and conceptual framework, and how the objectives of the study were successfully addressed by these findings.

5.2 Sensory disability status and contraceptive use in South Africa

The study's results found that women with sensory disabilities are less likely to use contraceptives compared to women without sensory disabilities. This outcome aligns with research conducted in Ethiopia, which similarly reported a low contraceptive utilisation rate of 31.1% among women with sensory disabilities (Yimer & Modiba, 2019). This means that despite the differences in socioeconomic and cultural contexts, the penalty associated with disability exists to WWDs in SSA. There are several possible reasons for the low use among women with sensory disabilities, including communication barriers, limited access to information, the absence of sign language interpreters in health facilities, and non-tailored media-based information dissemination, as identified by previous studies (Rugoho & Maphosa, 2017; Tejeji & Assefa, 2017; Yimer & Modiba, 2019). This implies that there is a pressing need for targeted interventions and systemic changes to address the disparities in contraceptive use among women with sensory disabilities. The findings highlight the importance of creating inclusive healthcare environments and fostering awareness and education campaigns tailored to women with sensory impairments. This includes providing information in multiple formats, such as Braille, sign language, or accessible digital content, and ensuring that facilities are physically accessible. Additionally, it underscores the significance of revising current policies to cater to the unique needs of this marginalised and currently underserved population. The existing National Contraception Policy in South Africa addresses the needs of individuals with disabilities in Section 6 (Department of Health, 2012). While it encompasses provisions for

people with physical and intellectual disabilities, there is a specific need for additional provisions to be made to cater specifically to individuals with sensory disabilities. Furthermore, the research stresses the significance of advocating for the rights of people living with disabilities and building support networks to empower women with sensory disabilities to make informed decisions regarding their reproductive health. The implications call for a comprehensive and collaborative approach involving healthcare professionals, policymakers, advocacy groups, and the broader community to ensure equitable access to reproductive health services for all women, irrespective of their sensory abilities.

5.3 Prevalence of contraceptive use

The research findings suggests that 55% of women in South Africa are utilising contraceptives, aligning with the results of a study conducted by Chersich et al. This earlier study, which drew upon data from the fourth SA National HIV Prevalence, Incidence, and Behaviour Survey, indicated a contraceptive usage rate of 49% (Chersich et al., 2017). In comparison to neighbouring countries in the southern region, such as Botswana (50.5%), Eswatini (53.4%), Lesotho (51.5%), and Namibia (52.3%), the contraceptive prevalence in South Africa was slightly higher in this study (United Nations, 2020b). However, despite this, contraceptive utilisation remains at a low level. The low prevalence of contraceptive use in South Africa can be linked to challenges within the healthcare system, including extended waiting periods, constrained operating hours, and a scarcity of adequately trained healthcare personnel (Kriel et al., 2023). Furthermore, socio-demographic factors like residence in rural areas, lower levels of education, disadvantaged socioeconomic status, and limited awareness and accessibility to contraceptives contribute to this trend (Makola et al., 2019). The low prevalence of contraceptive use in South Africa carries significant implications across various dimensions. It increases the risk of unintended pregnancies, which can lead to inadequate prenatal care, maternal and infant mortality, and strain on healthcare systems. Additionally, unintended pregnancies can perpetuate cycles of elevated fertility rates, diminish educational and employment prospects, and exacerbate poverty — issues that can persist across multiple generations (World Health Organization, 2019). Moreover, limited access to contraception heightens health risks, including susceptibility to sexually transmitted infections and maternal health complications. Educational and economic opportunities for women are curtailed, perpetuating cycles of poverty and gender inequality. The intergenerational effects of unplanned pregnancies further compound socioeconomic disadvantages for future generations.

5.4 Demographic and socioeconomic factors associated with contraceptive use in South Africa

Regarding age, the chi-square test and logistic regression results confirmed that age has an influence on contraceptive use in South Africa, even after adjusting for the influence of other covariates. Specifically, this study observed a significant disparity for women aged 35–49 years old, indicating that they were less inclined to use contraceptives compared to their counterparts aged 15–24 years old. This is consistent with prior studies in other African countries, which have shown that contraceptive use is less common among older women (Asresie et al., 2020; Mohammed et al., 2014; Terefe et al., 2023; Zegeye et al., 2021). However, studies focusing on women with disabilities in Ethiopia yielded contrasting results, showing that the age group 25 to 34 years was associated with higher contraceptive usage (Tenaw et al., 2023a). Additionally, another study highlighted that women with disabilities aged between 26 and 45 were significantly more likely to utilise modern contraceptives compared to those aged 15-25 (Beyene et al., 2023b). Research in Ghana identified multiple factors influencing low contraceptive use among women aged 35–49 years old, such as achieving desired family size, misconceptions, declining fertility, and male partner influence (Takyi et al., 2023). The implications of limited contraceptive use in women aged 35–49 years old include heightened exposure to health risks, particularly an increased likelihood of unintended pregnancies. Additionally, pregnancy at advanced maternal age is considered a risk factor for adverse maternal and perinatal outcomes (Glick et al., 2021). Possible maternal complications of pregnancy at age 35 or older include increased risk of preterm labour, spontaneous miscarriage, stillbirth, pre-eclampsia, chromosomal abnormalities, gestational diabetes mellitus, and caesarean delivery (Glick et al., 2021). In contrast to the current study, other studies conducted in South Africa and Nigeria found that older women were utilising contraception at a higher rate compared to younger women (Chersich et al., 2017b; Ononokpono et al., 2020). However, other studies conducted in various global regions outside of South Africa have reported that there is not a significant association between age and the use of contraceptives (Bhandari et al., 2019; Tibaijuka et al., 2017; Wuni et al., 2018).

The study found that educated women were more likely to use contraceptives than women with no education. However, only secondary and higher education were significant in the adjusted model. This finding is consistent with prior studies in other developing countries, such as Indonesia, Nigeria, and Ethiopia, which reported that contraceptive use was higher for women

with secondary or higher education (Apanga et al., 2020; Gafar et al., 2020; Kraft et al., 2022; Ononokpono et al., 2020; Tiruneh et al., 2016). The trend observed in the study may be explained by the proactive involvement by South African schools in delivering sexuality education through the Life Orientation curriculum received in secondary schooling (Ngabaza & Shefer, 2019). Women with advanced educational levels are in a more advantageous position to access and comprehend healthcare information, possess increased decision-making autonomy, and demonstrate a greater ability to utilise high-quality healthcare services, resulting in higher contraceptive usage (Alemayehu et al., 2018; Hlongwa et al., 2021; Pazol et al., 2015; Woldeamanuel et al., 2023). Moreover, the length of time needed to pursue higher education might encourage sexually active young women to use contraception as they want to wait to become pregnant until after they finish school or possibly find a job (Nyarko, 2020). Consequently, low contraceptive use among uneducated women could lead to various outcomes, such as a higher occurrence of unintended pregnancies and increased maternal health risks as a result of high fertility and short birth spacing. In addressing these implications, it becomes crucial to implement targeted interventions that focus on improving access to education, encouraging girls to stay in school, launching out-of-school campaigns promoting awareness about reproductive health, and ensuring equitable access to family planning services for uneducated women. Efforts should be made to empower women, reduce socioeconomic disparities, and promote comprehensive reproductive health education. Education continues to be a key component in raising women's family planning knowledge (Gafar et al., 2020). These findings suggest that empowering women through education is important for improving contraceptive use. Supporting women's education is essential to enhance maternal health outcomes and to be in accordance with global development goals.

Other significant predictors of contraceptive use, as evident in this study, are marital status and race. In terms of marital status, the research revealed that married women were more inclined to use contraceptives compared to those who had never been married. These findings are consistent with results from studies conducted in Zambia and Ghana, where women who were married or cohabiting with a partner exhibited the highest proportion of contraceptive usage (Chola et al., 2020; Nyarko, 2020). However, this finding contradicts a broader study encompassing 21 countries in SSA, Latin America, and the Caribbean, which suggested that overall contraceptive prevalence tends to be higher among never-married women than currently married women in SSA (Wang et al., 2017). The differences in contraceptive use between

married and unmarried individuals may stem from distinct perceptions of pregnancy and family planning (World Health Organization & Centre for Communication Programs, 2022). The higher prevalence of contraceptive use among married women can be attributed to several factors. Firstly, couples in marriage often share family planning goals and make joint decisions regarding the desired number and timing of children. This collaborative approach leads to more deliberate and consistent utilisation of contraceptives to achieve their shared reproductive intentions. Moreover, the older age of married women, coupled with the likelihood of having completed their desired family size, may contribute to their increased use of contraception for either limiting or spacing their children. Additionally, cultural and social norms within the context of marriage may influence contraceptive decisions. In certain societies, marriage is associated with an expectation of family planning, and this norm may contribute to the higher prevalence of contraceptive use among married women. For instance, in a study in Senegal, married women were much more likely to use FP methods than unmarried women, as unmarried sex is uncommon in Senegal (Cronin et al., 2018). Another research study concluded that marital status does not play a significant role in influencing the use of contraceptives (Wuni et al., 2018).

