

**THE EFFECTS OF DIGITAL SOCIAL NETWORKS UTILISATION ON YOUTH
SEXUAL AND REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITIES IN ADDIS
ABABA CITY ADMINISTRATIVE, ETHIOPIA**

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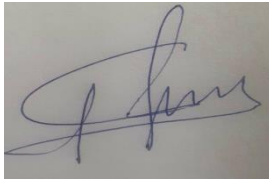
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DECLARATION

*I declare that the thesis titled **THE EFFECTS OF DIGITAL SOCIAL NETWORKS UTILISATION ON YOUTH SEXUAL AND REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITIES IN ADDIS ABABA CITY ADMINISTRATIVE, ETHIOPIA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has been submitted before for other degree at any other institution.*



Date 12 November 2024

Girma Abdissa Gobena

EFFECTS OF DIGITAL SOCIAL NETWORK USE ON YOUTH SEXUAL AND
REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITIES, ADDIS ABABA CITY
ADMINISTRATION, ETHIOPIA.

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ABSTRACT

BACKGROUND: Studies conducted in both developed and developing countries suggest that social media can have both negative and positive impacts on the sexual practices of the youth. While it can spread knowledge in various areas, there is a rise in addiction to digital social networks. The correlation between social media exposure and sexual initiation remains complex, but many young people in Ethiopia frequently use social media, which raises concerns about its potential risks on their sexual and reproductive health.

PURPOSE: The aim of the study was to investigate the effects of digital social networks (DSN) on youth sexuality and reproductive health in institutions of higher education in Ethiopia.

METHODS: The mixed-method approach was used to investigate the impact of digital social networks on the sexual and reproductive health of youth in selected public universities in Ethiopia. A cross-sectional survey was conducted to gather quantitative data, while in-depth interviews were carried out with prepared interview guides for qualitative data collection. A total of 393 respondents and 15 in-depth interview participants were selected for the quantitative and qualitative studies, respectively, using systematic random sampling techniques. The data were analyzed using SPSS version 25 software for quantitative data, and thematic content analysis was performed using ATLAS.ti 24 software for qualitative data. Logistic regression was utilized to identify factors associated with digital social network use and access to sexual reproductive health education in relation to risky sexual practices.

RESULTS: The majority of respondents use various social media sites and believe that these digital platforms provide reliable information about sexual and reproductive health, despite not knowing the source of the information. Additionally, more than half of the respondents reported seeing sexual initiation activities on social media, and a significant number of participants reported a lack of adequate access to sexual and reproductive health information. There is no guide available for accessing digital social networks for sexual and reproductive health information. Furthermore, a large amount of qualitative data suggests a need that sexual and reproductive health be incorporated into existing university courses.

CONCLUSION: The study identified that information from social media is being used without regulation and that there is a lack of understanding of sexual health services, as well as the risks and benefits of social media. Most students believed there was reliable information on digital social networks but were unsure of trustworthy sources. Additionally, limited access to sexual health services at universities increases the risk of sexual health issues. Based on this study findings, the “APPLE USE” guidelines were developed with the aim of guiding health promotion program on the use of digital social network for youth sexual and reproductive health thus reduce risky sexual behaviors and promote sexual and reproductive health well-being in higher institutions.

KEYWORDS: APPLE USE guideline, DSN, DSN sites, risky sexual behaviour, sexual reproductive health, university students, youth-friendly health.

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DEDICATION

Dedicated with love to my late father, Abdissa Gobena and brother, Tesfaye Abdissa who did not live to see me complete this study.

And

My loving wife, Tsehay Fentahun, and our lovely children, and my mother.

LIST OF ABBREVIATIONS

AAU: Addis Ababa University

AASTU: Addis Ababa Science and Technology University

AIDS: Acquired Immune Deficiency Syndrome

ASRH: Adolescent Sexual and Reproductive Health

AGREE-REX: Appraisal of Guidelines Research and Evaluation – Recommendations Excellency

APPLE USE: Accuracy and credibility, Privacy and confidentiality, Peer-to-peer engagement, Literacy of digital skills, Education and practice, Utilised student-generated content, Stakeholder collaboration, and Evaluation and monitoring information

BMC: Bio-med Central

CDC: Central Disease Control

DHS: Demographic Health Survey

DSM: Digital social media

DSNs: Digital social networks

ECC: Emergency Contraceptive

FHAPCO: Federal HIV/AIDS Prevention and Control Office

FHI: Family Health International

FMOE: Federal Ministry of Education

FMOH: Federal Ministry of Health

HIV: Human Immune Deficiency Virus

IEC: Information, Education, and Communication

KUE: Kotebe University of Education

PG: Postgraduate

RH: Reproductive Health

SRH: Sexual and Reproductive Health

STDs: Sexually Transmitted Diseases

STIs: Sexually Transmitted Infections

UNAIDS: United Nations Program on HIV and AIDS

UNFPA: United Nations Fund for Population Activities

UG: Undergraduate

UNICEF: United Nations International Children Emergency Fund

USAID: United States Agency for International Development

WHO: World Health Organisation

YSRH: youth sexual reproductive health

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CHAPTER ONE

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

Approximately 1.2 billion teenagers aged between 10 and 19 make up 18% of the global population, with the majority residing in underdeveloped nations (Setgn, Abile, and Melaku, 2013:186). Sub-Saharan African youth comprise 20% to 30% of this population (Wana, Roberts, & Kebede, 2019). In Ethiopia, more than 15.2 million youths aged between 15 and 24 account for 20.6% of the total population (Bizu, Aderaw & Kassa 2015:521).

In recent years, the rapid development and increasing popularity of social networking sites (SNSs) such as Instagram and Facebook, has been remarkable. Recent statistics suggest that 92% of adolescents go online daily, while 89% are members of at least one social network site, and 88% have access to cell phone (Cipolletta, Malighetti & Spoto 2020:6952).

In 2016, there were 2.34 billion social media users worldwide, with 22.9% of the global population utilising it the same year. Comparatively, in the United Kingdom, the average social media user spent 1.5 hours per day, while in the United States, the average daily social media user spent 1.7 hours online in 2015 (Andreassen, Kuss, Demetrovics, & Pallesen, 2016:252). Ethiopia had 23.96 million internet users in January 2021, accounting for 20.6% of the population, with 6.7 million actively using social media, which represented 5.7% (Digital 2021 Report).

Stronger social networks in low- and middle-income countries have been associated with better health outcomes, including improved memory (Perkins, Subramanian, & Christakis, 2015:78). Adolescents have been identified as early adopters of new technologies such as mobile phones and computers (Binu, Marama, Gerbaba & Sinaga 2018:10). Young people are the top subscribers to internet and mobile phone services, as well as active users of social media. They

also frequently use networked computer systems to enable data transmission and access services such as online chat, email, file transfer, linked web pages, and other World Wide Web documents. These tools are primarily utilized for sexual health information and social networking (Cipolletta, Malighetti, Cenedese & Spoto, 2020:952).

These significant and productive segments of the population are often exposed to various sexual and reproductive health risks, including pornographic content, engaging in premarital sexual activity, sexual coercion, early marriage or sexual debut, unplanned pregnancies, abortions, sexually transmitted infections (STIs), and HIV/AIDS (Carlos, Lopezdel & de Irala, 2019:398).

A study conducted on undergraduate students in Nigeria revealed that more than half of the respondents (64.9%) reported using social media, with many expressing interests in sex conversations and erotic movies, music, or pictures (Nwagwu, 2017:320). The majority of the respondents (80.1%) admitted to engaging in sexual activity, with 45.1% having their first sexual encounter between the ages of 10 and 14. Over half (52.7%) consented to sex willingly, while others reported instances of rape or being tricked. However, a large percentage (75.2%) admitted to not using contraception during sexual activity (Waldman, Ahmed & Rasheed 2018:16).

According to data from the Demographic Health Survey (DHS) (2019:22), Ethiopian adolescents have limited access to mainstream media, with over four out of five individuals aged 15 to 24 lacking regular access to newspapers, television, or radio (Habesha, Aderaw, & Lakew, 2015:12). The prevalence of internet addiction among Ethiopian adolescents was 35.2%, with severe addiction accounting for 1.8% and mild addiction for 33.4% of participants. Internet addiction rates were higher among female students compared to male students (38.3% vs. 33.4%) (Tilahun, 2021:10). The majority of Ethiopian teenagers spend between 30 and 60 minutes per session on social media, visiting it once every few days, which places them in the 'addicted' category (Asrese & Mekonnen, 2021:327).

Early sexual activity poses health risks for both young women and men, as the majority of the sexually active individuals aged 15 to 19 are unmarried (Taya, Belete & Astawesegn, 2018:11). In the Ethiopian society, sexual experiences typically begin at the age of 16, which is considered early. Considerably, rape is a prevalent issue among young women in both urban and rural areas (Hailegebreal

& Yibrehu, 2022:9). In a study conducted among adolescents from six peri-urban centres in Ethiopia, nine percent of sexually active young women and six percent of sexually active young men reported being raped, while 74% of the women said they experienced sexual harassment (OSSA and DSW, 1999; Nigatu, Seme & Segni, 2018:5-6).

Numerous empirical findings from studies in Ethiopia reveal that a high number of school children, approximately 77.2%, are exposed to sexually explicit materials through mass media and internet access (Habesha, Aderaw, and Lakew 2015:12; Mulisa & Getahun 2018:294; Asrese & Mekonnen 2018:7; Habesha et al. 2015:3). The lack of parental connectedness and the school's role in providing sexual and reproductive health education are often blamed for this. High-speed internet connections allow access to large amounts of data in a short time, potentially influencing the amount of sexually explicit content viewed (Asrese & Mekonnen 2018:7; Habesha et al. 2015:3).

A noticeable underuse of sexual reproductive health (SRH) services among school youths in Ethiopia has been reported by Tesso, Fantahun, and Enquselassie (2012:13). Regions like Nekemte, Mekele town, and Gojjam zone statistically reflect 21.2% of its population using SRH services, which confirms the minimal use of these services. This suggests that other means of sourcing information on sexual and reproductive health may be at play, which prompted the researcher to investigate the role that modern social media plays in youth sexual and reproductive health.

1.2 DESCRIPTION OF THE STUDY PROBLEM

Numerous studies have shown that social media negatively affects the sexual practices of the youth. However, social media communication has had a positive impact on knowledge dissemination in various aspects of life, including health (Panting, Abdullah & Ismail, 2019; Asrese & Mekonnen, 2021; Griffiths et al., 2015). While there is no specific study on social media usage patterns in Ethiopia, data from the DHS (2019) indicates that a large number of the youth are active users of digital social media, with most Ethiopian youths spending between 30 to 60 minutes per session on social media and visiting it once every few days. This is supported by studies on the prevalence of social media addiction among graduate students in Ethiopian universities (Asrese & Mekonnen, 2021; Wamano

et al., 2021), which reported a 35.2% prevalence of internet addiction, with higher addiction rates among female students. Pornographic content and sexting were common among university students and it impacts their sexual practices such as premarital sex, early marriage, unplanned pregnancies, abortion, and sexually transmitted infections, including HIV/AIDS.

While research in Western and Asian countries suggests a strong link between the exposure to sexually explicit content on social media and risky sexual behaviours, there is limited empirical evidence on this topic in Ethiopia. Therefore, this study sought to investigate the effects of modern social media on the adolescents' sexual and reproductive health in Ethiopia. Understanding the sexual and reproductive health patterns of university students about the digital social media (DSM) environment and the socio-cultural influences on their sexual behaviours could help in developing appropriate guidelines for health promotion programmes. This would empower and support the university youths' sexual and reproductive health and provide guidance on the responsible use of social media to reduce risky sexual behaviours among them.

1.3 THEORETICAL FRAMEWORK

This study was based on the Social Normative Theory by Perkins and Berkowitz (1986) and the Health Belief Model (Lapinski, (2005:68). This theory focuses on modifying behaviour by emphasising the environment and interpersonal effects, such as peers, which may be more effective than focusing on the individual (Wana et al., 2019:9). Building on these beliefs, this study explored how the social media environment impacts the students' sexuality and reproductive health. When addressing youth behaviour, peer influences and expectations are particularly important. Perceived norms, or what is considered usual or standard in a group, have a greater impact on peer influences than actual norms – the real beliefs and actions of the group. The core of the social norms approach is that the difference between perceived and actual norms is a misconception. A thorough discussion of this conceptual framework is provided in Chapter Two.

1.4 RESEARCH PURPOSE

The purpose of this study was to investigate the effects of digital social network utilisation on youth sexual and reproductive health in the public universities in Addis Ababa city administration, Ethiopia.

1.4.1 RESEARCH OBJECTIVES

The objectives of the study were:

Phase I: Quantitative phase

- To determine and describe information on sexual and reproductive health accessed using digital social networks by youth in public universities of Addis Ababa city administration.
- To determine the benefits and threats of digital social networks utilisation on youth sexual and reproductive health in public universities of Addis Ababa city administration.

Phase 2: Qualitative phase

- To explore and describe the experiences of students with the use of digital social networks for sexual and reproductive health in public universities of Addis Ababa city administration.

Phase 3: development phase

- To develop guidelines for digital social networks utilisation on youth sexual and reproductive health in public universities in Addis Ababa city administration.

1.4.2 RESEARCH QUESTIONS

The study answered the following questions:

Phase 1: quantitative phase

- What information regarding the sexual and reproductive health, is accessed by university students using digital social networks?

- What are the benefits and threats of using digital social networks for sexual and reproductive health by university students?

Phase 2:qualitative phase

- What are the experiences of university students with the use of digital social networks for sexual and reproductive health?

Phase 3:development phase

- What guidelines can be developed on the use of digital social networks in health promotion programme to empower university youths on sexual and reproductive health?

1.5 SIGNIFICANCE OF THE STUDY

The study provides insights on the influence of social media on young people's sexuality and they can be guided to use information from social media beneficially, thereby promoting the quality of their sexual and reproductive health. The guidelines developed from the study's findings are believed to assist in programme design aimed at promoting healthy sexual behaviour among university students to safeguard them from risky sexual behaviours. The study's recommendations shed light on guiding students to use social media information effectively to improve their sexual and reproductive health outcomes.

1.6 DEFINITIONS OF TERMS AND KEY CONCEPTS

- **Digital social networks**

Digital social networks are online platforms and applications that assist individuals or groups in creating, sharing, and communicating content. Through texting, sharing media, posting updates, and participating in discussions, these networks allow users to socialize, connect with others, and build relationships(Gulzar and Ahmed,2024:1)

- **Public universities**

Public universities, which receive the majority of their funding from the federal or state governments, play a crucial role in providing accessible education. This

funding model allows these institutions to maintain low tuition costs, making higher education more accessible to a broader population(Yan et.al,2023:10)

- **Sexual and reproductive health**

A state of total physical, mental, and social well-being, encompassing not only the absence of sickness or infirmity, but also reproductive health processes, functions, and systems throughout life (WHO, 2015)

- **Social networks**

Social interaction among individuals, in which they develop and exchange information and ideas in virtual groups and networks. Utilising digital media and web-based platforms allows the "users to actively share information, generate content, collaborate and interact with each other" (Rice & Haynes, 2016).

- **Social Networking Sites (SNSs)**

Websites that enable the formation of online communities and sharing user-generated content. The primary SNSs used in this study were Facebook, Twitter, Telegram, YouTube, and WhatsApp, which support conversations and information sharing on topics such as the use of condoms, sexual experiences, abortion, and changes during adolescence and social connections. (Shi, Poorisat, and Salmon 2018:56).

- **Youth**

According to the WHO the term 'young people' refers to persons aged between 10 to 24 years and the 'youth' as people aged between 15 to 24 years. In this study, these terms have been used interchangeably but often referring to the youth, adolescents, and young people (Ninsiima, Chiuma and Ndejjo (2021:17).

1.7 RESEARCH PARADIGM

A research paradigm is a theoretical framework comprising a set of assumptions and principles that guide how scientists and researchers construct knowledge and conduct research. It is a collection of the guiding principles for conducting scientific research based on an individual's ontological commitments, epistemological convictions, and methodological approaches (Allemang & Dimitropoulos, 2022:40). Adopting a paradigm enables the researcher to conceptualise their ideas regarding the nature of knowledge and choose the approaches that are most appropriate to answer their research objectives.

This study followed the pragmatism paradigm, as it utilised the mixed methods approach, where quantitative and qualitative data were collected consecutively (Creswell, 2018: 52). The foundation of pragmatism lies in the idea that the best approaches should be used to address real-world issues to allow gathering information from multiple sources in order to tackle the research concerns. This makes pragmatism suitable for multi-method research, which involves various types of quantitative or qualitative data, and mixed-methods research, which integrates both types of data into a single study. The pragmatist approach provides a framework for action-oriented research and encourages researchers to use the most appropriate methodologies for the topic at hand to address issues relevant to communities.

This study demonstrated that the mixed methods approach was effective in utilizing both quantitative and qualitative data collection methods to comprehensively understand the topic. The pragmatism paradigm enabled mixed methods researchers to employ a variety of approaches, diverse worldviews, varying assumptions, and different types of data and analysis. (van Schalkwyk, 2018:105).

Epistemological and philosophical assumptions, as well as the nature and sources of knowledge, depend on individual perspectives, and subjective evidence is gathered. Information is discovered through people's varying subjective experiences. Therefore, conducting research in the "field" where the participants reside and work is crucial for understanding their perspectives (Creswell & Johan, 2018:67). In the context of this study, data collection was conducted in the universities, which are the natural environments of the participants. Their subjective experiences regarding social media and sexual reproductive health were elicited through individual semi-structured interviews with the researcher.

1.8 RESEARCH DESIGN AND METHODS

The explanatory sequential mixed methods design was adopted in this study, which encompassed quantitative and qualitative data collection and analysis. The combination of different methodologies and data sources allowed for triangulation and validation of information, which yielded solid and dependable results. This study proceeded in the following three phases as presented in Table 1.1:

Table 1.1: Summary of Research processes

	Phase I	Phase II	Phase 3
Research objectives	To determine and describe information on sexual and reproductive health accessed using digital social networks by youth university in Addis Ababa city administration,Ethiopia. To determine the benefits and threats of digital social networks utilisation on youth sexual and reproductive health	To explore and describe the experiences university students use of digital social networks utilisation on youth sexual and reproductive health	To develop guidelines for digital social networks utilisation on youth sexual and reproductive health.
Approaches	Quantitative	Qualitative	Inductive and deductive reasoning
Populations	University students	Students and students' council	
Sampling methods	Stratified random sampling	Purposive sampling	
Data collection	Self -structural administrable questionnaires survey	In-depth face to face interview	
Data analysis	Using Statistical Package for Social Sciences (SPSS version 25) statistical software	Using Atlas Ti version 24 , thematically analysis	
Rigour and trustworthiness	Validity and reliability	Credibility, Dependability, Transformation, Conformability, Authenticity	

A more detailed discussion of this aspect will be provided in Chapter Three.

1.9 ETHICAL CONSIDERATIONS

Ethical considerations involve following the rules and standards of ethical conduct when conducting research that involves human subjects. Several authors outline the key ethical principles that researchers must follow throughout the research process (Burns & Grove, 2009:185; Polit & Beck, 2012:152). These include the three ethical principles identified in the Belmont Report, namely, the principle of beneficence, respect for human dignity, and the principle of justice. These are discussed in detail in Chapter Three.

1.10 SCOPE AND LIMITATIONS OF THE STUDY

Three public universities in the Addis Ababa Administration participated in the study. Research assistants were utilised for data collection, and a qualitative research specialist assisted with data handling. It is important to note that the results of this study may not be applicable on a broader scale due to the small sample size and the specific population constraints within a particular region of Addis Ababa.

1.11 THE STRUCTURE OF THE THESIS

The study is organised into the following eight chapters, with each chapter beginning with a brief introduction on the central theme and concluding with a summary:

Chapter One: Orientation of the study

This chapter provides the background information on the problem and presents the problem statement. It also describes the research purpose, objectives, and significance of the study. The concepts used in the study are clarified, the theoretical foundation of the study is discussed, and a brief overview of the research design, methodology, and scope of the study is provided.

Chapter Two: Literature review

This chapter delves into the theoretical and empirical literature surrounding youth sexuality and reproductive health promotion, as well as the barriers and influences of digital social network on their sexual and reproductive health. The chapter identifies

what is already known on the topic by reviewing various publications to assess the perspectives of other researchers and gain a deeper insight into the research topic. The theoretical foundation and model that support the study are also discussed, providing context and guiding the design on the appropriate data collection instruments.

Chapter Three: Research design and method

The chapter discusses the progression of the study initiative. It includes a detailed description of the research design and methodology which encompass the setting, population, sampling, and the data collection and analysis plan. Furthermore, it outlines the measures taken to ensure the trustworthiness, validity, and reliability of the study, as well as the ethical considerations adhered to.

Chapter Four: Analysis, presentation, and description of the quantitative findings

In this chapter, the researcher further details the data management and analysis of the findings. The quantitative data collected from the respondents is presented using frequency tables, bar graphs, and descriptive statistics.

Chapter Five: Analysis, presentation, and description of the qualitative findings

The chapter provides the reader with a comprehensive thematic presentation of the qualitative data, including the direct quotations from the participants. An integrated analysis of both the quantitative and qualitative data is provided, along an overview of the research findings in relation to existing literature. This chapter interprets and discusses the findings presented.

Chapter Six: Discussion of the integrated data from Phase I and Phase II with literature support

The chapter provides the reader with a comprehensive understanding of the integration of the two sets of the findings. This entails the similarities and differences of the findings supported by extant literature.

Chapter Seven: Proposed development of guidelines for the use of DSN network in sexual and reproductive health promotion in the university

This chapter discusses the development of guidelines for the use of digital social networks based on the major findings of the study, its theoretical basis, and how it could be utilised in promoting sexual reproductive health among university students. A detailed presentation of a proposed “APPLE USE” guidelines is also given.

Chapter Eight: Summary, limitations, and recommendations

The chapter provides an overview of the study, including its contributions and recommendations based on the findings, as well as the limitations.

1.12 CONCLUSION

This study was based on the background information gathered through a preliminary literature review. The study's significance, objectives, and research problem statement have been outlined. Key terminology and concepts have been defined and discussed, along the relevant theories that pertain the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews the extant literature on the topic to familiarize the researcher with the current knowledge base on the phenomena. A literature review provides a framework for understanding the significance of the study and a basis for comparing results with other research findings (Creswell, 2017:75).

The literature reviews cover a wide range of digital technologies and their applications, emphasizing how digital platforms can increase access to SRH services, improve knowledge, and impact youth behaviors. The reviews also address various barriers to sexual reproductive health utilization and target a diverse range of youth populations through digital social networks.

Methodology for searching peer-reviewed journals involved utilizing databases such as Google Scholar, PubMed, BMC Health Services Research, and the UNISA E-library. In addition, gray literature sources including books, journals, articles, monographs, government reports, and dissertations related to digital social media and youth sexual practices and reproductive health interventions were also searched. The studies included in the research focused on youth, typically defined as individuals aged 18 to 28, and encompassed diverse demographics such as gender, sexual orientation, socioeconomic status, and geographic location. Studies that did not center on youth or primarily involved other age groups (such as older adults) and research that focused on populations with specific healthcare needs unrelated to general youth sexual and reproductive health (excluding those with disabilities unless in a broader context) were excluded.

Data extraction was conducted using a template table or spreadsheet that included reference information, study characteristics, digital social media context, and sexual reproductive health focus, such as contraception, sexually transmitted infections, consent, and healthy relationships.

2.2 ADOLESCENTS AND YOUTH

According to the WHO, young people are defined as individuals between the ages of 10 and 24. The terms "young people" and "youth" (15-24 years) are often used interchangeably. The youth, who make up 25% of the world's population, are in a period of maximum health, with various physiological, psychological, and social changes that may expose them to risky sexual behaviors such as early sexual activity, unsafe sex, and multiple sexual partners (Rose, 2022:47)

In sub-Saharan Africa, the youth make up 20% to 30% of the population in countries like Ethiopia, where individuals aged 15 to 24 years old amount to more than 15.2 million, which account for 20.6% of the population (Wana, Roberts, & Kebede, 2019:351).

During puberty, young individuals experience physical and psychological changes which mark a developmental stage that is characterised by adaptation, vulnerability, and opportunity (Bizu, Aderaw & Kassa 2017:521). In many developing countries, young people are increasingly engaging in risky sexual behaviors during a period of exploration and experimentation, particularly in relation to sexual activity. These behaviors include early sexual activity, having multiple partners, engaging in unprotected sex, and having non-regular partners such as commercial sex workers (Kebede, Molla, & Gerensea, 2018:1-3).

Youth in higher education institutions come from diverse socio-cultural backgrounds and often experience autonomy for the first time at a young age, leading to participation in high-risk extracurricular activities like alcohol and substance abuse. The focus of the pandemic is on young people aged between 15 and 24, as they are among the most vulnerable populations globally (Kebede & Molla, 2018:10).

As young people begin to explore their identity, seek relationships outside the home, understand and experience their sexuality, and prepare for the job market, those with limited knowledge of sexual and reproductive health are more likely to engage in risky behaviors such as substance abuse, violence, and unsafe sexual practices, all which have significant public health implications (Asrese & Mekonnen, 2018:7-8).