With regards to race, the study revealed an interesting finding, women from other races had less use than women who identified as black. However, this finding may have been influenced by grouping whites, coloured, and Indians together, potentially skewing the results. This is contrary to other studies that have found that black women were less likely to use contraceptives than other races in the United States of America (Dehlendorf et al., 2014; Grady et al., 2015). Another study found that there is no statistical difference in contraceptive use among the different races (Mencken, 2023). Studies have persistently associated contraceptive use differentials with race affiliations (Obasohan, 2015; Thapa et al., 2018). Race is recognised as having a significant influence on various aspects of an individual's life. Different race groups often hold distinct traditional values and perspectives on fertility and related health practices (Nyaga, 2016). Consequently, these cultural values and belief systems play a role in shaping attitudes towards contraception. However, it is important to note that race alone does not independently predict the utilisation of contraception (Ayinmoro & Fayehun, 2022). Instead, other socio-economic factors, including residence, religion, income, and marital status, emerged as significant predictors of contraceptive use among minority race groups (Ayinmoro & Fayehun, 2022). Understanding the social norms around sexuality and reproduction across

different race groups is key to developing and implementing locally appropriate public health responses (Kane et al., 2016).

Household wealth status was not significantly associated with contraceptive use. The findings align with a study in Haiti (Wang & Mallick, 2019). However, a large body of literature has indicated that wealth status is essential in influencing contraceptive use (Ahinkorah, 2020; Apanga et al., 2020; Aviisah et al., 2018). Research indicates that women classified within the middle-income bracket or belonging to the wealthiest wealth quintile exhibit a higher likelihood of contraceptive use compared to those in the lower-income wealth quintile (Ahinkorah, 2020; Apanga et al., 2020; Aviisah et al., 2018). Similarly, studies focusing on women with disabilities indicate that those from the fourth and highest wealth quintiles have a greater likelihood of using modern contraceptive methods, while those from the second and lowest wealth quintiles have lower odds (Casebolt et al., 2022). The reduced adoption of birth control among low-income families may be attributed to varying social and cultural perspectives, coupled with the financial challenges posed by the high cost of contraceptives (Moreira et al., 2019; Sharma & Gupta, 2017; Singh et al., 2018). In the context of South Africa, the lack of significance in the findings regarding wealth status may be explained by the proactive initiatives undertaken by the South African government to enhance reproductive health. Specifically, the implementation of policies like the national contraception clinical guidelines ensures the accessibility of a diverse array of family planning methods free of charge at public health facilities (Department of Health, 2012). Approximately 83% of South African women in need of contraception obtain it through the public healthcare sector (Department of Health et al., 2019). This positive implication suggests that individuals, irrespective of their economic status, have equal access to and the ability to make informed choices regarding family planning and contraception. Furthermore, the equitable access to and utilisation of family planning methods by families from diverse economic backgrounds can contribute to a more sustainable approach to population growth in South Africa.

Another interesting finding in this study is the lack of significance associated with the place of residence in South Africa, diverging from findings in numerous studies conducted in developing countries (Ahinkorah, 2020; Odimegwu & Chemhaka, 2021; Zegeye et al., 2021). Previous research consistently demonstrated a significant difference, with lower contraceptive use among women in rural areas. This divergence in other studies could be attributed to factors

such as urban dwellers typically having greater access to a diverse range of contraceptive services and methods, higher education levels, and consequently, a higher likelihood of contraceptive use compared to their rural counterparts. However, South Africa stands out due to concerted efforts to enhance healthcare infrastructure in both urban and rural areas. The lack of significance for the place of residence in this study could be further explained by the implementation of national healthcare policies and programmes designed to address the needs of diverse populations across urban and rural settings. These policies may have contributed to reducing the urban-rural disparity in contraceptive use. Furthermore, the presence of community health worker programmes operating in both urban and rural areas may play a crucial role in disseminating information and providing family planning services. These programmes contribute to bridging the gap in access to reproductive health resources between different geographical settings. Moreover, shifts in societal norms regarding family planning may have occurred in South Africa, leading to a more consistent acceptance and utilisation of contraceptives across diverse settings. The evolving cultural perspectives and increasing awareness of family planning methods may have contributed to a more equitable distribution of contraceptive use, irrespective of residence. The absence of a residence-based factor in this study suggests a noteworthy reduction in health disparities related to reproductive health between urban and rural populations in South Africa. This could be indicative of the success of comprehensive healthcare strategies that prioritise accessibility, awareness, and inclusivity across diverse geographical locations.

5.5 Applicability of the findings to the theoretical and conceptual frameworks

The study was guided by the Andersen and Newman Behavioural Model for Health Service Utilisation (BMHSU). The model suggests that individual characteristics (i.e., predisposing factors, enabling factors, and need factors) combine to influence health behaviour (i.e., personal health practices and health service use) (Mbalinda et al., 2020). Based on the findings of this study, predisposing factors (sensory disability status, age, marital status, race, and province) have been found to influence contraceptive use among women of reproductive age in South Africa. This finding is in line with the proponents of Andersen and Newman's model. Additionally, the study supports the framework's assertion that enabling factors play a crucial role in healthcare utilisation, as education was found to significantly influence contraceptive use. Education plays a crucial role in contraceptive use. Educated women are more likely to have access to accurate and reliable information about contraception through formal education

channels, healthcare providers, and other sources. The findings of this study reveal a strong correlation between demographic, socioeconomic, and contraceptive use. This is consistent with Andersen and Newman's model, which posits that predisposing and enabling factors are critical factors in influencing healthcare utilisation.

The conceptual framework as adapted from the BMHSU significantly strengthens the credibility of this study while offering a robust foundation for interpreting its findings within a comprehensive theoretical framework. By aligning with a widely recognised and respected model in the field, the study ensured a rigorous approach to understanding contraceptive use. This alignment allowed for a systematic exploration of the interplay between predisposing, enabling, and need factors in shaping contraceptive use.

5.6 Strengths and limitations of the study

The study demonstrates a notable strength in its utilisation of a quantitative approach, enabling precise measurement and statistical analyses for a clear and objective examination of the relationship between sensory disability status and contraceptive use. Additionally, the study's strength lies in its utilisation of a large and diverse sample, enhancing the generalisability of the findings. Furthermore, robust statistical analyses were employed, showcasing methodological rigor that contributes to the reliability and validity of the results, thereby providing a strong foundation for interpreting the relationship between sensory disability status and contraceptive use. Lastly, the quantitative evidence generated by the study has direct implications for shaping public health policies and advocacy efforts, offering robust findings to guide targeted interventions for improving reproductive health services and accessibility for women with sensory disabilities in South Africa.

However, the study is not without its limitations. The first limitation of this study is the omission of need factors related to contraceptive use among women with sensory disabilities. Needs factors were excluded because the research objectives specifically targeted predisposing characteristics and enabling resources as the key determinants of contraceptive use among women with sensory disabilities. However, need factors, such as individual preferences, perceived contraceptive needs, and specific healthcare requirements, can significantly influence contraceptive decision-making and behaviour. The absence of these factors in the

analysis may limit the depth of understanding of the complexities surrounding contraceptive use in this population. Future research should consider incorporating need factors to provide a more comprehensive examination of contraceptive behaviour among women with sensory disabilities. Secondly, previous research has demonstrated that religious beliefs can affect decisions about the number of children a family should have, the use of contraceptives, and attitudes towards family planning services. However, the 2016 DHS did not collect data on religion. Without this information, it is challenging to capture the diversity of perspectives within the population. Despite the limitations, the DHS collects national-level data, which permits generalisation of the outcomes to the national picture. Therefore, the DHS provides information that is useful to inform policy direction in the area of family planning. Thirdly, the reliance on self-reported data for contraceptive use introduces the potential for social desirability bias, as participants may provide responses influenced by perceived social norms. This could lead to an underestimation or overestimation of certain behaviours. Thirdly, the cross-sectional design of the study limits the ability to establish causation. While associations between sensory disability status and contraceptive use can be identified, the findings do not allow for the inference of the direction of causality. Lastly, it is crucial to acknowledge that the study's findings are specific to the context of South Africa, urging caution when extrapolating the results to different cultural or geographical settings.

5.7 Conclusion

This study set out to determine the prevalence of contraceptive use by sensory disability status, examine the relationship between demographic and socioeconomic characteristics and contraceptive use, as well as examine the relationship between sensory disability status and contraceptive use among women aged 15–49 years old in South Africa using the SADHS. It employed chi square, unadjusted regression model and adjusted regression model. The study suggests that contraceptive use is low among women with sensory disabilities in South Africa. Low contraceptive use among women with sensory disabilities in South Africa highlights the need for inclusive reproductive health services, addressing communication, information access, and societal attitudes to ensure informed decisions. Low contraceptive use among women with sensory disabilities can be attributed to various factors, including communication barriers, limited access to information, and societal attitudes towards disability. These barriers not only hinder women with sensory disabilities from making informed decisions about their reproductive health but also perpetuate inequalities in access to essential healthcare services.