Healthy young people are valuable assets who can make substantial contributions to their families, communities, and countries both now and in the future, serving as agents of social change rather than just recipients of social programs (Rice, Haynes, Royce, & Thompson, 2016:16).

2.3. YOUTH SEXUAL AND REPRODUCTIVE HEALTH SERVICES

Sexual and reproductive health (SRH) is crucial to public health and it significantly influences people's overall health and quality of life (Waldman, Ahmed, Scott, & Rasheed, 2018:3). The health of adolescents and young people is a cornerstone of public health worldwide, yet specific health issues among adolescents are often overlooked (Rice, Haynes, Royce, & Thompson, 2016; Zuo & Shah, 2018:15-16).

Studies indicate that with the right tools, young people can take control of their sexual and reproductive health. However, social, cultural, and educational inequities must be addressed for the young people to lead happy and healthy lives. Parental involvement and culturally sensitive program that provide complete and accurate information can greatly assist the youth in making informed decisions (Achora, Thupayagale-Tshweneagae, Akpor, & Mashalla, 2018:18). These groups of people are more susceptible to negative health outcomes, especially those related to sexual and reproductive health, as they are often disproportionately affected by social and economic injustices (WHO, 2011:12).

Though there may be differences in the cognitive, emotional, social, and physical development of teenagers, these differences can sometimes act as vulnerabilities that predispose adolescents to various mental disorders, both internal (anxiety, depression) and external (conduct disorders, aggression). Under normal circumstances, adolescents and young people must navigate crucial developmental challenges independently. These factors, combined with heightened emotional arousal, can impair rational decision-making (Furry, 2015:45). The accessibility of support in the immediate social setting and coping methods impact an individual's ability to deal with these obstacles.

As adolescents and young people transition from childhood to adulthood, they establish behavioral patterns and make lifestyle decisions that impact their present and future health. Serious health and safety issues such as traffic accidents, violence,

substance abuse, and risky sexual practices can have negative consequences on adolescents and young adults (Shantz, Alfes, & Whiley, 2016:137).

Many young people die prematurely from preventable or treatable illnesses, such as accidents, violence, suicide, and pregnancy-related complications, in addition to disabilities and chronic illnesses. Furthermore, numerous serious diseases that primarily affect adults first manifest in adolescence, such as substance abuse, STDs like HIV, unhealthy eating habits, a lack of exercise, and later-life illnesses or premature death (Ford & Zarbakhsh, 2016:124).

Young adults and adolescents are particularly susceptible to environmental stimuli and contextual effects due to their developmental stage (Wakjira, 2021:29). Family, peer groups, schools, neighborhoods, policies, and cultural influences are examples of environmental factors that can either promote or hinder the health and well-being of young people. Promoting positive development in young people makes it easier for them to adopt healthy habits and contributes to the creation of a healthy and productive adult population (McNeely & Blanchard, 2010:116). Additionally, youths are more likely to engage in risk-taking behaviours compared to adults or children (Schwarz, 2010:3).

Ethiopian adolescents and youth are particularly affected by HIV and issues related to sexual and reproductive health. Research indicates that these populations in Ethiopia are more vulnerable to various sexual and reproductive problems, including early marriage, sexual coercion, unintended pregnancies, abortions, and STDs (Woldie, Sudhakar, & Feyissa, 2015:28).

The Ethiopian youth have significant reproductive health needs and limited access to sexual and reproductive health information and services (Setgn, Abile, & Melaku, 2013:186). Despite decades of health initiatives, sexual health remains a significant issue for young people in Ethiopia, with up to eight percent of new HIV infections occurring in metropolitan areas. Teenage pregnancy is prevalent, with more than half of the girls giving birth to two children by the age of 18 (Olijira, Kaba, & Abera, 2016:23). A lack of awareness and knowledge among young people can lead to risky sexual behaviours, multiple sexual partners, and increased substance use. It is crucial for those who lack an understanding of sexual and reproductive health issues to

become informed and proactive about their sexual and reproductive health (Bizuwork, Hailu, & Taderegew, 2022:2-3).

2.4 ACCESS SEXUAL REPRODUCTIVE HEALTH SERVICES BY YOUTH

Universities are believed to be uniquely positioned to reduce the perceived barriers to accessing reproductive health services through technology, the promotion of health and wellness centres, and the addition of sexual and reproductive education to the general education curriculum (Bersamin, Fisher, Marcell, and Finan, 2017:159).

Globally, sexual reproductive health services are essential for reproductive healthcare and have helped millions of women and children to avoid death and protect their health (UNFPA, 2016:35). However, in many African countries, social-political, moral, and cultural networks make providing family planning services challenging. Around 14 million teenagers give birth each year, and more than 90% of these births occur in poor nations. In sub-Saharan Africa, teenagers use family planning services less frequently and are less knowledgeable about reproductive health services (WHO, 2017:58). Additionally, a significant portion of adolescents engage in coerced sexual activity or are forced into transactional sexual activity, with few options for self-defense (Cahill, Sonneveldt, Stover Weinberger, & Alkema, 2018:882).

A survey conducted in Ethiopia revealed that the youth's knowledge of contraception increased significantly between 2012 and 2014, particularly among those aged 15 to 19. However, more than three-quarters of the sexually active women aged 15 to 24 years have never used any contraceptive method. Generally, younger respondents (15 to 19 years) had less awareness about contraception than respondents above 20 years (Kusheta, Habtu, Helamo, & Yohannes, 2019:11).

Based on 2017 Ethiopian Demographic and Health Survey, 23% of the 15 to 19-year-old women currently use contraception with no permanent methods, while 1.6% and 2.5% use implants and intrauterine devices (IUDs), respectively. Compared to other age groups, there was lower contraceptive use. In similar study done among female undergraduate students at the Adama University in Ethiopia, 95.2% were aware of regular contemporary contraceptives, while only 10.2% had used them. However, only 31 students (4.7% of the class) reported using emergency contraception out of 309 students (46.8%) who had heard of it (EPHA 2021:19; Assefa, 2021:37). According to

data from the Ethiopia National Survey Growth(2019), 37% of the teenagers between the ages of 15 and 19 years used condoms for contraception. Condoms are the second most popular method of birth control in this age group, with breakage and slippage accounting for up to 6.7% and 6.4%, respectively, of condom failures. Forty-four percent of the sexually active teenagers between the ages of 15 to 19 years who use contraception opt for oral contraceptives, making them the most popular method (Tigabu Demelew, Sime, & Manyazewal, 2016:33). The majority of adolescents engage in unsafe sex and are sexually active, making them particularly vulnerable to problems related to sexual and reproductive health, such as unintended pregnancy, early childbirth, complications from unsafe abortion, and sexually transmitted diseases like HIV/AIDS due to inadequate sexual reproductive health services from providers (Kitaw & Haile, 2022:2).

2.5 CHALLENGES IN THE ACCESS AND UTILISATION OF YOUTH SEXUAL AND REPRODUCTIVE SERVICES

The factors that cause barriers to accessing youth-friendly sexual reproductive health services can be categorised into four groups, namely, personal or individual, structural, socioeconomic, and sociocultural (Ninsiima, Chiumia, & Ndejjo 2021:18). Individual or personal constraints include people's lack of information about sexual reproductive services and where to find them, their lack of self-efficacy and personal agency, limited ability to challenge the internalised social and gender norms, and incomplete or inaccurate knowledge about sexual reproductive health (Habtu, Kaba, & Mekonnen 2021:15).

Structural barriers refer to regulations that require parental or partner consent, the distance to facilities, cost of services and transportation, wait times for assistance, inconvenient hours, a lack of essential supplies at medical facilities, and the absence of privacy and confidentiality (Thongmixay, Essink, Greeuw & Broerse 2019:14).

Cultural barriers include stigmatising and restrictive norms surrounding adolescent and youth sexuality, unfair or harmful gender norms, and bias and discrimination from communities, families, partners, and health care providers. Socioeconomic barriers refer to the barriers that prevent individuals from lower socioeconomic backgrounds from accessing better sexual reproductive health services compared to those from wealthier backgrounds (Jacobs, Mwale, Mubanga, Kasond, & Munakampe, 2023:11).

- Individual barriers

One study assessed the impact of individual barriers such as knowledge, perception, shame, and stigma on youth-friendly sexual reproductive services. The study found that only 38.5% of the teenagers in South Africa and 21.5% in Ethiopia were aware of the types of youth-friendly reproductive health services available, based on a review of how often the youth utilise these services (Geary, Tollman, & Norris, 2014:7-8). Young people who did not understand the characteristics of teenagers and youth-friendly reproductive health services were less likely to use the programme than their peers (Binu, Marama, Gerbaba, & Sinaga, 2018:10).

More than two-thirds (79.5%) of the youth in Lagos, Nigeria (98.1%), in the port courtyard, and 67.3% in primary healthcare facilities in Ethiopia did not know about the specific youth-friendly reproductive health services provided in their healthcare facilities, according to high-quality studies that assessed knowledge as a barrier in those countries (Eremutha & Gabriel, 2019:42-43).

Individuals' perspectives, fear, shame, and stigma affected the youth's use of youth-friendly reproductive health services, which had a detrimental effect on those who thought these services might enhance their health. According to a survey, the participants in Ethiopia had the fewest misconceptions regarding sexual reproductive health, with the most notable being that, when compared to Rwanda, oral contraceptive pills cause sickness and sterility (Self, Misomali, Monjeza, & Kachale, 2018:8-10).

- Structural barriers

During a focus group discussion, participant views on provider attitudes to ward adolescents appeared contradictory. Studies from South Africa and Ethiopia predominantly addressed provider attitudes and the clinical setting as impediments to the adolescents' access to healthcare. According to the findings of one study, 30 Ethiopian health professionals expressed negative attitudes toward young people (Mulugeta, Girma, & Zerihun, 2019:34).

The views of medical professionals may also seriously limit the adolescents' use of reproductive health services (RHS). Health professionals must be welcoming and supportive of adolescents seeking care, and services must be delivered in a pleasant setting for young people. In addition, there are not enough qualified health

professionals to provide these treatments, as was found in a study in South Africa, Ethiopia, and Uganda (Rukundo, Abaasa, Natukunda, & Allain 2019:74-75).

According to surveys, the biggest obstacles to offering youth-friendly services, particularly healthcare for young people, were a lack of trained staff and a facility's inability to accommodate them in a separate area. Inconvenient operating hours, a shortage of transportation, and excessive service costs are just a few of the operational obstacles that health institutions face that affect access to and the use of these services (Helamo, Bancha, Habtu, & Yohannes, 2017:141).

- Cultural barriers

Cultural barriers, such as family planning, voluntary counselling and testing, and counseling services, were strongly correlated with social and cultural characteristics. A community cross-sectional study conducted in Kenya and Ethiopia showed that some cultures and parents forbade the youth from using youth-friendly reproductive health services, as these exhibited significant correlations (Ontario, 2015:34).

The participants in a survey conducted in Malawi claimed that parents disapproved of young people using family planning, might forbid their use of family planning services, and believed that children under 18 years should not engage in sexual activity. The youth should focus on finishing their education and refrain from engaging in sexual activity since they do not require family planning (Biddlecom, Munthali, Singh, & Woog, 2017:11).

- Socio-economic barriers

When requesting sexual reproductive health services from youth centers, adolescents and young people tended to favour low costs or no fees. In one district, certain government providers imposed costs for family planning for both the male and female youth. According to a high-quality study investigating the barriers and perspectives of the youth seeking family planning services, long distances and high transportation costs were other identified obstacles (Dennis, Cavallaro, Lynch, & Benova, 2017:10-11).

Studies conducted in Uganda, Kenya, and Nigeria also revealed that the cost of services was prohibitive for locals. In two studies conducted in several states of Ethiopia, the majority of the respondents (21%) and 41.2%, respectively, highlighted

the difficulty of the cost of services. The young people's lack of understanding of youth-friendly sexual reproductive health issues and access to reproductive health information is frequently hampered by various circumstances, including parental consent, the stigma associated with youth, and distance, cost, and service quality (Gebreselassie, Takele, & Kidane, 2015:203).

2.6 YOUNG PEOPLE RISKY SEXUAL PRACTICES

Risky sexual activity encompasses any action that increases the risk of negative outcomes from intercourse, such as HIV/AIDS or other STDs, abortion, or unintended pregnancy. This includes behaviors like having multiple partners, engaging in risky or unauthorised sexual activity with unknown or casual partners, initiating sexual activity prematurely, failing to discuss important topics with a partner before engaging in sexual activity, and not using protective measures like condoms and birth control (Kassa, Demelash, Mesele, & Ayehu, 2016:34).

Private and complex sexual behaviour is influenced by various social, cultural, moral, and legal factors. Since the 18th century, academic studies on sexual behaviour have utilised medical, psychological, and anthropological approaches. However, interest in this subject grew significantly in the 1990s as public awareness of HIV risk expanded (Abera, Kedir, Rasha, Woiynshet, & Brehan 2018:442).

Sexual risk is a complex issue, with characteristics that are difficult to evaluate. It has been established that interpersonal, societal, and economic factors impact the prevalence of risky sexual activity, making diagnostic and therapeutic program for risky sexual behaviour more complicated (Dadi, & Teklu, 2014:416). While sexually transmitted diseases affect individuals of all ages, they have a significantly negative impact on adolescents and young adults. Teenagers aged 15 to 24 represent slightly over one-quarter of sexually active individuals but account for half of the 20 million new sexually transmitted cases that occur in the US each year (Kortsmit, Jatlaoui, Mandel & Whiteman, 2018:69).

Young people begin to question their identities, seek connections outside of their families, start to understand and experience their sexuality, and prepare for the workforce. Youth often engage in risky behaviours, including drug use, aggression,

and unsafe sexual activity, which pose serious public health concerns (Griffiths, Dobermann, Cave & Goudge, 2015:473-475).

Youngsters face numerous risks to their sexual and reproductive health due to early, unsupervised, or unwanted sexual encounters. The lack of accessible, affordable, and appropriate contraception services, as well as research on sexuality that could inform evidence-based interventions to enhance sexual and reproductive health globally, are major contributing factors to these risks (WHO, 2012; Westrick, Marini, & Shaw, 2019:39). Individual, peer, family, school, neighbourhood, and societal levels all influence the behaviour of young people.

In recent years, sexual behaviors by adolescents and the youth have been deemed the primary health priorities in any society due to the increasing prevalence of STIs, HIV/AIDS, and unintended pregnancies, which are reported annually (Violita & Hadi, 2019:7). Those working to improve the health of the population are deeply concerned about STIs in general, and among adolescents in particular. The age group '15 and 24 years' has the highest reported incidences of STDs globally, accounting for up to 60% of new infections and half of all HIV-positive individuals worldwide (Newton-Levinson & Chandra-Mouli 2017:319). A multi-partner collaborative effort is necessary, as various societal spheres influence the health, safety, and well-being of adolescents. These joint initiatives can also help in developing a more comprehensive approach to addressing the health of young people, viewing each teenager as a whole person and leveraging their strengths rather than solely focusing on the risks (Weiss, & Ferrand, 2019:393).

Risky sexual behaviors are highly prevalent among American college students (Isaac Chun-Hai, 2019). Over half of the teenagers (56%) aged 13 to 17 are online multiple times a day, with almost all (94%) using social media sites. Additionally, a study revealed that young Americans now prefer Instagram (76%) and Snapchat (75%) as their social media platforms of choice. More research is needed on the social activities of this age group in other regions of the world. A study on technology usage among young European youths aged 16 to 24 showed that approximately 88% of European Union citizens use social networks (Waldman, Ahmed, & Rasheed, 2018:15-16).

Annually, around 500 million new cases of STDs are reported globally among individuals aged 15 to 49, excluding those with HIV and other sexually transmitted

illnesses. In Indonesia, risky adolescent behaviour typically begins with dating between the ages of 15 and 19, with relatively high rates of 33.3% for girls and 34.5% for boys. In 2015, it was reported that 8.26% of adolescent boys and 4.17% of girls in the cohort had engaged in premarital sex (Violita, & Hadi, 2019:6-7).

A study conducted with secondary school students in Nigeria in 2015 revealed that about 56.3% of female and 26.5% of male students acknowledged that watching sex scenes on television influenced their sexual behaviour (Nwagwu, 2017:56). Despite the belief that the media aids young people in socialising sexually, only a few utilise the resources available to them for their reproductive health. Research in Ethiopia found that 62.8% of adolescents aged 15 to 24 had never utilised adolescent reproductive health services. Several factors that influence the low utilisation rates of reproductive health services by adolescents include knowledge, individual perceptions of susceptibility, severity, and seriousness, perceived benefits and barriers, and support from family and peers (Asrese & Mekonnen, 2021:225). A study in North-east Ethiopia showed that early sexual relationships were linked to watching pornography movies. For the youth who viewed such content before the age of 18, the likelihood of engaging in relationships was 2.9% higher than those who watched it after turning 18 (Bizu, Aderaw, & Kassa, 2015:521).

In Ethiopia, a significant percentage of young people engage in risky sexual behaviors, such as early sexual initiation, multiple partner relationships, unprotected sex, and transaction sex. Rape is prevalent among young women in both urban and rural areas. In a study among adolescents from six peri-urban centers in Ethiopia, 9% of sexually active young women and 6% of sexually active young men reported being raped, with 74% of women experiencing sexual harassment (OSSA & DSW, 1999; Nigatu, Seme, Fituma, & Segni, 2018:5-6).

Awareness of AIDS among young people in Ethiopia is high. However, one in four young women and more than one in ten young men have never heard of the disease or do not know if it can be prevented. Only 2% of young women reported using a condom during their most recent sexual encounter, although 45% are aware that it protects against HIV (Shimie, Gashu, Shiferaw, & Mengiste, 2022:11). A study in Hawassa, Ethiopia, found that 77.2% of school youth were exposed to sexual content, with 70.4% reporting no open discussions on sexual issues within their families and

lacking sexual and reproductive health education at school (Habesha, Aderaw, & Lakew, 2015:11-12).

Studies in Ethiopia indicate the low utilisation of sexual reproductive health services among school youths, with rates of 21.2% in Nekemte town similar to Mekele Town and Gojjam zone (Binu & Sinaga, 2018:9-10). A survey of university students in Ethiopia found that more than 90% had never been tested for HIV. Young women aged 15 to 24 make up a slightly higher percentage of those who have received test results compared to older women aged 25 to 49 (Muntean, Kereta, & Mitchell, 2015:99). Similar findings were reported in a survey of university students in Ethiopia, where 11.5% of the sexually active individuals reported symptoms of sexually transmitted illnesses (Wachamo, Tegene, Tibeso, & Washo, 2020:20).

2.7 DIGITAL SOCIAL NETWORK UTILISATION AND SEXUAL REPRODUCTIVE HEALTH OF THE YOUTH

University students' perceptions and use of DSN regarding their sexual reproductive health are influenced by various factors. Research indicates that youths who are exposed to sexual content on social media may come to accept misinformation about consent, which could be harmful (Smith, 2021:17). However, studies conducted by Suyanto (2021:272) and Eleuteri, Saladino, and Verrastro (2017:354) have shown a positive relationship between social media exposure and sexual behaviour among the youth. Understanding and addressing university students' behaviour in relation to sexual reproductive health in the digital age is crucial. It is essential to consider the impact of social media exposure, content, and platforms on their attitudes and actions (Findley, de Rutte, & Dennis-Tiway, 2022:39).

Social media is the term used to describe human interactions in which individuals build and share information and ideas in online communities and networks. Users can actively share information, create content, cooperate, and communicate with one another through digital media and web-based platforms that are accessible through mobile and computer technology (Rice & Thompson, 2016:16). Social networking services allow users to create public or semi-public accounts, which can be linked to other profiles to create a personal network (Sampasa-Kanyinga & Hamilton, 2015:710).

New digital technologies that have changed networking, communication, and nature are rapidly changing the planet. It is crucial to comprehend how various people use digital technologies and social media before looking into how they could improve social and health results. Over the past several years, SNSs like Facebook and Instagram have experienced a fantastic surge in popularity and use. In 2004, Facebook launched as an online community for students at Harvard University, and since then, it has expanded to become the most widely used social networking platform (Yampinij, Sangsuwan, & Chuathong, 2012:374). Youngsters now frequently visit Facebook because of the instantaneousness which it permits online (Wang & Singhal, 2016:106).

In 2016, there were 2.34 billion social media users worldwide, and 22.9% of the people on the planet utilised it the same year. In comparison to the UK, where the average social media user spent 1.5 hours per day, and in the US, the average daily social media user spent 1.7 hours online in 2015 (Andreassen, Kuss, Demetrovics, & Pallesen, 2016:252). In Ethiopia, 23.96 million people used the internet in January 2021. This number increased by 2.8 million (+13%). Furthermore, 20.6% of people had access to the internet in January 2021, and 6.7 million active users of social media users rose by 500 trillion (+8.1%). For 5.8% of the population, mobile connections increased by 710 trillion (1.6%) to reach 44.86 million in 2021 (Digital 2021 Report).

Social network users frequently use additional forms of informal social control, such as constructing constrictive normative environments, prohibiting particular actions, and more, to manage sexual activity. According to earlier research, adolescents are more inclined to participate in sexual behaviors if they believe that their friends are doing it (Setianti, Dida, Puspitasari, & Nugraha, 2017:28).

The study of health communications focuses on using communication strategies to enlighten individuals and communities about their health and persuade them to make the best health management decisions. Today's internet world has easy access to health information. Youngsters in Ethiopia are more aware of health issues due to the internet's quick development, particularly their social media usage (Habesha, Aderaw, & Lakew, 2015:12).

With the growth and popularity of SNSs, such as Instagram and Facebook, recent data suggests that 92% of youngsters who go online every day, 89% of them are members

of at least one social networking site, and 88% of them have access to a mobile phone (Collette, Malighetti, & Spoto, 2020:6952).

Mass media, particularly the internet, is one of the most popular ways that young people get sexual information, with an increasing proportion of young people engaging in online pornography. Given that early exposure to pornography is a substantial risk factor for problematic sexual behaviour, early diagnosis of indicators of sexual material intake and exploration of the drivers of this behaviour are critical (Khaleghi Kia-Delhi, 2016:212).

Recent studies have found that the internet, in particular, is one of the most popular sources of sexual knowledge for young people, with a growing number of them engaging in online pornography. Early detection of signs of sexual material intake and investigation into the causes of this behaviour is crucial, given that early exposure to pornography is a significant risk factor for problematic sexual conduct (Teferra, Erena, & Kebede, 2015:20).

Young people spend an average of nine hours per day connected to media and sending or receiving an average of between 20 and 80 text messages per day. They increasingly use online social networking technologies, such as Facebook, to learn about their peers' attitudes and behaviors. These virtual networks influence health behaviours (Kaya & Bicen, 2016:374).

According to statistics from the National Adolescence Observatory (2018), over half (54%) of the Italian youth use the internet to check their social accounts, and 94% of them use it to chat with friends. Youngsters often check social media postings at the start and end of the day. Therefore, social media has grown to play a crucial role in the social structure that supports the youngsters' healthy lifestyles (Perkins, Subramanian, & Christakis, 2017:60-63).

According to the social network literature on sexual behavior, the current study aimed to determine whether the images shared on social networking sites (SNSs) could influence people's perceptions of social norms and their intentions towards sexual health behavior. These images act as informational resources on specific sexual practices, potential partners, and often facilitate connections with future sexual partners.(Asrese & Mekonnen, 2018:8).

Social media has legal and ethical issues, even if it can be helpful for students and professionals. When people use social media inappropriately and irresponsibly, they peril themselves, their employers, and organisations like tertiary education institutions and healthcare facilities. The inappropriate use of social media may also impair one's integrity, nurse-patient connections, nurse-colleague relationships, and present and future employment possibilities (New Zealand Nurses Organization, 2021). Institutions, academic bodies, and teachers should think about privacy and internet security threats while designing social media use policies (Nyangeni, Rand, & Van Rooyen, 2015:9).

New media has sparked a revolution in the medical industry, as clinicians and laypeople alike use social media and the internet as resources for delicate medical concerns. Social media usage in health requires more research because of the consequences on the general public's awareness of health issues (Avcı, Çelikden, Eren, & Aydenizöz, 2015:6). Youths balance self-preservation and sexual health discussion on social media by navigating the risks and benefits of online platforms. While social media can be a valuable tool for sexual health education, it also poses risks that need to be addressed through responsible use and effective health education strategies (Van Ouytsel, Walrave, Ojeda Del Rey, & Ponnet, 2020:8106).

2.8 THEORETICAL BASIS OF THE STUDY

A theoretical and evidence-based strategy that has recently gained more attention for addressing health issues is the foundation in "Social Norms" (Berkowitz, 2003:164).