Preconceived perceptions about people living with disabilities may contribute to the low levels of contraceptive uptake among this population as healthcare professionals disassociate this marginalised group with sexual activity.

By focusing on contraceptive utilisation among women with sensory disabilities, this research not only fills a gap in existing literature but also offers valuable insights into the reproductive health needs of this demographic. The findings contribute to more inclusive and effective healthcare practices, aiming to better address the diverse needs of women with sensory disabilities in family planning services. Further research in this area can continue to refine our understanding and support the development of targeted interventions to improve reproductive health outcomes for this population.

The study effectively applied Andersen and Newman's Behavioural Model for Health Service Utilisation. The findings of the study underscore the significance of predisposing factors, such as sensory disability status, age, race, and marital status, as well as enabling factors like education, in shaping patterns of contraceptive use. The results highlight the importance of considering individual characteristics and available resources when examining health behaviours, especially in the context of reproductive health. This study contributes valuable insights to the field by demonstrating the applicability of Andersen and Newman's model to understanding contraceptive utilisation patterns in a specific demographic. Moving forward, further research and interventions should continue to explore the interplay between predisposing and enabling factors, acknowledging the diversity of experiences and needs within different demographic groups. This approach ensures a comprehensive understanding of health service utilisation, laying the foundation for targeted strategies that address the unique challenges and opportunities associated with contraceptive use in the context of sensory disabilities.

5.8 Recommendations

5.8.1 Further research

Future studies in the field of contraceptive use, particularly among women with sensory disabilities, could explore more in-depth analyses on how specific types of sensory disabilities

(e.g., visual impairment, hearing impairment) influence contraceptive decision-making and utilisation. Each sensory disability (e.g., visual impairment, hearing impairment) presents distinct challenges and barriers that may influence contraceptive use differently. By conducting in-depth analyses of different sensory disabilities, researchers can uncover the specific challenges faced by women with each type of disability. This understanding is crucial for developing targeted interventions that address the unique needs of each group effectively. Additionally, in-depth analyses of different sensory disabilities can help identify and address health disparities within and across disability groups. By examining variations in contraceptive use patterns and barriers among women with different sensory disabilities, researchers can identify groups that may be disproportionately affected by inequities in reproductive healthcare access and utilisation. This knowledge can inform targeted efforts to reduce disparities and promote health equity.

Additionally, it is crucial to conduct qualitative studies examining the lived experiences, perceptions, and barriers faced by women with sensory disabilities when using contraceptives. These studies provide valuable insights into the specific challenges and needs of this population, informing the development of targeted interventions and policies. By amplifying the voices of women with sensory disabilities, these qualitative studies would complement the quantitative findings of this study and provide a more comprehensive understanding of the complexities involved. Given that the study is limited in its ability to establish causality between contraceptive use and sensory disability status, future studies may need to explore this relationship using longitudinal data. This would address a key limitation of this study. By tracking contraceptive behaviours and reproductive health outcomes over time, researchers can assess the long-term effects of interventions and policies aimed at improving access to reproductive health services for women with sensory disabilities. This longitudinal perspective would provide valuable insights into the effectiveness and sustainability of interventions, contributing to evidence-based decision-making in healthcare policy and practice.

Moreover, to enhance the depth and breadth of research on contraceptive use among women with sensory disabilities, it is recommended to address the identified limitations by incorporating need factors and religion. By including need factors, researchers can gain a more comprehensive understanding of the challenges faced by this population. Exploring the intersectionality of religion with sensory disability status can provide insights into cultural

influences on contraceptive decision-making. Additionally, future studies should look into interactions between sensory disability status and control factors.

5.8.2 Policy significance

The findings of this study carry significant implications for shaping policies aimed at enhancing reproductive health outcomes for women with sensory disabilities. In light of the low contraceptive use identified among women with sensory disabilities, a number of policy recommendations emerge. First, there is a need to advocate for the inclusion of women with sensory disabilities in the targets of the Sustainable Development Goals (SDGs) pertaining to reproductive health and gender equality, such as SDG 3 (Ensure healthy lives and promote well-being for all at all ages) and SDG 5 (Achieve gender equality and empower all women and girls). Despite the SDGs' overarching aim of ensuring universal health for all and the UN General Assembly's 2019 commitment to "leave no one behind," women with disabilities were not specifically addressed within this goal (Hashemi et al., 2017). Therefore, it is imperative to push for their inclusion and focus within the SDGs' agenda on sexual and reproductive health and rights. This may entail the establishment of monitoring and reporting mechanisms to systematically track progress in addressing the reproductive health needs of women with sensory disabilities, thereby ensuring that they are not overlooked in global efforts to achieve gender equality and universal health coverage. Secondly, there is a need to revise and update the 2019 National Contraception and Fertility Planning Policy, which serves as a guiding document for family planning services, to cater to the specific needs of women with sensory disabilities. This revision should encompass explicit guidelines and provisions for accessible contraceptive services, considering the diverse needs and preferences of women with sensory impairments. Thirdly, there is a need to implement provisions within the National Health Act requiring healthcare professionals to undergo training on how to effectively serve women with sensory disabilities, including training on communication techniques, disability awareness, and accommodating diverse needs in contraceptive counselling and service provision.

Addressing the low use of contraceptives among women with sensory disabilities requires a multifaceted approach. Firstly, efforts should be made to enhance communication and information access for women with sensory disabilities through the provision of accessible

materials and communication technologies. This may involve the use of alternative communication methods such as braille, sign language interpreters, and audio-visual resources. Secondly, there is a need to challenge societal attitudes and perceptions towards disability to create a more inclusive and supportive environment for women with sensory disabilities. This may involve awareness-raising campaigns, training programmes for healthcare providers, and advocacy initiatives aimed at promoting disability rights and inclusion. Furthermore, it is essential to integrate disability-inclusive approaches into existing reproductive health programmes and policies. This includes ensuring that reproductive health services are accessible, culturally sensitive, and tailored to the diverse needs of women with sensory disabilities. Addressing the low contraceptive use among women with sensory disabilities in South Africa requires a concerted effort from policymakers, healthcare providers, civil society organisations, and other stakeholders.

REFERENCES

Abdullah, N., Low, K. E. Y., & Feng, Q. (2021). Sensory Disability. In D. Gu & M. E. Dupre (Eds.), *Encyclopedia of Gerontology and Population Aging* (pp. 4468–4473). Springer International Publishing. https://doi.org/10.1007/978-3-030-22009-9_480

Addlakha, R., Price, J., & Heidari, S. (2017). Disability and sexuality: Claiming sexual and reproductive rights. *Reproductive Health Matters*, *25*(50), 4–9. https://doi.org/10.1080/09688080.2017.1336375

Adedini, S. A., Odimegwu, C., Imasiku, E. N., & Ononokpono, D. N. (2015). Unmet Need for Family Planning: Implication for Under-five Mortality in Nigeria. *Journal of Health, Population, and Nutrition*, *33*(1), 187–206.

Agyekum, A. K., Adde, K. S., Aboagye, R. G., Salihu, T., Seidu, A.-A., & Ahinkorah, B. O. (2022). Unmet need for contraception and its associated factors among women in Papua New Guinea: Analysis from the demographic and health survey. *Reproductive Health*, *19*(1), 113. https://doi.org/10.1186/s12978-022-01417-7

Agyekum, M. W., Henry, E. G., Kushitor, M. K., Obeng-Dwamena, A. D., Agula, C., Opoku Asuming, P., Toprah, T., Agyei-Asabere, C., Shah, I., & Bawah, A. A. (2022). Partner support and women's contraceptive use: Insight from urban poor communities in Accra, Ghana. *BMC Women's Health*, *22*, 256. https://doi.org/10.1186/s12905-022-01799-7

Ahinkorah, B. O. (2020). Predictors of modern contraceptive use among adolescent girls and young women in sub-Saharan Africa: A mixed effects multilevel analysis of data from 29 demographic and health surveys. *Contraception and Reproductive Medicine*, *5*(1), 32. https://doi.org/10.1186/s40834-020-00138-1

Ahinkorah, B. O., Budu, E., Aboagye, R. G., Agbaglo, E., Arthur-Holmes, F., Adu, C., Archer, A. G., Aderoju, Y. B. G., & Seidu, A.-A. (2021). Factors associated with modern contraceptive use among women with no fertility intention in sub-Saharan Africa: Evidence from cross-sectional surveys of 29 countries. *Contraception and Reproductive Medicine*, *6*(1), 22. https://doi.org/10.1186/s40834-021-00165-6

Ahmed, Md. S., Khan, S., & Yunus, F. M. (2021). Factors associated with the utilization of reproductive health services among the Bangladeshi married women: Analysis of national representative MICS 2019 data. *Midwifery*, *103*, 103139. https://doi.org/10.1016/j.midw.2021.103139