The youths' use of DSN can be greatly influenced by the Social Normative theory, which utilises perceived social standards to encourage positive behaviour and deter negative actions, with peers playing a significant role in youths' decisions (Katja, Rost, Stahel, & Bruno, 2016:10). This strategy can be particularly effective because the youth can engage with social media healthily and more responsibly if guidelines are developed to address the misconceptions about peer behaviour through understanding and implementing the Social Norms Theory (Gerard & Anna, 2013:8). Descriptive and injunctive norms are the two primary categories of social norms that make up the social norms approach (Perkins, 2002:164). A person's behaviour can be greatly influenced by their perceptions of others and their beliefs about the potential consequences of their actions (Lapinski, 2005:68).

According to the Social Norms Theory, our intentions, behaviours, and beliefs are influenced by perceptions, whether accurate or not, of how other people behave. This phenomenon is rooted in the social norms approach, where individuals' behaviours are shaped by their perceptions of what is typical or acceptable within their peer group (Raisamo & Lintonen, 2012:37). Exposure to descriptive and injunctive norms on social media affects the youths' actions, attitudes, and perceptions of non-normative behaviour which is positively associated with the adolescents' engagement in deterring non-normative behaviour (Jeong & Khang, 2023:54).

This study was organised based on the Social Norms Theory (Perkins & Berkowitz, 1986) which predicts that the guide to correct misconceptions by revealing the actual, healthier norm will have a beneficial effect on most individuals. They will either reduce their participation in potentially problematic behaviour or be encouraged to engage in protective, healthy behaviours (Nova & Yuliati, 2019:194).

The goal of the study was to understand the effects of social media on students' sexual and reproductive health. According to the Social Normative Theory, when students use social networking sites to find health information, "abnormal" social networking activity occurs due to the expectation of positive outcomes (Emmanueli, Achampong, & Mahamadu 2020:35). Additionally, social networking sites can also facilitate dangerous sexual activity among the youth (Wayne, 2019:9). These factors can guide the development of guidelines aimed at reducing risky behaviours and improving reproductive health outcomes for university students.

2.9 CONCLUSION

The literature survey focused on the concepts of 'adolescents' and 'youth', the barriers to youth sexual reproductive health, as well as the influence of DSN use on sexual and reproductive health. The study also examined the sexual reproductive health risks that occur because of being a university student. The theoretical basis and model of the study were also outlined. Previous strategies used in universities for the promotion of youth sexual reproductive health (YSRH) were reviewed, along with previous studies to explore findings that are generally applicable. These findings were practical in guiding the study in the development of a "programme of health promotion services." Chapter Three discusses the research methodology in detail.

CHAPTER THREE

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

This chapter provides a comprehensive description of the research design and methods used to achieve the purpose and objectives of the study and to answer the research questions. It discusses the study population, sampling, data gathering methods and processes, ethical issues surrounding data collection, data analysis methods, as well as the reliability and validity metrics for the study's quantitative and qualitative components.

3.2 RESEARCH OBJECTIVES

The first and second objectives of this study were to quantitatively determine and describe the information on sexuality and reproductive health accessed by university students through digital social networks. The third objective aimed to qualitatively explore university students' experiences in using digital social networks to access information about their sexuality and reproductive health. The final objective was to develop guidelines for a health promotion program that empowers university students on sexuality and reproductive health through the use of digital social networks.

3.3 RESEARCH DESIGN

A research design is the structural plan that outlines the methodology and framework for conducting a research study. It serves as a blueprint for collecting, measuring, and analysing data to answer specific research questions or hypotheses (Mosby & Geri, 2017:164).

3.3.1 MIXED METHODS RESEARCH

Mixed-methods research involves gathering quantitative and qualitative data and integrating the two data types. The fundamental premise of this type of research is that combining qualitative and quantitative data offers additional knowledge beyond what either quantitative or qualitative data alone can provide (Creswell, 2018:44). In a mixed methods study, researchers can examine causal effects in a quantitative component

but shed light on causal mechanisms in a qualitative component (Beck, Cheryl & Pilot, 2018:309).

In this study, the sequential explanatory mixed method design was employed. This design is particularly beneficial for exploring complex phenomena, where initial quantitative results require further explanation through qualitative insights (Livingstone, Divine, & Caesar, 2024:10). The process typically begins with the collection and analysis of quantitative data, followed by qualitative data collection to explain or expand upon the initial findings.

The reason for using the mixed-methods design is that combining the qualitative and quantitative designs would address the research problem from different perspectives. Drawing from the strengths of both qualitative and quantitative research, the limitations of both approaches can be minimised (Cresswell, 2018:357). In this study, the researcher was able to obtain a complete understanding of the effects of digital social network utilisation from the university students quantitatively and also explore their experiences qualitatively in order to inform the guidelines to be developed for health promotion programs on the sexual and reproductive health of the students.

Despite significant advantages of mixed-methods research which allow the researcher to gain better understanding of the research problem, address the weaknesses of each approach, and apply different worldviews and methodological triangulation, the method is fraught with challenges. The requirement for substantial data collection, the time-consuming nature of assessing both qualitative and quantitative data, and the demand that the researcher be knowledgeable about both quantitative and qualitative types of study are some of the challenges that this kind of research presents to the investigator (Beck, Cheryl, & Pilot, 2018:309). These challenges were addressed in this study through expert guidance from the promoters, careful planning, and following the correct methodology to ensure rigour in the research process.

3.3.2 EXPLORATION

When limited information is available about a phenomenon, exploration is conducted to fully understand it (Polit & Beck, 2016:67; Schmidt & Brown, 2017:149). In this study, the exploration of students' experiences with using DSN sought to understand the impact of these platforms on their sexuality and reproductive health, knowledge,

values, and beliefs. Examining their perceptions of the benefits and risks of using digital social network provided comprehensive data to use as guiding information in the development of guidelines for health promotion programs.

3.3.3 DESCRIPTION

According to Schmidt and Brown (2017:152), the descriptive design helps the researcher to identify and describe the features of the phenomena. The objective of the description is to precisely express the size, variability, and importance of a scenario regarding phenomena. This is done by describing the findings using averages, standard deviations, and the range of scores being researched (Cresswell, 2018:398).

To create a description of a phenomenon on the university students' sexual and reproductive health, a comprehensive and accurate description of the opinions of university students on the information accessed in digital social network sites is provided. Additionally, the reasons why students use and access digital social network sites are discussed, along with the prevalence and nature of specific actions. A synthesis of the combined evidence from the two phases is further presented to develop and validate guidelines aimed at improving educational programs to educate university students on sexuality and reproductive health.

3.3.4 CONTEXTUAL

According to Terre (2016), it is essential to examine phenomena in their natural environment in order to interpret the research results accurately. Therefore, this study focused on the impact of the research environment at an academic institution in Addis Ababa, Ethiopia. This institution has a large number of postgraduate and undergraduate students, as well as a diverse faculty. The study considered factors such as the availability of 5G networks and complete internet coverage.

3.4 STUDY SETTING

Three public universities, namely, University A, University B, and University C, located in Ethiopia's Addis Ababa municipal government were the research setting for this study. These educational institutions are located in Addis Ababa, Ethiopia, as shown in Figure 3.1.

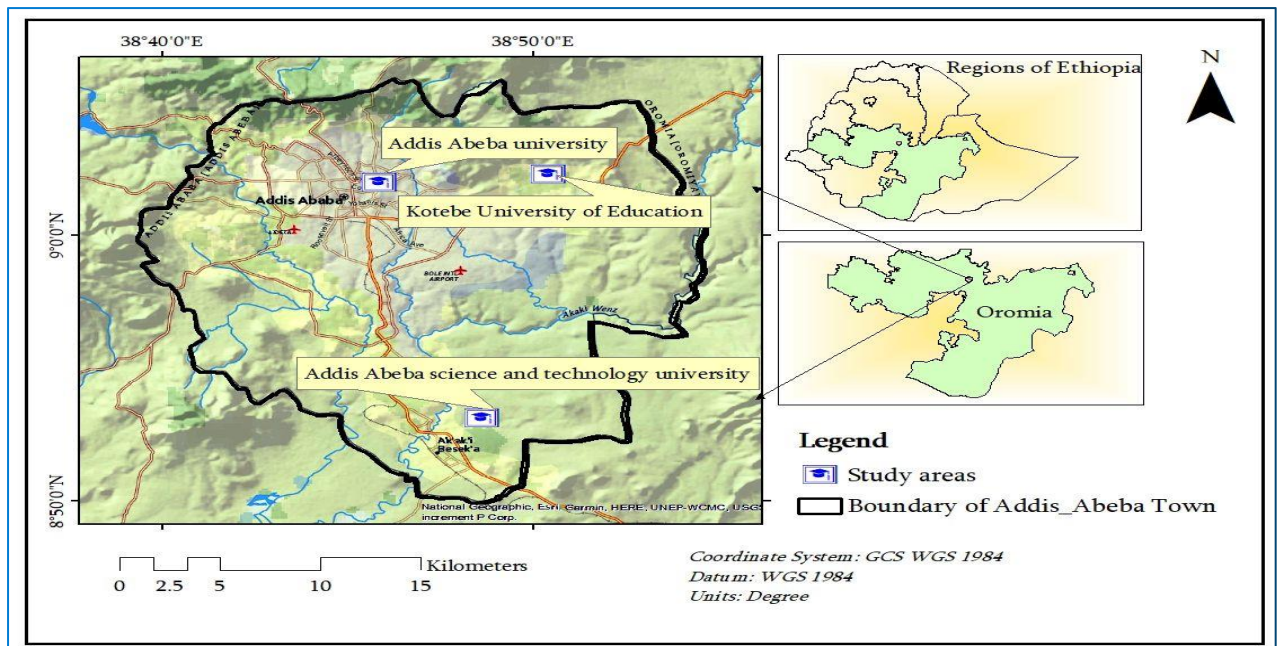


Figure 3.1: Geographical locations of research sites where data was collected in the Addis Ababa city Administration

3.5 RESEARCH METHODOLOGY

The mixed sequential explanatory design was utilised in this study. This design is a research approach that combines quantitative and qualitative data collection and analysis in two distinct phases. The study evolved in three phases as shown in Figure 3.2 below.

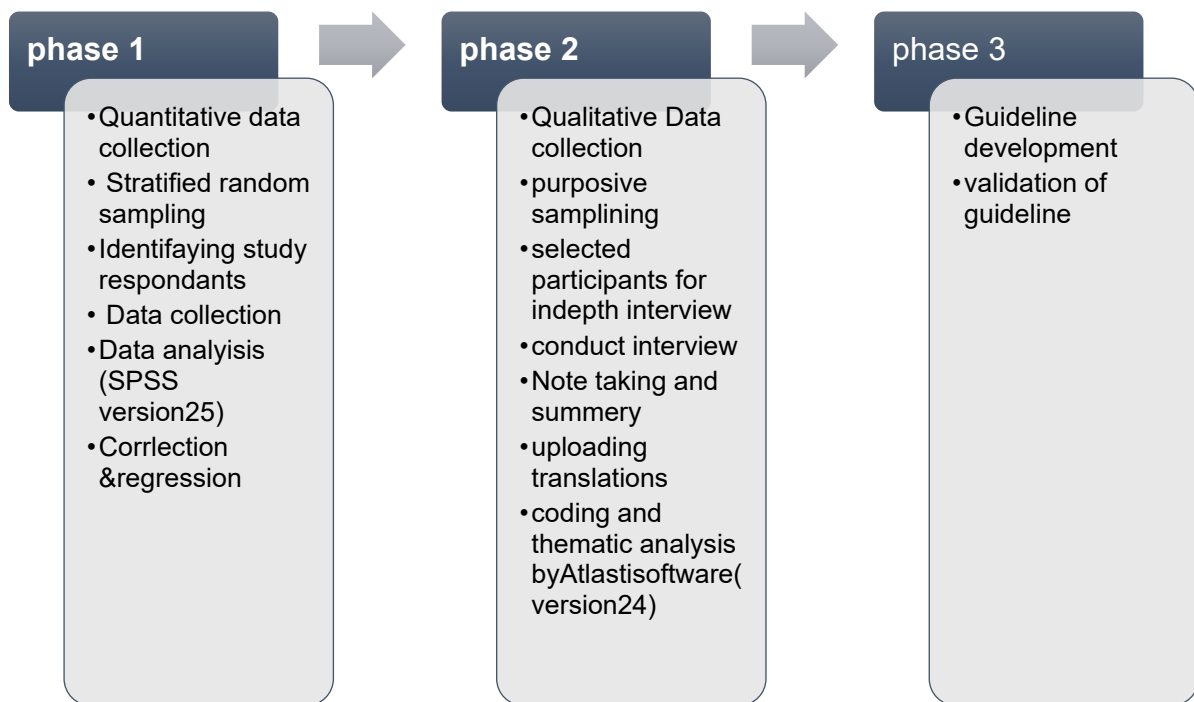


Figure 3.2: Visual model of this research procedure.

- Phase 1: Quantitative phase
- Phase 2: Qualitative phase
- Phase 3: development phase

3.5.1 PHASE 1: QUANTITATIVE RESEARCH

Quantitative research, which aims to prove, invalidate, or reinforce existing hypotheses, utilises deductive procedures in the research process. This type of research involves measuring variables and testing them to identify patterns, correlations, and causal links. By using linear data collection and processing methods, researchers can analyse statistical data. Key values of quantitative research include objectivity, neutrality, and gathering a wide range of information such as a statistical overview from a large sample. This approach is ideal when the primary goal is to explain or evaluate (Patricia, 2017:23).

A survey design is a flexible approach, with a broad scope for gathering information about the prevalence, distribution, and interdependence of phenomena within a study population (Clifford & Patricia, 2017:20).

In light of life events, relationships, and other risk factors, this study aimed to identify and characterize the types of social networks and information that college students use. It also aimed to determine how these factors influence or contribute to risky sexual behaviors over time.

3.5.2 METHODS

3.5.2.1 THE POPULATION

A population is the complete group of interest, consisting of all elements that are the main focus of the study and may ultimately form the study's target population. The total population of interest is known as the target population, while the accessible population refers to the portion of the target population that the researcher can access (Beck and Denise 2018:243). The study populations consisted of under graduated postgraduate students from three universities (A, B, and C) in the Addis Ababa city administration.

3.5.2.2 SAMPLE AND SAMPLING PROCEDURE

Sampling is the process of choosing a population subset to represent the overall population. Furthermore, a subset of population elements (Denise & Polit 2009:307).

- **Sampling research sites**

In this study, the researcher first sampled the research sites from the public universities within Addis Ababa city administration, Ethiopia, Using a list of public universities obtained in the education office of the Addis Ababa city administration as a sampling frame, three public universities were randomly chosen for the study. Given the study's broad scope, the sample of research settings reflects the study's purpose and objectives. The sample includes a mix of undergraduate and postgraduate students from metropolitan regions, allowing the researcher to delve deeper into the phenomena. This approach is believed to offer a comprehensive understanding of how young people thrive in these environments in relation to social and digital networks, as well as risky sexual behaviour.

- **Sampling study participants**

Simple stratified is a method of sampling that involves dividing a population into distinct subgroups or strata based on shared characteristics before randomly selecting sample from stratum (Cresswell, 2018:98). The researcher used the stratified random sampling method to select a sample of participants to represent the entire faculty at the universities. In stratified random sampling, the population is divided into strata or subgroups which are homogeneous subsets based on their proportion in the population, and study subjects are randomly selected.

From the three government universities chosen at random, the sample size proportional to the student population of each university was selected as follows:

- i. University A: 232 students from a population of 22940 students.
- ii. University B: 101 students from a population of 10000 students.
- iii. University C: 80 students from a population of 8000 students.

The sample is then distributed proportionately to each university's student population to recruit subjects from each faculty. Programme or schools were randomly selected from each faculty, and study subjects were chosen using the lottery technique. The randomly selected students remained in their classes on the day of data collection.

A representative sample is drawn based on sampling criteria, which are defined by Burns and Grove (2009:344) as qualities that must be present for a person to be considered part of the target population. The sample is drawn from the accessible population within the target group, as these criteria define the target population. This sample consists of individuals present on campus on the specific day and time of the study.

The sample size is determined by using a single proportion for a finite population, with assumptions of 95% confidence level, marginal error (d) of 5%, and the prevalence (P) of 50% for the quantitative data and qualitative sample size depending on the saturation of the data.

The sample size (n) is calculated according to the formula

$$n = \{z^2 * p * (1 - p) / e^2\} / [1 + (z^2 * p * (1 - p) / (e^2 * N))]$$

Where: z = 1.96 for a confidence level (α) of 95%, p = proportion (expressed as a decimal)

N = population size, e = margin of error

$z = 1.96$, $p = 0.5$, $N = 40940$, $e = 0.05$

$n \approx 413$

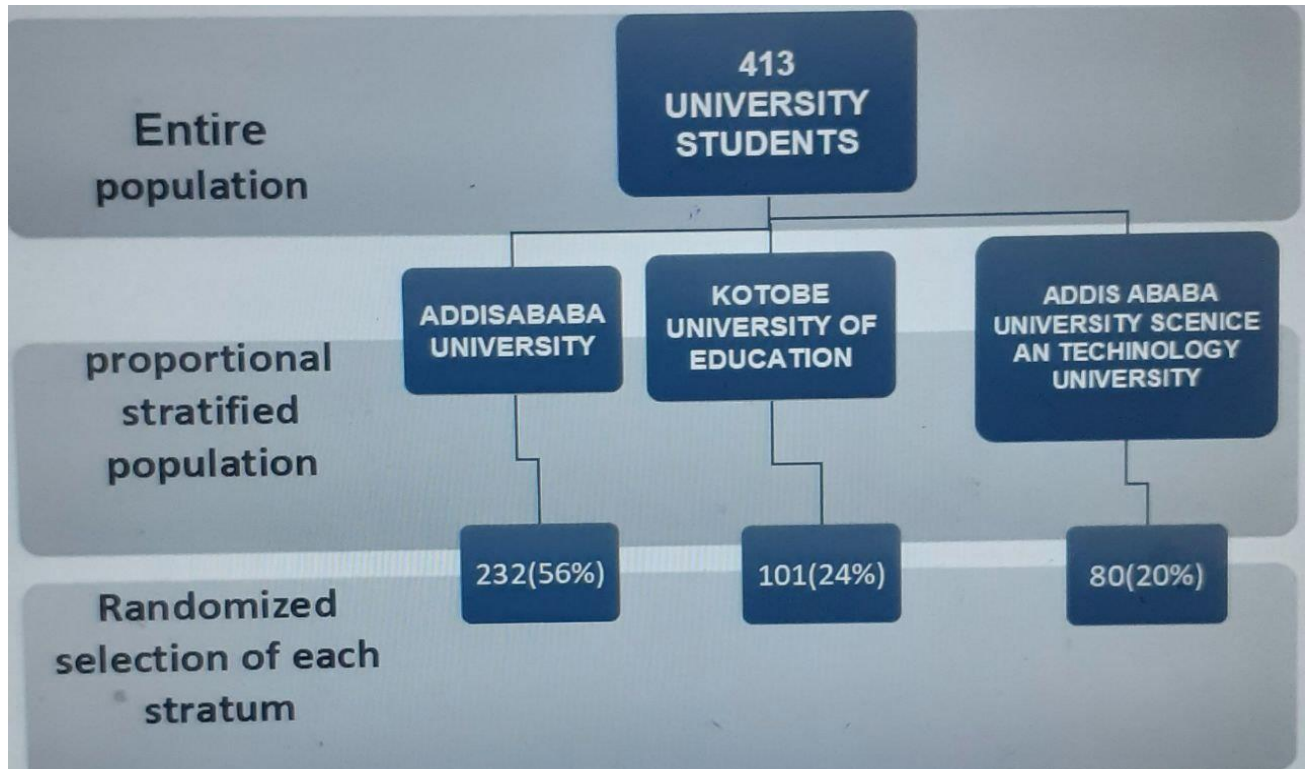


Figure 3.3: Sampling distribution of the study participants in a public university in Addis Ababa city administration, Ethiopia

- Inclusion criteria

The respondents included in this phase of research met the following sampling criteria:

- Registered students at selected universities in the Addis Ababa city Administration.
- Be in the 1st to 4th year of study.
- Willing to participate voluntarily in the research.
- Ability to read and understand the consent letter to facilitate informed consent or obtain permission through parental assent.

- Proficiency in speaking and understanding both English and the local language.
- Age greater than 18years.

3.5.2.3 DATA COLLECTION AND DATA COLLECTION METHOD

Data collection involves a series of interconnected steps aimed at gathering information to answer the research questions (Creswell, 2018:365). Structured self-reports are frequently used as data-collection tools in quantitative research. For this study, data were collected using a pretested semi-structured self-administered questionnaire. The questionnaire included social media questions adapted from the Pew Internet Project's Teen Survey, as well as sexual behaviour questions adapted from the US Department of Health and Human Services Office of Adolescent Health and the CDC Youth Risk Behaviour Surveillance Survey (Fowler, 2008:78). Additionally, vast literature sources were reviewed to refine the instrument.

- Data Collection Instrument: The Questionnaire

Schmidt and Brown (2017) describe the questionnaire as an affordable, structured self-report tool that can quickly and efficiently collect numerical data from many respondents. This type of instrument gathers experiences on how respondents perceive, value, and believe the phenomena (Polit & Beck, 2018:369). The primary goals of Phase I were to collect data on the respondents' socio-demographic traits, the type, frequency, and duration of the use of social networking sites, sexual and reproductive information accessed in these sites, and the level of sexual and reproductive health awareness. The purpose of including this biographical data was to investigate the potential relationships between the sociodemographic characteristics of the respondents and their attitudes towards using DSN for sexual reproductive health. A sequential explanatory mixed-methods approach would gather data in this manner as it builds on one piece of data after another (Creswell & Plano Clark, 2017:121).

While there are benefits to this type of data collection, when using a questionnaire, drawbacks such as low response rates, providing socially acceptable answers, and misinterpreting questions should be considered (Brink, 2017:153). The researcher employed several tactics to increase the response rate, including making phone calls, sending emails, and following up with the colleges.

- Recruitment of respondents

This study involved 413 students from three universities using the systematic stratified sampling methods. The participants were selected from various integrated programs, including both undergraduate and postgraduate students. In addition to addressing these design concerns, the researcher found that the questionnaire's design was improved with the help of professional guidance from the promoters and statistician, as well as through pre-testing the instrument.

- Pretesting the instrument

Pretesting an instrument is crucial in identifying the flaws in phrasing and deadlines (Gao & Brink, 2017:170). In this study, the questionnaire was tested with 36 Civil Services university students (5% of the sample size), who were not selected for the research. From the observable results, appropriate modifications were made to the instrument's language, content, and reliability scale. The Cronbach Alpha value was 0.8.

- Contents of structural questionnaire

The questionnaire was divided into four sections, as described below in Table 3.1. The majority of the questions were closed-ended, with some accompanied by multiple-response questions. The questionnaire consisted of statements or questions with a positive orientation that required a rating on a Likert scale from one to five. One represented "strongly disagree," and only one alternative was allowed.

Table 3.1: Composition of quantitative questionnaires

Sections	Addressed items
Section1 Items 01-09	Socio-demographic data Age, gender, marital status, parents' level of education religion
Section2 Items201-214	Network & health information
Section3 Items 301-319	Benefits & threats of digital social networks use

3.5.1.4 DATA ANALYSIS

According to Brink (2017:13), data analysis involves classifying, organising, modifying, summarising, and clearly expressing the data. The unprocessed data in this investigation were coded and input into a Microsoft Excel spreadsheet (Windows, 2010), which was examined by a statistician using the statistical software Statistical Package for Social Sciences (SPSS) 25. Both descriptive and inferential statistics were used in the study. While inferential statistics conclude the study population, descriptive statistics explain and summarise data (Gao & Brink, 2017:38). Pie charts, bar graphs, and composite frequency were used to display the data. It was determined which response patterns within a subset of the questions was statistically significantly dependent on each other. Additionally, two-way frequency tables were calculated to determine if the respondents' views were influenced by their biographical characteristics.

3.5.1.5 MEASURES TO ENSURE VALIDITY AND RELIABILITY FOR THE QUANTITATIVE STRANDS

- Validity

Construct validity has become the primary focus in validity research in recent years, with researchers emphasising whether ratings serve a useful purpose and result in beneficial outcomes when used in practice (Humbley & Zumbo, 1996). Establishing the validity of survey scores helps researchers to determine if an instrument is appropriate. In this study, content validity and predictive or concurrent validity were utilised (Creswell, 2018:254).

- Reliability

Reliability refers to the consistency or reprehensibility of an instrument. The internal consistency of an instrument, which measures the degree to which sets of items on the instrument act similarly, is the most essential reliability factor for multi-item instruments. This was crucial because all items on the instrument scale were

supposed to assess the same underlying construct and have appropriate inter-correlations (Creswell, 2018:255) to ensure the data's reliability in this study.

The interpretability and understanding ability of the respondents were determined by pre-testing the questionnaires on 36 students (5% of the sample size) from Civil Services who were not selected for the study. Suitable language and content adjustments were made based on the feedback received.

The respondents were presented with a series of statements expressing favourable or negative views towards a phenomenon on Likert scales (summated rating scales). Replies indicating the level of agreement or disagreement with each statement were scored and tallied into a composite score (Denise & Polit, 2009:339).