Alemayehu, G. A., Fekadu, A., Yitayal, M., Kebede, Y., Abebe, S. M., Ayele, T. A., Gizaw, Z., Wubeshet, M., Muchie, K. F., Gelagay, A. A., Azmeraw, T., Birku, M., Alemu, K., Tariku, A., Derso, T., Tesfahun, A., Tebeje, N. B., Tigabu, Z., Gebeyehu, A., … Biks, G. A. (2018). Prevalence and determinants of contraceptive utilization among married women at Dabat Health and Demographic Surveillance System site, northwest Ethiopia. *BMC Women's Health*, *18*(1), 118. https://doi.org/10.1186/s12905-018-0611-3

Alhusen, J. L., Bloom, T., Laughon, K., Behan, L., & Hughes, R. B. (2021). Perceptions of barriers to effective family planning services among women with disabilities. *Disability and Health Journal*, *14*(3), 101055. https://doi.org/10.1016/j.dhjo.2020.101055

Alrawi, Y. (2021). Exploring barriers to family planning service utilization and uptake among women in Iraq. *Eastern Mediterranean Health Journal*, *27*(8), 818–825. https://doi.org/10.26719/emhj.21.015

Amoah, E. J., Hinneh, T., & Aklie, R. (2023). Determinants and prevalence of modern contraceptive use among sexually active female youth in the Berekum East Municipality, Ghana. *PLOS ONE*, *18*(6), e0286585. https://doi.org/10.1371/journal.pone.0286585

Andersen, R., & Newman, J. F. (2005). Societal and Individual Determinants of Medical Care Utilization in the United States. *The Milbank Quarterly*, *83*(4), 10.1111/j.1468-0009.2005.00428.x. https://doi.org/10.1111/j.1468-0009.2005.00428.x

Apanga, P. A., Kumbeni, M. T., Ayamga, E. A., Ulanja, M. B., & Akparibo, R. (2020). Prevalence and factors associated with modern contraceptive use among women of reproductive age in 20 African countries: A large population-based study. *BMJ Open*, *10*(9), e041103. https://doi.org/10.1136/bmjopen-2020-041103

Asresie, M. B., Fekadu, G. A., Dagnew, G. W., & Gelaw, Y. M. (2020). Modern Contraceptive Use and Influencing Factors in Amhara Regional State: Further Analysis of Ethiopian Demographic Health Survey Data 2016. *Advances in Public Health*, *2020*, e5817383. https://doi.org/10.1155/2020/5817383

Assi, L., Shakarchi, A. F., Sheehan, O. C., Deal, J. A., Swenor, B. K., & Reed, N. S. (2020). Assessment of Sensory Impairment and Health Care Satisfaction Among Medicare Beneficiaries. *JAMA Network Open*, *3*(11), e2025522. https://doi.org/10.1001/jamanetworkopen.2020.25522

Aviisah, P. A., Dery, S., Atsu, B. K., Yawson, A., Alotaibi, R. M., Rezk, H. R., & Guure, C. (2018). Modern contraceptive use among women of reproductive age in Ghana: Analysis of the 2003–2014 Ghana Demographic and Health Surveys. *BMC Women's Health*, *18*(1), 141. https://doi.org/10.1186/s12905-018-0634-9

Ayiga, N., & Kigozi, S. (2016). Access to and Uptake of Contraception by Women with Disabilities. *Journal of Social Sciences*, *12*(4), 171–181. https://doi.org/10.3844/jssp.2016.171.181

Ayinmoro, A. D., & Fayehun, O. A. (2022). Differentials in Contraceptive Use Among Selected Minority Ethnic Groups in Nigeria. *Frontiers in Global Women's Health*, *3*. https://www.frontiersin.org/articles/10.3389/fgwh.2022.878779

Ayuningtyas, D., Oktaviana, W., & Misnaniarti. (2015). Factors contributing to unmet need for contraception in Nusa Tenggara Barat, Indonesia. *Journal of Reproduction and Contraception*, *26*(4), 239–248. https://doi.org/10.7669/j.issn.1001-7844.2015.04.0239

Bahamondes, L., & Peloggia, A. (2019). Modern contraceptives in sub-Saharan African countries. *The Lancet Global Health*, *7*(7), e819–e820. https://doi.org/10.1016/S2214-109X(19)30199-8

Bankole, A., Remez, L., Owolabi, O., Philbin, J., & Williams, P. (2020). *From Unsafe to Safe Abortion in Sub-Saharan Africa: Slow but Steady Progress*. https://doi.org/10.1363/2020.32446

Bansode, O. M., Sarao, M. S., & Cooper, D. B. (2023). Contraception. In *StatPearls*. StatPearls Publishing. http://www.ncbi.nlm.nih.gov/books/NBK536949/

Barrow, A., Jobe, A., & Okonofua, F. (2021). *Prevalence and determinants of unmet family planning needs among women of childbearing age in The Gambia: Analysis of nationally representative data* (4:124). Gates Open Research. https://doi.org/10.12688/gatesopenres.13175.2

Bayr, P. (2020). *Empowering women: Promoting access to contraception in Europe*. https://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=28675&lang=en

Bekele, Y. A., & Fekadu, G. A. (2021). Factors associated with unintended pregnancy in Ethiopia; further analysis of the 2016 Ethiopian demographic health survey data. *BMC Pregnancy and Childbirth*, *21*, 486. https://doi.org/10.1186/s12884-021-03924-0

Beyene, G. A., Abebe, S. M., Fekadu, G. A., Muche, A. A., & Geremew, B. M. (2023a). Contraceptive dynamics among women with disabilities in low- and middle-income countries: A scoping review protocol. *Systematic Reviews*, *12*(1), 40. https://doi.org/10.1186/s13643-023-02214-4

Beyene, G. A., Abebe, S. M., Fekadu, G. A., Muche, A. A., & Geremew, B. M. (2023b). Contraceptive dynamics among women with disabilities in low- and middle-income countries: A scoping review protocol. *Systematic Reviews*, *12*(1), 40. https://doi.org/10.1186/s13643-023-02214-4

Beyene, G. A., Munea, A. M., & Fekadu, G. A. (2019). Modern Contraceptive Use and Associated Factors among Women with Disabilities in Gondar City, Amhara Region, North West Ethiopia: A Cross Sectional Study. *African Journal of Reproductive Health / La Revue Africaine de La Santé Reproductive*, *23*(2), 101–109.

Bhandari, R., Pokhrel, K. N., Gabrielle, N., & Amatya, A. (2019). Long acting reversible contraception use and associated factors among married women of reproductive age in Nepal. *PloS One*, *14*(3), e0214590. https://doi.org/10.1371/journal.pone.0214590

Boadu, I. (2022). Coverage and determinants of modern contraceptive use in sub-Saharan Africa: Further analysis of demographic and health surveys. *Reproductive Health*, *19*(1), 18. https://doi.org/10.1186/s12978-022-01332-x

Boah, M., Adokiya, M. N., & Hyzam, D. (2023). Prevalence and factors associated with the utilisation of modern contraceptive methods among married women of childbearing age in Yemen: A

secondary analysis of national survey data. *BMJ Open*, *13*(6), e071936. https://doi.org/10.1136/bmjopen-2023-071936

Bolarinwa, O. A., Aliu, M., Arthur-Holmes, F., Aboagye, R. G., Seidu, A.-A., Ahinkorah, B. O., & Ameyaw, E. K. (2023). Age of Sexual Debut and Modern Contraceptive Use Among Women of Reproductive Age in South Africa. *Sexuality & Culture*, *27*(3), 995–1009. https://doi.org/10.1007/s12119-022-10051-1

Bongaarts, J. (2016). Development: Slow down population growth. *Nature*, *530*(7591), Article 7591. https://doi.org/10.1038/530409a

Bongaarts, J. (2020). Trends in fertility and fertility preferences in sub-Saharan Africa: The roles of education and family planning programs. *Genus*, *76*(1), 32. https://doi.org/10.1186/s41118-020-00098-z

Bongaarts, J., & Hodgson, D. (2022). The Impact of Voluntary Family Planning Programs on Contraceptive Use, Fertility, and Population. In J. Bongaarts & D. Hodgson (Eds.), *Fertility Transition in the Developing World* (pp. 97–122). Springer International Publishing. https://doi.org/10.1007/978-3-031-11840-1_7

Bradley, S. E. K., & Casterline, J. B. (2014). Understanding Unmet Need: History, Theory, and Measurement. *Studies in Family Planning*, *45*(2), 123–150. https://doi.org/10.1111/j.1728-4465.2014.00381.x

Bradley, S. E. K., Croft, T. N., Fishel, J. D., & Westoff, C. F. (2012). *Revising Unmet Need for Family Planning. DHS Analytical Studies* (DHS Analytical Studies No. 25). USA: ICF International. https://dhsprogram.com/pubs/pdf/AS25/AS25%5B12June2012%5D.pdf

Casebolt, M. T., Singh, K., Speizer, I. S., & Halpern, C. T. (2022). Use of modern contraceptives by women with disabilities in Rajasthan, India: An analysis of the annual health survey. *Sexual & Reproductive Healthcare*, *31*, 100699. https://doi.org/10.1016/j.srhc.2022.100699

CDC. (2020, September 15). *Disability and Health Overview | CDC*. Centers for Disease Control and Prevention. https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html

Chersich, M. F., Wabiri, N., Risher, K., Shisana, O., Celentano, D., Rehle, T., Evans, M., & Rees, H. (2017a). Contraception coverage and methods used among women in South Africa: A national household survey. *SAMJ: South African Medical Journal*, *107*(4), 307–314.