3.5.2. PHASE 2: QUALITATIVE RESEARCH

The primary goal of the quantitative research method is to utilise qualitative data to provide a more in-depth explanation of the initial quantitative results. The design is focused on building upon the quantitative findings and delving deeper into them. The initial step involves collecting survey data, analysing it, and then conducting qualitative interviews to clarify any confusing or contradictory findings (Creswell, 2018:365). It is common for qualitative researchers to find small sample sizes in qualitative interview studies surprising. Conversely, qualitative interviews are intended to gather detailed narratives or a "thick description" of an experience.

Inductive approaches to knowledge production are widely used in qualitative research to create meaning. Researchers utilise this method to explore, analyse, and understand social phenomena, as well as to uncover the meanings individuals attribute to activities, circumstances, events, or artifacts, to gain a better understanding of specific aspects of social life (Leavy, 2014). Recognising the importance of people's subjective experiences and meaning-making processes, and striving to gain a deeper understanding, is a valuable alternative for investigating, describing, or explaining the ideals that underpin qualitative research (Patricia, 2017:23).

The qualitative research component of this study enabled an examination of the students' experiences using digital social networks and the challenges associated with sexually risky behaviour among them. Since the primary goal of qualitative research is to comprehend how individuals behave and account for their actions, the

researcher's interactions with the 15 participants were focused on exploring issues related to the uses of social media networks for sexual and reproductive health, and how these issues are addressed within the university setting. Through the utilisation of diverse, adaptable data collection methods, qualitative research seeks to obtain a comprehensive, profound understanding of the participants' perspectives and meanings to provide "dense descriptions of the phenomena under investigation" (Creswell, 2014:186; Gray, 2009:177)

3.5.2.1 SETTING AND POPULATION

The study was conducted in Addis Ababa city administration, the capital city of Ethiopia. It has an estimated total population of 3,945,000, with high population density. It is the home of the institute of Ethiopia studies and the ethnological museum. The city also has numerous public universities and private colleges and universities with high rate of internet penetration of up to 50%. The study areas were chosen based on their high speed of internet infrastructure and maximum utilization of digital social media according to Population Projection (2024).

3.5.2.2 SAMPLE AND SAMPLING OF QUALITATIVE PHASE

The research objectives and methodologies determine the appropriate sample size for a study. Some studies may involve interviewing one or two individuals for multiple hours, while phenomenology studies typically include 10 interviewees, and grounded theory research may encompass up to 50 interviews. A purposive sample is one in which the researcher selects sample characteristics based on their knowledge of the subject, relevant literature, and the research question which they aim to address (Wiley & Blackwell, 2020:61-62).

In a mixed-method study, the type of sample utilized depends on the time orientation of the investigation (concurrent or sequential) and the relationship between the two integrated strands (nested or embedded). In this sequential-mixed approach, a nested sample form was employed (Patricia & Leavy, 2017:27). This means that from a randomly selected sample of 413 participants for the quantitative phase, a sample of 15 participants was chosen for the qualitative phase using the purposeful sampling method.

- Description of study coverage and sample

Table 3.2: Description of study sample coverage of the study populations in Addis Ababa, Ethiopia

Research setting	Samples	Data collection methods	
Universities	Survey sample	Structured self-administered Questionnaires	Interviews - Semi-structured interviews
A			
Undergraduate	232	232	5
Postgraduate			
B			
Undergraduate	101	101	5
Postgraduate (council)			
C			
Undergraduate	80	80	5
Postgraduate (council)			
Total	413	413	15

3.5.2.3 QUALITATIVE DATA COLLECTION METHODS

When collecting data, qualitative researchers do not exclude other options; instead, they often come to the field with a list of the most probable sources of information (Polit & Denise, 2009:339).

The main objective of qualitative research is to understand and explore the participants' interpretations of the event or topic being studied by utilising tacit

knowledge – intuitive and felt knowledge, to grasp the participants' various perspectives (Creswell, 2014:206). In this study, the aim was to create a detailed description that captures the event under investigation. Individual semi-structured interviews with students were conducted to gather qualitative data. The principal investigator was responsible for overseeing the data collection process.

- Semi structured interviews

According to the Creswell (2017:36), semi-structured interviews are self-report data gathering approaches with specific sets of topic characteristics to be covered in qualitative interviews. In this study, semi-structured interviews were conducted using an interview guide on (Annexure D). Individual interviews were conducted with 15 students using the prompt, "Tell me about your experiences with social media and sexual health concerns in university and how you dealt with it." Follow-up questioning, probing, and clarification were used to elicit the needed information from the participants. These interviews took place in a small private office away from the classroom and staff areas to ensure privacy. The researcher hoped to gain insights into the young people's sexual reproductive risks and the influence of social media at the university, as well as the university's approaches to promoting youth reproductive health (Geri & LoBiondo, 2017:266). This was compared with the national guideline programme for youth reproductive health in Ethiopia.

- Recruitment of the participant's sample

The potential volunteers who met the selected criteria were contacted one day before the scheduled interviews through a phone call and an invitation letter, with assistance from the student adviser. Typically, three to five individuals from each university participated in the interviews.

- Conducting the interviews

An in-depth interview can vary in length, from one to two hours, with no set duration (Descombe, 2007:181). The interviews typically had a duration of between 35 and 60 minutes. Precise transcription of voice recordings is essential for capturing all details and subtleties, as noted by Holloway and Wheeler (2010:282). The researcher can attest to the laborious and tedious nature of transcribing, although it allowed for

extended interactions with the transcriptions. Following Denscombe's (2007:183) recommendation, pseudonyms were used instead of the participants' identities to ensure confidentiality and anonymity in the transcriptions.

- Field notes

Field notes were collected in addition to the information obtained from the interviews. These unstructured observations are meant to enhance and provide context to the data gathered during the interviews (Polit & Beck 2008: 405).

Field notes include details such as the location, seating arrangements, participant behaviour, speech patterns, any notable occurrences, and the researcher's reflections. These notes are taken immediately after each interview to capture all any relevant information. Analysing these notes along the interview data helps to improve the understanding of the data. Initially, the researcher found nonverbal communication to be a challenging aspect to comprehend.

3.5.2.4 MEASURES TO ENSURE TRUSTWORTHINESS

In qualitative terms, rigour refers to the degree to which researchers strive to improve the quality of a research study's findings, as well as a means of establishing trust or confidence. It enables the researcher to ensure that the approaches employed over time are consistent. It also offers a precise depiction of the population under study. The following criteria were used in assessing trustworthiness: credibility, transferability, dependability, confirmability, and authenticity. The strategies, the activities to ensure trustworthiness, and their application in the study are shown in Table 3.3.

Table 3.3: Measures of trustworthiness during qualitative data collection

Strategies	Activities	Applications
Credibility	Long-term involvement in the fields	Will establish a rapport with the participants and establish a context of trust Discussions with participants, both formally and informally, on the results

	Persona checking	Asking thoughtful questions and providing clarification on participants' remarks during interviews. Taking a step back to clarify and verify certain descriptions in the questionnaire.
	Peer reflection	Discussions with independent colleague or supervisor Delivering research findings and design at a research forum
	Reflexivity	researcher's feelings, thoughts, experiences and observations
	Data and method Integration	Combining the study's quantitative and qualitative components through interviews and self-administration.
Dependability	Detailed explanation of the methodology Dependability audit	Comprehensive and thorough explanation of the research concept and methodology. Every document and piece of information used in the field was carefully recorded in a decision log. Review of data and supporting documentation by a third-party moderator or reviewer
Transfer ability	Context, participants and findings	Fieldwork descriptions, participant comments taken verbatim, and a detailed decision-making log.

Confirm ability	Confirm ability audit	Storage of unprocessed materials including interview audiotapes and notes, for one year beyond the Thesis publication
Authenticity	Reflection and brakes Comprehensive in-depth explanation	Keeping a journal of one's own prejudices, convictions, and beliefs Will be Textured and clear description with a direct statement from research participants

3.5.2.5 QUALITATIVE DATA ANALYSIS

Qualitative researchers use various types of data formats, with spoken words being one of the most commonly used sources of information. The process of transcribing a sound recording of spoken words into written language for further analysis is known as transcription (Dennis & Howitt, 132:2010). While narrative analysis, phenomenological analysis, and interpretative phenomenological analysis share similarities and are often used for in-depth interview data, thematic analysis is a set of methods which were used to categorical data into significant themes or descriptive categories in this study (Dennis & Howitt, 133:2010). All the interviews were recorded and transcribed verbatim by a professional transcription service (Wiley & Blackwell, 2020:63) with the participants' consent. The Atlas TI software was used to input data and field notes, and thematic analysis was used to analyse the data.

3.6 PHASE 3: DEVELOPMENT PHASE

In this phase, integration of findings from quantitative and qualitative phases was conducted, comparing these findings to determine whether they support or contradict each other. Integrated findings were further compared, contrasted and supported by current literature sources. From the integrated finding emerging concluding statements were used as basis for development and validation of the guidelines. Full discussion thereof is in chapter 6.

The process of proposing guidelines followed key steps, such as defining the scope and objectives, retrieving and synthesizing information from the WHO in 2018, as well as the WHO recommendations on youth sexual and reproductive health and rights

(Greenhow & Galvin, 2020). Evidence bases of the Social Normative Theory, concepts from the literature review, and key findings are all essential components. Validation was carried out by experts in sexual reproductive health using a Likert scale with four options for evaluation, and their recommendations and feedback were incorporated.

3.7 ETHICAL CONSIDERATIONS

A set of guidelines known as ethical considerations in research guides research practices and designs. These guidelines include voluntary participation, informed consent, anonymity, confidentiality, potential for harm, and results communication (Fleming & Zegwaard, 2018). Ethics become a fundamental concern in a research approach that blurs the distinction between researcher and the participant. The ethical issues that should be considered are numerous, and they are reflected in the research process (Creswell, 2018).

The UNISA's Health Studies Research Ethical Committee (HSREC) granted the research clearance, and permission letter to conduct the study from the three public universities was obtained from each university's research ethical committee. The following basic ethical principles were applied to this research: principle of autonomy, fairness, beneficence, and non-maleficence for the participants, institution, and researcher (Polit & Beck 2018:134).

- **Principle of autonomy**

In studies involving human beings, anonymity and confidentiality need to be understood. However, the distinction between the two categories is essential for creating protocols that safeguard participant privacy and obtain sufficient informed consent. A research subject is considered confidential when the researcher is aware of their identity but takes precautions to prevent others from learning about it. Anonymity prevents researchers from knowing the identities of specific subjects (Coffelt, 2017: 230).

The right to self-determination and full disclosure are two principles (Polit & Beck, 2018: 135) that guided this study. The participants were given the freedom to decide whether to participate or not, and the researcher honored the participants' choices. Privacy and confidentiality were always upheld during the study.

- Principle of beneficence

Beneficence is characterised as an act of kindness, mercy, and charity with a strong moral imperative to do well to others. All professionals share the fundamental moral requirement of acting ethically (Kinsinger & Chiropr, 2010).

Human research should be designed to provide advantages for the participants or impose a duty on the researchers to limit harm and maximise benefits. In this study, the researcher ensured a minimum risk throughout the data collection procedure by preparing physically and psychologically before the main data collection and employing well-trained data collectors.

- Principle of justice

Justice in research ethics involves ensuring the fair selection of the research subjects. When scientists conduct clinical research and recruit voluntary research subjects to participate in a study, justice entails the equitable distribution of risks and benefits (Barrow, Brannan, & Khandhar, 2021).

The national commission utilised the concept of fairness to evaluate the equitable selection of subjects within research (Kahn, Mastroianni, & Sugarman, 2018:2). In this study, the researcher used the same evaluation instruments and methodologies for all the participants, regardless of age or gender, and the study population was treated equally.

- Informed consent

Permission for something to happen or agreement to do something is one of the guiding principles of research ethics, known as informed consent. The purpose of informed consent is for human volunteers to enter research freely and voluntarily after being fully informed of what it means to participate and giving their consent before (Foe & Larson, 2016).

A potential participant's choice regarding involvement should be thoroughly informed, free, private, and documented in writing. Any exceptions to this rule should be justified (Harris, 2019:814). In this study, the subjects were requested for consent after providing them with detailed information regarding the study's goals, types of

questions, and how they can respond. They were also informed of the importance of anonymity and their ability to withdraw from the study.

Furthermore, the participants were empowered to refuse to answer questions if they were uncomfortable. The purpose of the study was explained to the study participants, emphasising their right to decline and assurances of privacy. Each participant provided informed consent by signing the consent form. The questionnaires were recorded and coded anonymously to ensure strict anonymity.