Chersich, M. F., Wabiri, N., Risher, K., Shisana, O., Celentano, D., Rehle, T., Evans, M., & Rees, H. (2017b). Contraception coverage and methods used among women in South Africa: A national household survey. *South African Medical Journal*, *107*(4), Article 4.

Chola, M., Hlongwana, K., & Ginindza, T. G. (2020). Patterns, trends, and factors associated with contraceptive use among adolescent girls in Zambia (1996 to 2014): A multilevel analysis. *BMC Women's Health*, *20*(1), 185. https://doi.org/10.1186/s12905-020-01050-1

Cleland, J., & Potter, J. E. (2019). Fertility Regulation. In *Handbook of Population* (2nd ed.). chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://researchonline.lshtm.ac.uk/id/eprint/4655006/1/31-cleland-potter-fertility%20regulation-edited-dlp.pdf

Cordero, J. P., Steyn, P. S., Gichangi, P., Kriel, Y., Milford, C., Munakampe, M., Njau, I., Nkole, T., Silumbwe, A., Smit, J., & Kiarie, J. (2019). Community and Provider Perspectives on Addressing Unmet Need for Contraception: Key Findings from a Formative Phase Research in Kenya, South Africa and Zambia (2015-2016). *African Journal of Reproductive Health / La Revue Africaine de La Santé Reproductive*, *23*(3), 106–119.

Daniels, K. (2020). *Current Contraceptive Status Among Women Aged 15–49: United States, 2017–2019*. *388*.

Das Shrestha, B., Ali, M., Mahaini, R., & Gholbzouri, K. (2019). A review of family planning policies and services in WHO Eastern Mediterranean Region Member States. *Eastern Mediterranean Health Journal*, *25*(02), 127–133. https://doi.org/10.26719/emhj.18.023

Dasgupta, A., Wheldon, M., Kantorová, V., & Ueffing, P. (2022). Contraceptive use and fertility transitions: The distinctive experience of sub-Saharan Africa. *Demographic Research*, *46*, 97–130. https://doi.org/10.4054/DemRes.2022.46.4

David, S. C., Eze, S. C., Eleje, C. C., Odoh, E. C., Omotayo, F. O., Kalu, O. L., & Eze, C. C. (2022). The use and impact of contraceptives in women: A critical review. *International Journal of*

Scientific Reports, *8*(12), 405–413. https://doi.org/10.18203/issn.2454-2156.IntJSciRep20223039

Dehlendorf, C., Park, S. Y., Emeremni, C. A., Comer, Ms. D., Vincett, Ms. K., & Borrero, S. (2014). Racial/ethnic disparities in contraceptive use: Variation by age and women's reproductive experiences. *American Journal of Obstetrics and Gynecology*, *210*(6), 526.e1-526.e9. https://doi.org/10.1016/j.ajog.2014.01.037

Department of Empowerment of Persons with Disabilities. (2021). *Disability in India | Office of Chief Commissioner for Persons with Disabilities*. http://www.ccdisabilities.nic.in/resources/disability-india

Department of Health. (2012). *National Contraception Clinical Guidelines*. https://www.gov.za/sites/default/files/gcis_document/201409/contraceptionclinicalguidelines28jan2013-2.pdf

Department of Health, Statistics South Africa, South African Medical Research Council, & ICF. (2019). *South Africa Demographic and Health Survey 2016*. https://dhsprogram.com/publications/publication-fr337-dhs-final-reports.cfm

Dereuddre, R., Van de Putte, B., & Bracke, P. (2016). Ready, Willing, and Able: Contraceptive Use Patterns Across Europe. *European Journal of Population*, *32*(4), 543–573. https://doi.org/10.1007/s10680-016-9378-0

Forty, J., Rakgoasi, S. D., & Keetile, M. (2021). Patterns and determinants of modern contraceptive use and intention to usecontraceptives among Malawian women of reproductive ages (15–49 years). *Contraception and Reproductive Medicine*, *6*(1), 21. https://doi.org/10.1186/s40834-021-00163-8

Frini, O., & Muller, C. (2023). Revisiting fertility regulation and family ties in Tunisia. *BMC Pregnancy and Childbirth*, *23*(1), 88. https://doi.org/10.1186/s12884-023-05408-9

Gafar, A., Suza, D. E., Efendi, F., Has, E. M. M., Pramono, A. P., & Susanti, I. A. (2020). Determinants of contraceptive use among married women in Indonesia. *F1000Research*, *9*, 193. https://doi.org/10.12688/f1000research.22482.1

Gahungu, J., Vahdaninia, M., & Regmi, P. R. (2021). The unmet needs for modern family planning methods among postpartum women in Sub-Saharan Africa: A systematic review of the literature. *Reproductive Health*, *18*(1), 35. https://doi.org/10.1186/s12978-021-01089-9

Ghazal, B. E. (2023). *DISABILITY AND INCLUSION SURVEY*.

Glick, I., Kadish, E., & Rottenstreich, M. (2021). Management of Pregnancy in Women of Advanced Maternal Age: Improving Outcomes for Mother and Baby. *International Journal of Women's Health*, *13*, 751–759. https://doi.org/10.2147/IJWH.S283216

Government Communications. (2022). *South Africa Yearbook 2021/22*. https://www.gcis.gov.za/sites/default/files/docs/gcis/SAYB%202021_2022%20ONLINE%20VERSION.pdf

Grady, C. D., Dehlendorf, C., Cohen, E. D., Schwarz, E. B., & Borrero, S. (2015). Racial and Ethnic Differences in Contraceptive Use Among Women Who Desire No Future Children, 2006–2010 National Survey of Family Growth. *Contraception*, *92*(1), 62–70. https://doi.org/10.1016/j.contraception.2015.03.017

Habte, A., Tamene, A., & Bogale, B. (2023). Women empowerment domains and unmet need for contraception among married and cohabiting fecund women in Sub-Saharan Africa: A multilevel analysis based on gender role framework. *PLOS ONE*, *18*(9), e0291110. https://doi.org/10.1371/journal.pone.0291110

Hall, M., Cobbing, J., & Lowe, C. (2023). *South Africa | History, Capital, Flag, Map, Population, & Facts | Britannica*. https://www.britannica.com/place/South-Africa

Harries, J., Constant, D., Wright, V., Morroni, C., Müller, A., & Colvin, C. J. (2019). A multidimensional approach to inform family planning needs, preferences and behaviours amongst women in South Africa through body mapping. *Reproductive Health*, *16*(1), 159. https://doi.org/10.1186/s12978-019-0830-6

Hashemi, G., Kuper, H., & Wickenden, M. (2017). SDGs, Inclusive Health and the path to Universal Health Coverage. Disability and The Global South. *Disability and The Global South*, *4*(1), Article 1.

Haynes, R. M., Boulet, S. L., Fox, M. H., Carroll, D. D., Courtney-Long, E., & Warner, L. (2018). Contraceptive use at last intercourse among reproductive-aged women with disabilities: An analysis of population-based data from seven states. *Contraception*, *97*(6), 538–545. https://doi.org/10.1016/j.contraception.2017.12.008

Hernandez, J. H., Babazadeh, S., Anglewicz, P. A., & Akilimali, P. Z. (2022). As long as (I think) my husband agrees…: Role of perceived partner approval in contraceptive use among couples living in military camps in Kinshasa, DRC. *Reproductive Health*, *19*, 6. https://doi.org/10.1186/s12978-021-01256-y

Hlongwa, M., Kalinda, C., Peltzer, K., & Hlongwana, K. (2021). Factors associated with modern contraceptive use: A comparative analysis between younger and older women in Umlazi Township, KwaZulu-Natal, South Africa. *Women's Health*, *17*, 17455065211060641. https://doi.org/10.1177/17455065211060641

Hlongwa, M., Mashamba-Thompson, T., Makhunga, S., & Hlongwana, K. (2020a). Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa. *Medicine*, *99*(12), e19490. https://doi.org/10.1097/MD.0000000000019490

Hlongwa, M., Mashamba-Thompson, T., Makhunga, S., & Hlongwana, K. (2020b). Evidence on factors influencing contraceptive use and sexual behavior among women in South Africa. *Medicine*, *99*(12), e19490. https://doi.org/10.1097/MD.0000000000019490

Hoo, K. Y., & Lai, S. L. (2023, March 1). *Factors Associated with Contraceptive Use in Malaysia and Pakistan. | Pertanika Journal of Social Sciences & Humanities | EBSCOhost*. https://doi.org/10.47836/pjssh.31.1.14

Horner-Johnson, W., Klein, K. A., Campbell, J., & Guise, J.-M. (2021). Experiences of Women With Disabilities in Accessing and Receiving Contraceptive Care. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *50*(6), 732–741. https://doi.org/10.1016/j.jogn.2021.07.005

Imtishal, M., Mohammadnezhad, M., Baker, P., & Khan, S. (2023). Predictors of Knowledge, Attitude, and Practice (KAP) Towards Family Planning (FP) Among Pregnant Women in Fiji.

Maternal and Child Health Journal, *27*(5), 795–804. https://doi.org/10.1007/s10995-023-03618-3

Islam, A. Z. (2018). Factors affecting modern contraceptive use among fecund young women in Bangladesh: Does couples' joint participation in household decision making matter? *Reproductive Health*, *15*(1), 112. https://doi.org/10.1186/s12978-018-0558-8

Jain, R., & Muralidhar, S. (2011). Contraceptive Methods: Needs, Options and Utilization. *The Journal of Obstetrics and Gynecology of India*, *61*(6), 626–634. https://doi.org/10.1007/s13224-011-0107-7

Juarez, F., Gayet, C., & Mejia-Pailles, G. (2018). Factors associated with unmet need for contraception in Mexico: Evidence from the National Survey of Demographic Dynamics 2014. *BMC Public Health*, *18*(1), 546. https://doi.org/10.1186/s12889-018-5439-0

Kane, S., Kok, M., Rial, M., Matere, A., Dieleman, M., & Broerse, J. E. (2016). Social norms and family planning decisions in South Sudan. *BMC Public Health*, *16*(1), 1183. https://doi.org/10.1186/s12889-016-3839-6

Kc, S. P., Adhikari, B., Pandey, A. R., Pandey, M., Kakchapati, S., Giri, S., Sharma, S., Lamichhane, B., Gautam, G., Joshi, D., Dulal, B. P., Regmi, S., & Baral, S. C. (2023). *Unmet need for family planning and associated factors among currently married women in Nepal: A further analysis of Nepal Demographic and Health Survey - 2022* (p. 2023.08.16.23294154). medRxiv. https://doi.org/10.1101/2023.08.16.23294154

Kraft, J. M., Serbanescu, F., Schmitz, M. M., Mwanshemele, Y., Ruiz C., A. G., Maro, G., & Chaote, P. (2022). Factors Associated with Contraceptive Use in Sub-Saharan Africa. *Journal of Women's Health*, *31*(3), 447–457. https://doi.org/10.1089/jwh.2020.8984

Kriel, Y., Milford, C., Cordero, J. P., Suleman, F., Steyn, P. S., & Smit, J. A. (2023). Access to public sector family planning services and modern contraceptive methods in South Africa: A qualitative evaluation from community and health care provider perspectives. *PLOS ONE*, *18*(3), e0282996. https://doi.org/10.1371/journal.pone.0282996

Kristiansen, D., Boyle, E. H., & Svec, J. (2023). The impact of local supply of popular contraceptives on women's use of family planning: Findings from performance-monitoring-for-action in seven sub-Saharan African countries. *Reproductive Health*, *20*(1), 171. https://doi.org/10.1186/s12978-023-01708-7

Lasong, J., Zhang, Y., Gebremedhin, S. A., Opoku, S., Abaidoo, C. S., Mkandawire, T., Zhao, K., & Zhang, H. (2020). Determinants of modern contraceptive use among married women of reproductive age: A cross-sectional study in rural Zambia. *BMJ Open*, *10*(3), e030980. https://doi.org/10.1136/bmjopen-2019-030980

Lince-Deroche, N., Harries, J., Mullick, S., Mulongo, M., Sinanovic, E., Pleaner, M., Morroni, C., Firnhaber, C., & Holele, P. (2016). *reproductive health services: The potential and pitfalls for contraceptive services in South Africa*.

Mahfouz, M. S., Elmahdy, M., Ryani, M. A., Abdelmola, A. O., Kariri, S. A. A., Alhazmi, H. Y. A., Almalki, S. H. M., Adhabi, O. M., Ali Hindi, S. M., Muqri, N. M., & Towhary, B. A. (2023). Contraceptive Use and the Associated Factors among Women of Reproductive Age in Jazan City, Saudi Arabia: A Cross-Sectional Survey. *International Journal of Environmental Research and Public Health*, *20*(1), 843. https://doi.org/10.3390/ijerph20010843

Makola, L., Mlangeni, L., Mabaso, M., Chibi, B., Sokhela, Z., Silimfe, Z., Seutlwadi, L., Naidoo, D., Khumalo, S., Mncadi, A., & Zuma, K. (2019). Predictors of contraceptive use among adolescent girls and young women (AGYW) aged 15 to 24 years in South Africa: Results from the 2012 national population-based household survey. *BMC Women's Health*, *19*(1), 158. https://doi.org/10.1186/s12905-019-0861-8

Mbalinda, S. N., Kaye, D. K., Nyashanu, M., & Kiwanuka, N. (2020). Using Andersen's Behavioral Model of Health Care Utilization to Assess Contraceptive Use among Sexually Active Perinatally HIV-Infected Adolescents in Uganda. *International Journal of Reproductive Medicine*, *2020*, 8016483. https://doi.org/10.1155/2020/8016483

Mboweni, R. F., & Sumbane, G. O. (2019). Factors Contributing to Delayed Health Seeking Behaviours Among Adolescents. *Global Journal of Health Science*, *11*(13), 67. https://doi.org/10.5539/gjhs.v11n13p67

Mencken, I. (2023). Racial Differences in Hormonal Contraception Use and Accessibility Among University of South Carolina-Columbia Undergraduate Women. *Senior Theses*, 1–58.

Mesfin, Y. (2021). Unmet Need for Family Planning and Associated Factors among Married and Union Reproductive-Age Women with Disability in Southern Ethiopia: Cross Sectional Study. *Health Science Journal*, *15*(1).

Mesfin Yesgat, Y., Gebremeskel, F., Estifanous, W., Gizachew, Y., Jemal, S., Atnafu, N., & Nuriye, K. (2020). Utilization of Family Planning Methods and Associated Factors Among Reproductive-Age Women with Disability in Arba Minch Town, Southern Ethiopia. *Open Access Journal of Contraception*, *11*, 25–32. https://doi.org/10.2147/OAJC.S240817

Mnkandla, M. M. A., Tshitangano, T. G., & Mudau, A. G. (2023). Healthcare-Seeking Behaviors of Homeless Substance Users During the COVID-19 Lockdowns in Gauteng, South Africa: A COREQ-Based Report. *Social Sciences*, *12*(8), Article 8. https://doi.org/10.3390/socsci12080464

Mohammed, A., Woldeyohannes, D., Feleke, A., & Megabiaw, B. (2014). Determinants of modern contraceptive utilization among married women of reproductive age group in North Shoa Zone, Amhara Region, Ethiopia. *Reproductive Health*, *11*(1), 13. https://doi.org/10.1186/1742-4755-11-13

Moreira, L. R., Ewerling, F., Barros, A. J. D., & Silveira, M. F. (2019). Reasons for nonuse of contraceptive methods by women with demand for contraception not satisfied: An assessment of low and middle-income countries using demographic and health surveys. *Reproductive Health*, *16*(1), 148. https://doi.org/10.1186/s12978-019-0805-7

Mprah, W. K., Anafi, P., & Addai Yeaboah, P. Y. (2017). Exploring misinformation of family planning practices and methods among deaf people in Ghana*. *Reproductive Health Matters*, *25*(50), 20–30. https://doi.org/10.1080/09688080.2017.1332450

Müller, A., Röhrs, S., Hoffman-Wanderer, Y., & Moult, K. (2016). “You have to make a judgment call”. – Morals, judgments and the provision of quality sexual and reproductive health services for adolescents in South Africa. *Social Science & Medicine*, *148*, 71–78. https://doi.org/10.1016/j.socscimed.2015.11.048

Mutumba, M., Wekesa, E., & Stephenson, R. (2018). Community influences on modern contraceptive use among young women in low and middle-income countries: A cross-sectional multi-country analysis. *BMC Public Health*, *18*, 430. https://doi.org/10.1186/s12889-018-5331-y

Ngabaza, S., & Shefer, T. (2019). Sexuality education in South African schools: Deconstructing the dominant response to young people’s sexualities in contemporary schooling contexts. *Sex Education*, *19*(4), 422–435. https://doi.org/10.1080/14681811.2019.1602033

Nketsia, W., Mprah, W. K., Opoku, M. P., Juventus, D., & Amponteng, M. (2022). Achieving universal reproductive health coverage for deaf women in Ghana: An explanatory study of knowledge of contraceptive methods, pregnancy and safe abortion practices. *BMC Health Services Research*, *22*(1), 954. https://doi.org/10.1186/s12913-022-08323-5

Nkoka, O., Mphande, W. M., Ntenda, P. A. M., Milanzi, E. B., Kanje, V., & Guo, S. J. G. (2020). Multilevel analysis of factors associated with unmet need for family planning among Malawian women. *BMC Public Health*, *20*(1), 705. https://doi.org/10.1186/s12889-020-08885-1

Nkonde, H., Mukanga, B., & Daka, V. (2023). Male partner influence on Women’s choices and utilisation of family planning services in Mufulira district, Zambia. *Heliyon*, *9*(3), e14405. https://doi.org/10.1016/j.heliyon.2023.e14405

Nyaga, M. (2016). *Ethnicity and contraceptive use in Kenya*. http://hdl.handle.net/10539/21843

Nyarko, S. H. (2020). Spatial variations and socioeconomic determinants of modern contraceptive use in Ghana: A Bayesian multilevel analysis. *PLOS ONE*, *15*(3), e0230139. https://doi.org/10.1371/journal.pone.0230139

Nzokirishaka, A., & Itua, I. (2018). Determinants of unmet need for family planning among married women of reproductive age in Burundi: A cross-sectional study. *Contraception and Reproductive Medicine*, *3*(1), 11. https://doi.org/10.1186/s40834-018-0062-0

Obasohan, P. E. (2015). Religion, Ethnicity and Contraceptive Use among Reproductive age Women in Nigeria. *International Journal of MCH and AIDS*, *3*(1), 63–73.

Odimegwu, C., Akinyemi, J. O., Banjo, O. O., Olamijuwon, E., & Amoo, E. O. (2018). Fertility, Family Size Preference and Contraceptive Use in Sub-Saharan Africa: 1990-2014. *African Journal of Reproductive Health*, *22*(4), Article 4.

Odimegwu, C., & Chemhaka, G. B. (2021). Contraceptive use in Eswatini: Do contextual influences matter? *Journal of Biosocial Science*, *53*(1), 20–37. https://doi.org/10.1017/S0021932019000889

OECD & The World Bank. (2020). *Health at a Glance: Latin America and the Caribbean 2020*. OECD. https://doi.org/10.1787/6089164f-en

Ononokpono, D. N., Odimegwu, C. O., & Usoro, N. A. (2020). Contraceptive Use in Nigeria: Does Social Context Matter? *African Journal of Reproductive Health*, *24*(1), Article 1.

Osuafor, G. N., & Maputle, S. M. (2017). Dual Protection and Contraceptive Method Use among Women in Heterosexual Relationships in Mahikeng, South Africa. *African Journal of Reproductive Health / La Revue Africaine de La Santé Reproductive*, *21*(1), 64–72.

Pazol, K., Zapata, L. B., Tregear, S. J., Mautone-Smith, N., & Gavin, L. E. (2015). Impact of Contraceptive Education on Contraceptive Knowledge and Decision Making. *American Journal of Preventive Medicine*, *49*(2 0 1), S46–S56. https://doi.org/10.1016/j.amepre.2015.03.031

Peta, C. (2017). Disability is not asexuality: The childbearing experiences and aspirations of women with disability in Zimbabwe. *Reproductive Health Matters*, *25*(50), 10–19. https://doi.org/10.1080/09688080.2017.1331684

Phiri, M., Odimegwu, C., & Kalinda, C. (2023). Unmet need for family planning among married women in sub-Saharan Africa: A meta-analysis of DHS data (1995 – 2020). *Contraception and Reproductive Medicine*, *8*, 3. https://doi.org/10.1186/s40834-022-00198-5

Rugoho, T., & Maphosa, F. (2017). Challenges faced by women with disabilities in accessing sexual and reproductive health in Zimbabwe: The case of Chitungwiza town. *African Journal of Disability*, *6*, 252. https://doi.org/10.4102/ajod.v6i0.252

Sedgh, G., Ashford, L. S., & Hussain, R. (2016). *Unmet Need for Contraception in Developing Countries: Examining Women's Reasons for Not Using a Method*. https://www.guttmacher.org/report/unmet-need-for-contraception-in-developing-countries

Senders, A., & Horner-Johnson, W. (2022). Contraceptive Use Among Adolescents With and Without Disabilities. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *70*(1), 120–126. https://doi.org/10.1016/j.jadohealth.2021.06.028

Sharma, A., & Gupta, V. (2017). A study of awareness and factors affecting acceptance of PPIUCD in South-East Rajasthan. *International Journal Of Community Medicine And Public Health*, *4*(8), 2706–2710. https://doi.org/10.18203/2394-6040.ijcmph20173313

Shukla, A., Nieman, C. L., Price, C., Harper, M., Lin, F. R., & Reed, N. S. (2019). Impact of Hearing Loss on Patient–Provider Communication Among Hospitalized Patients: A Systematic Review. *American Journal of Medical Quality*, *34*(3), 284–292. https://doi.org/10.1177/1062860618798926

Singh, S., Remez, L., Sedgh, G., Kwok, L., & Onda, T. (2018). *Abortion Worldwide 2017: Uneven Progress and Unequal Access*.

Solanke, B. L., Oyinlola, F. F., Oyeleye, O. J., & Ilesanmi, B. B. (2019). Maternal and community factors associated with unmet contraceptive need among childbearing women in Northern Nigeria. *Contraception and Reproductive Medicine*, *4*(1), 11. https://doi.org/10.1186/s40834-019-0093-1

Statistics South Africa. (2023). *Census 2022*.

Stewart, C. (2021). *Contraception use among women in Europe 2018*. Statista. https://www.statista.com/statistics/1062922/contraception-use-among-women-in-europe/

Sujarwoto, S., Ekoriano, M., Purwoko, E., Titisari, A. S., Rahmadhony, A., & Sari, D. P. (2023). Can a National Health Insurance Policy Increase Modern Contraceptive Use? A Cross-Sectional Study of the Indonesian Government Performance and Accountability Survey (GPAS) 2019. *SAGE Open*, *13*(1), 21582440231160665. https://doi.org/10.1177/21582440231160665

Tadele, A., Abebaw, D., & Ali, R. (2019). Predictors of unmet need for family planning among all women of reproductive age in Ethiopia. *Contraception and Reproductive Medicine*, *4*(1), 6. https://doi.org/10.1186/s40834-019-0087-z

Takyi, A., Sato, M., Adjabeng, M., & Smith, C. (2023). Factors that influence modern contraceptive use among women aged 35 to 49 years and their male partners in Gomoa West District, Ghana: A qualitative study. *Tropical Medicine and Health*, *51*(1), 40. https://doi.org/10.1186/s41182-023-00531-x

Tejeji, M. Y., & Assefa, B. (2017). *Assessment on Family Planning Needs of People Living with Disabilities: Case of Addis Ababa, Ethiopia*.

Tenaw, Z., Gari, T., & Gebretsadik, A. (2023a). Contraceptive use among reproductive-age females with disabilities in central Sidama National Regional State, Ethiopia: A multilevel analysis. *PeerJ*, *11*, e15354. https://doi.org/10.7717/peerj.15354

Tenaw, Z., Gari, T., & Gebretsadik, A. (2023b). Unintended pregnancy and its associated factors among women with disabilities in central Sidama National Regional State, Ethiopia: A multilevel analysis. *BMC Pregnancy and Childbirth*, *23*(1), 522. https://doi.org/10.1186/s12884-023-05848-3

Terefe, B., Getnet, M., Akalu, Y., Belsti, Y., Diress, M., Gela, Y. Y., Getahun, A. B., Bitew, D. A., & Belay, D. G. (2023). Geospatial variations and determinants of contraceptive utilization among married reproductive age women in Ethiopia: Spatial and multilevel analysis of Ethiopian Demographic and Health Survey, 2019. *Frontiers in Global Women's Health*, *4*. https://www.frontiersin.org/articles/10.3389/fgwh.2023.1151031

Teshale, A. B. (2022). Factors associated with unmet need for family planning in sub-Saharan Africa: A multilevel multinomial logistic regression analysis. *PLoS ONE*, *17*(2), e0263885. https://doi.org/10.1371/journal.pone.0263885

Tessema, A. L., Bishaw, M. A., & Bunare, T. S. (2015). Assessment of the Magnitude and Associated Factors of Unmet Need for Family Planning among Women of Reproductive Age Group with Disabilities in Bahir Dar City, Amhara Region, North West Ethiopia. *Open Journal of Epidemiology*, *5*(1), Article 1. https://doi.org/10.4236/ojepi.2015.51007

Thapa, N. R., Adhikari, S., & Budhathoki, P. K. (2018). *The effect of internal migration on the use of reproductive and maternal health services in Nepal* (DHS Working Papers No. 140). Article DHS Working Papers No. 140. https://dhsprogram.com/publications/publication-wp140-working-papers.cfm

The South African Medical Research Council. (2022). *The HERStory Series: Access, use, and perceptions of contraception services among adolescent girls and young women in South Africa | SAMRC*. https://www.samrc.ac.za/policy-briefs/herstory-series-access-use-and-perceptions-contraception-services-among-adolescent

Tibaijuka, L., Odongo, R., Welikhe, E., Mukisa, W., Kugonza, L., Busingye, I., Nabukalu, P., Ngonzi, J., Asiimwe, S. B., & Bajunirwe, F. (2017). Factors influencing use of long-acting versus short-acting contraceptive methods among reproductive-age women in a resource-limited setting. *BMC Women's Health*, *17*(1), 25. https://doi.org/10.1186/s12905-017-0382-2

Timilsina, A., Neupane, P., Pandey, J., Subedi, A., & Thapa, S. (2024). Exploring the healthcare access challenges faced by visually impaired young women in Nepal: Navigating sexual harassment and stigma within healthcare settings. *Dialogues in Health*, *4*, 100171. https://doi.org/10.1016/j.dialog.2024.100171

Tiruneh, F. N., Chuang, K.-Y., Ntenda, P. A. M., & Chuang, Y.-C. (2016). Factors associated with contraceptive use and intention to use contraceptives among married women in Ethiopia. *Women & Health*, *56*(1), 1–22. https://doi.org/10.1080/03630242.2015.1074640

Tun, W., Okal, J., Schenk, K., Esantsi, S., Mutale, F., Kyeremaa, R. K., Ngirabakunzi, E., Asiah, H., McClain-Nhlapo, C., & Moono, G. (2016). Limited accessibility to HIV services for persons with disabilities living with HIV in Ghana, Uganda and Zambia. *Journal of the International AIDS Society*, *19*(5Suppl 4), 20829. https://doi.org/10.7448/IAS.19.5.20829

UNFPA. (2015a). *Family planning*. UNFPA Arabstates. https://arabstates.unfpa.org/en/topics/family-planning-0

UNFPA. (2015b). *Sexual and Reproductive Health Rights Needs Assessment*.

UNFPA. (2020). *The Unmet Need for Family Planning*. https://turkiye.unfpa.org/sites/default/files/pub-pdf/fp-unmetneed-eng.pdf

United Nations. (2006). *Convention on the Rights of Persons with Disabilities*. OHCHR. https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities

United Nations. (2017). . *World Family Planning 2017—Highlights*. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2017_worldfamilyplanning_highlights.pdf

United Nations. (2019a). *Family Planning and the 2030 Agenda for Sustainable Development (Data Booklet)*. United Nations. https://doi.org/10.18356/e154e49d-en

United Nations. (2019b, June 3). *The impact of migration on migrant women and girls: A gender perspective: Report of the Special Rapporteur on the human rights of migrants (A/HRC/41/38) [EN/AR/RU] - World | ReliefWeb*. https://reliefweb.int/report/world/impact-migration-migrant-women-and-girls-gender-perspective-report-special-rapporteur

United Nations. (2020a). *World Family Planning 2020: Highlights: Accelerating Action to Ensure Universal Access to Family Planning*. United Nations. https://doi.org/10.18356/9789210052009

United Nations. (2020b). *World Fertility and Family Planning 2020: Highlights*. https://www.un.org/en/development/desa/population/publications/pdf/family/World_Fertility_and_Family_Planning_2020_Highlights.pdf

United Nations. (2022). *World Family Planning 2022: Meeting the changing needs for family planning: Contraceptive use by age and method.* (4). https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2023/Feb/undesa_pd_2022_world-family-planning.pdf

Vahedi, S., Torabipour, A., Takian, A., Mohammadpur, S., Olyaeemanesh, A., Kiani, M. M., & Mohamadi, E. (2021). Socioeconomic determinants of unmet need for outpatient healthcare services in Iran: A national cross-sectional study. *BMC Public Health*, *21*(1), 457. https://doi.org/10.1186/s12889-021-10477-6

Valentine, A., Akobirshoev, I., & Mitra, M. (2019). Intimate Partner Violence among Women with Disabilities in Uganda. *International Journal of Environmental Research and Public Health*, *16*(6), Article 6. https://doi.org/10.3390/ijerph16060947

Wai, M. M., Bjertness, E., Stigum, H., Htay, T. T., Liabsuetrakul, T., Moe Myint, A. N., & Sundby, J. (2019). Unmet Need for Family Planning among Urban and Rural Married Women in Yangon Region, Myanmar—A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, *16*(19), 3742. https://doi.org/10.3390/ijerph16193742

Wang, W., & Mallick, L. (2019). Understanding the relationship between family planning method choices and modern contraceptive use: An analysis of geographically linked population and health facilities data in Haiti. *BMJ Global Health*, *4*(Suppl 5), e000765. https://doi.org/10.1136/bmjgh-2018-000765

Wang, W., Staveteig, S., Winter, R., & Allen, C. (2017). *Women's marital status, contraceptive use, and unmet need in Sub-Saharan Africa, Latin America, and the Caribbean* (DHS Comparative Report No. 44). Article DHS Comparative Report No. 44. https://dhsprogram.com/publications/publication-cr44-comparative-reports.cfm

Warner, R. M. (2008). *Applied statistics: From bivariate through multivariate techniques* (pp. xxvi, 1101). Sage Publications, Inc.

Woldeamanuel, B. T., Gessese, G. T., Demie, T. G., Handebo, S., & Biratu, T. D. (2023). Women's education, contraception use, and high-risk fertility behavior: A cross-sectional analysis of the

demographic and health survey in Ethiopia. *Frontiers in Global Women's Health*, *4*, 1071461. https://doi.org/10.3389/fgwh.2023.1071461

World Health Organization. (2001). *International Classification of Functioning, Disability and Health (ICF)*. https://www.who.int/classifications/international-classification-of-functioning-disability-and-health

World Health Organization. (2019). *High rates of unintended pregnancies linked to gaps in family planning services: New WHO study*. https://www.who.int/news/item/25-10-2019-high-rates-of-unintended-pregnancies-linked-to-gaps-in-family-planning-services-new-who-study

World Health Organization. (2020). *Family planning/contraception methods*. https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

World Health Organization. (2021). *World Report on Hearing*. https://www.who.int/teams/noncommunicable-diseases/sensory-functions-disability-and-rehabilitation/highlighting-priorities-for-ear-and-hearing-care

World Health Organization. (2023a). *Family planning/contraception methods*. https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

World Health Organization. (2023b). *Vision and hearing loss*. https://www.who.int/europe/news-room/fact-sheets/item/vision-and-hearing-loss

World Health Organization. (2023c). *Vision impairment and blindness*. https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment

World Health Organization. (2024). *Deafness and hearing loss*. https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss

World Health Organization, & Centre for Communication Programs. (2022). *Family Planning: A Global Handbook for Providers*. WHO.

Wu, J. P., McKee, K. S., McKee, M. M., Meade, M. A., Plegue, M. A., & Sen, A. (2017). Use of Reversible Contraceptive Methods Among U.S. Women with Physical or Sensory Disabilities. *Perspectives on Sexual and Reproductive Health*, *49*(3), 141–147. https://doi.org/10.1363/psrh.12031

Wulifan, J. K., Jahn, A., Hien, H., Ilboudo, P. C., Meda, N., Robyn, P. J., Saidou Hamadou, T., Haidara, O., & De Allegri, M. (2017). Determinants of unmet need for family planning in rural Burkina Faso: A multilevel logistic regression analysis. *BMC Pregnancy and Childbirth*, *17*(1), 426. https://doi.org/10.1186/s12884-017-1614-z

Wulifan, J. K., Mazalale, J., Kambala, C., Angko, W., Asante, J., Kpinpuo, S., & Kalolo, A. (2019). Prevalence and determinants of unmet need for family planning among married women in Ghana-a multinomial logistic regression analysis of the GDHS, 2014. *Contraception and Reproductive Medicine*, *4*(1), 2. https://doi.org/10.1186/s40834-018-0083-8

Wuni, C., Turpin, C. A., & Dassah, E. T. (2018). Determinants of contraceptive use and future contraceptive intentions of women attending child welfare clinics in urban Ghana. *BMC Public Health*, *18*(1), Article 1. https://doi.org/10.1186/s12889-017-4641-9

Yeboah, P. A., Adzigbli, L. A., Atsu, P., Ansong-Aggrey, S. K., Adu, C., Cadri, A., & Aboagye, R. G. (2023). Unmet need for contraception among women in Benin: A cross-sectional analysis of the Demographic and Health Survey. *International Health*, ihad049. https://doi.org/10.1093/inthealth/ihad049

Yimer, A. S., & Modiba, L. M. (2019). Modern contraceptive methods knowledge and practice among blind and deaf women in Ethiopia. A cross-sectional survey. *BMC Women's Health*, *19*(1), 151. https://doi.org/10.1186/s12905-019-0850-y

Zegeye, B., Ahinkorah, B. O., Idriss-Wheeler, D., Olorunsaiye, C. Z., Adjei, N. K., & Yaya, S. (2021). Modern contraceptive utilization and its associated factors among married women in Senegal: A multilevel analysis. *BMC Public Health*, *21*(1), 231. https://doi.org/10.1186/s12889-021-10252-7