- Confidentiality and anonymity

Confidentiality and anonymity are ethical obligations of researchers to protect the privacy of the participants and institutions by safeguarding their personal and institutional information while collecting, analysing, and reporting data (Privacy Act 1988). In this research, confidentiality and anonymity were ensured by coding personal information and using codes such as University A, to represent institutional names.

3.8 CONCLUSION

This chapter explained the study's methodological foundations, which are sequential mixed method research. The quantitative and qualitative strands were discussed, with a focus on how they were used to address the research questions. The study's rigor and measures of trustworthiness were ensured to maintain research integrity; the instruments used for data collection; the sampling procedures and participant selection criteria; and the critical ethical issues observed during data collection and analysis were detailed.

CHAPTER FOUR

ANALYSIS PRESENTATION AND DESCRIPTION OF THE QUANTITATIVE RESULTS

4.1 INTRODUCTION

This chapter presents and analyses the quantitative results obtained from the data collected from the university students through a self-administered questionnaire. The chapter focuses on data management, analysis, and concluding the phase. The analysis and presentation of the quantitative results are based on the questionnaire sequences covering demographic data, digital social network usage, sexual reproductive health information acquired through digital social network, perceived advantages and disadvantages of digital social network and the students' sexual history, risky sexual behaviour, and experiences of digital social network usage for reproductive and sexual health. The following research questions were answered in Phase I:

- What is the information regarding the students' sexual and reproductive health, and their access and use of digital social network?
- What are the perceived benefits and threats of using digital social networks for the youth with regards to their sexual and reproductive health?

4.2 DATA MANAGEMENT AND ANALYSIS

Two methods of managing and analysing data were utilised. Firstly, the quantitative results from the self-administered questionnaire were examined. Individual responses were manually tallied for each category and entered into a Microsoft Excel spreadsheet. To facilitate data organisation, a numerical code was assigned to each type of response. The data was then analysed using IBM's SPSS version 25. Quantitative data were transformed into numerical values which are also referred to as codes (Ngulube, 2015:156). Initially, the data was presented using frequencies and proportions in descriptive statistics. The chi-square goodness of fit test was conducted to determine if the attributes followed a uniform distribution and were equally probable.

The relationship between the variables was further examined using the chi-square test of independence. The correlation coefficient (r) was calculated to assess the strength of the relationship, and standardised residuals were utilised in the subsequent chi-square test to identify any discrepancies.

4.2.1 Demographic profiles of the participants

The sociodemographic data included the respondents' age, gender, marital status, religion, study programme, and university. A total of 428 university students participated in the survey, but only 393 ($N=393$) returned the questionnaire, resulting in a 95.3% response rate and a 4.8% non-response rate, as shown in Figure 4.1.

Nearly 90% of the 393 respondents were single (89.1%), 39 (9.9%) were engaged, and four (1%) were married. Three-hundred and forty-eight (348) (88.5%) lived in dormitories, while a few (45) (11.5%) lived off-campus. More than half of the respondents (206) (52.4%) were religious, 93 (23.7%) were somewhat religious, 82 (20.9%) were highly religious, and the remaining 112 (3.1%) were not religious.

The questionnaire included inquiries about the educational status of the families of the respondents. The purpose of including the family's educational status was to determine if there is a relationship between the digital social network usage of the respondents and their family's education level. The educational background of parents and other caregivers is crucial in modeling good behaviour for children, including media use and consumption (Reid Chassiakos, Radesky, Moreno, Hill, Hutchinson, & Mendelson, 2016: 138). The results are summarised in Table 4.1. Most of the parents of the youths who participated in the study were college or university graduates. Seventy-four (74) (18.8%) of the participants had fathers with no formal education, 67 (17.0%) had fathers with primary school education, 42 (10.7%) had fathers with completed secondary education, and 54 (13.7%) had fathers who attended high school. Additionally, 156 (39.7%) of the participants' fathers have a diploma or higher qualification. Regarding the mothers' educational background, 121 (30.8%) had mothers with no formal education, 70 (17.8%) had mothers who completed primary education, 57 (14.5%) had mothers who completed secondary education, another 57 (14.5%) had mothers who attended high school, and the remaining 88 (22.4%) had mothers who held a diploma or higher as shown in Table 4;

Table 4.1: Socio-demographic biographies of respondents at public university in Addis Ababa, Ethiopia (N=393)

Variables	University A (N=218)		University B (N=100)		University C (N=75)		Total(N=393)	
	n	%	n	%	n	%	n	%
Gender								
M	152	69.7	41	41.0	72	96.0	265	67.4
F	66	30.3	59	59.0	3	4.0	128	32.6
Total	218	100	100	100	75	100	393	100
Age								
18-20yrs	88	40.3	5	5.0	0	0.0	94	23.9
21-22yrs	65	29.8	55	55.0	42	56.0	162	41.2
23-24yrs	24	11.0	38	38.0	36	34.6	88	22.4
25+yrs	41	18.9	2	2.0	7	9.4	49	12.5
Total	218	100	100	100	75	100	393	100
Marital status								
Married	1	0.6	0	0	3	3.0	4	1.0
Engaged	32	14.6	7	9.4	0	0	39	9.9
Single	185	84.8	68	90.6	97	97.0	350	89.1
Total	218	100	75	100	100	100	393	100
Religious status								
Highly religions	38	17.0	19	25.3	26	26.0	82	20.9
Religious	127	57.9	41	54.6	39	39.0	206	52.4
Somewhat religious	49	22.0	14	18.6	31	31.0	93	23.4
Not at all	10	3.1	1	1.5	4	4.0	12	3.1
Total	218	100	75	100	100	100	193	100
Educational Status of the Families of the Study Participants								
Fathers Educational status								
No formal education	46	21.1	15	20.0	13	13.0	74	18.8

Primary school	42	19.2	10	13.3	18	18.0	67	17.0
Secondary school	25	11.5	14	18.6	9	9.0	42	10.7
High school	34	15.6	17	22.6	9	9.0	54	13.7
University/college graduate	71	32.6	19	25.5	51	51.0	156	39.7
Total	218	100	75	100	100	100	393	100
Maternal educational status								
No formal education	73	33.5	24	32.0	24	24.0	121	30.8
Primary school	38	17.4	10	13.3	22	22.0	70	17.8
Secondary school	33	15.1	15	20.0	9	9.0	57	14.5
High school	31	14.2	11	14.6	15	15.0	57	14.5
University/college graduate	43	19.8	15	20.1	30	30.0	88	22.4
Total	218	100	75	100	100	100	393	100

4.2.1.1 Respondents by age and gender

The majority of the respondents (265) (67.4%) were male, while 128 (32.6%) were female, as shown in Figure 4.1. The majority of the respondents (162) (41.2%) were in the 21-22 years age group, with 49 (12.5%) being over 25 years old. The median age of the respondents was 21, with an average mean age of 21.5 (+2.2 SD) years.

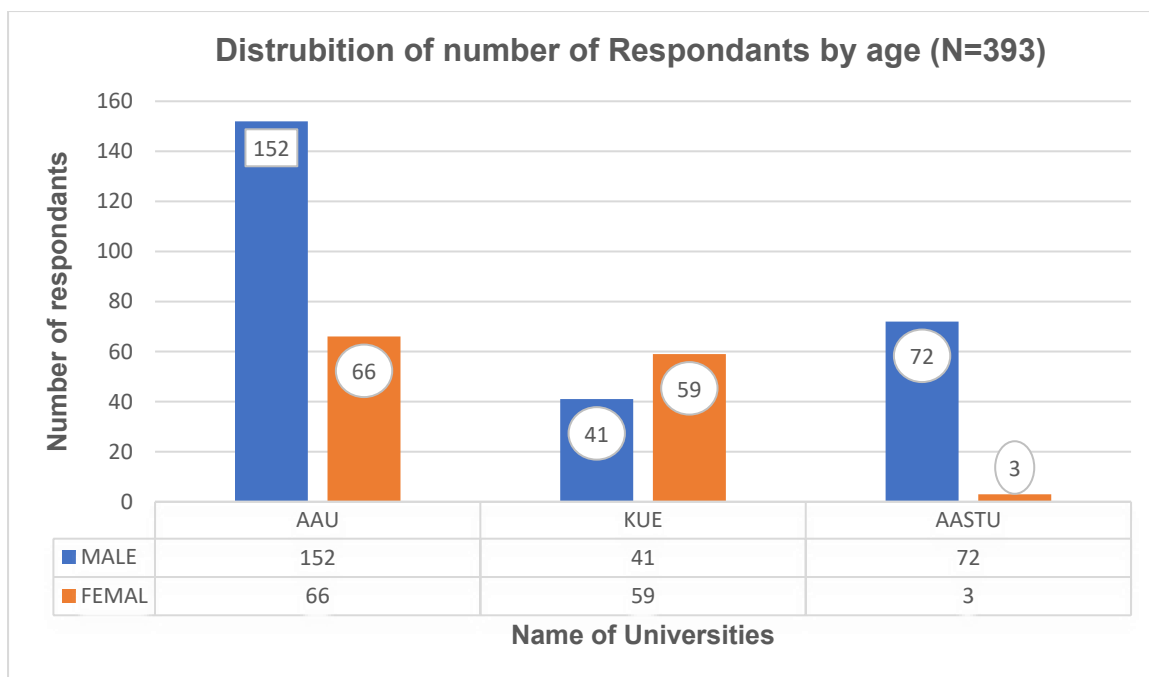


Figure 4.1: The gender distribution of respondents in three universities in Addis Ababa, Ethiopia

4.2.1.2 Respondents by programme of study

The majority of the respondents (n=342) (87.0%) were enrolled in undergraduate program, while n=51 (13.0%) were enrolled in postgraduate program, as summarised in Figure 4.2.

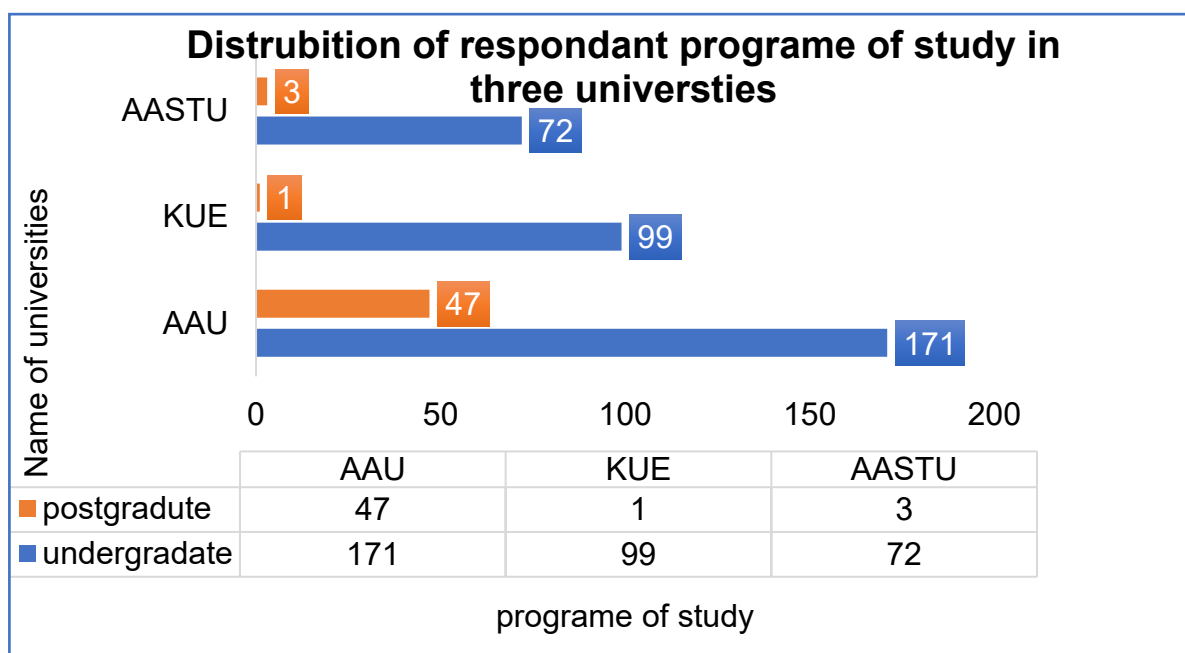


Figure 4.2: Programme of study of the respondents

4.2.2 Usage of Digital Electronic Media and Health Information by University Students

The responses regarding the type of digital electronic media usage and network information of the respondents are summarised in Table 4.2. Three-hundred and eighty-three (383) (97.5%) respondents have electronic devices, while 10 (2.5%) do not have a private device. In terms of social media used by the respondents, the largest proportion of youths (25.9%) used Telegram, followed by YouTube (23.2%), Facebook (19.9%), and the remaining used Instagram (13.1%), WhatsApp (9.1%), Twitter (8.8%), as shown in Figure 4.2.

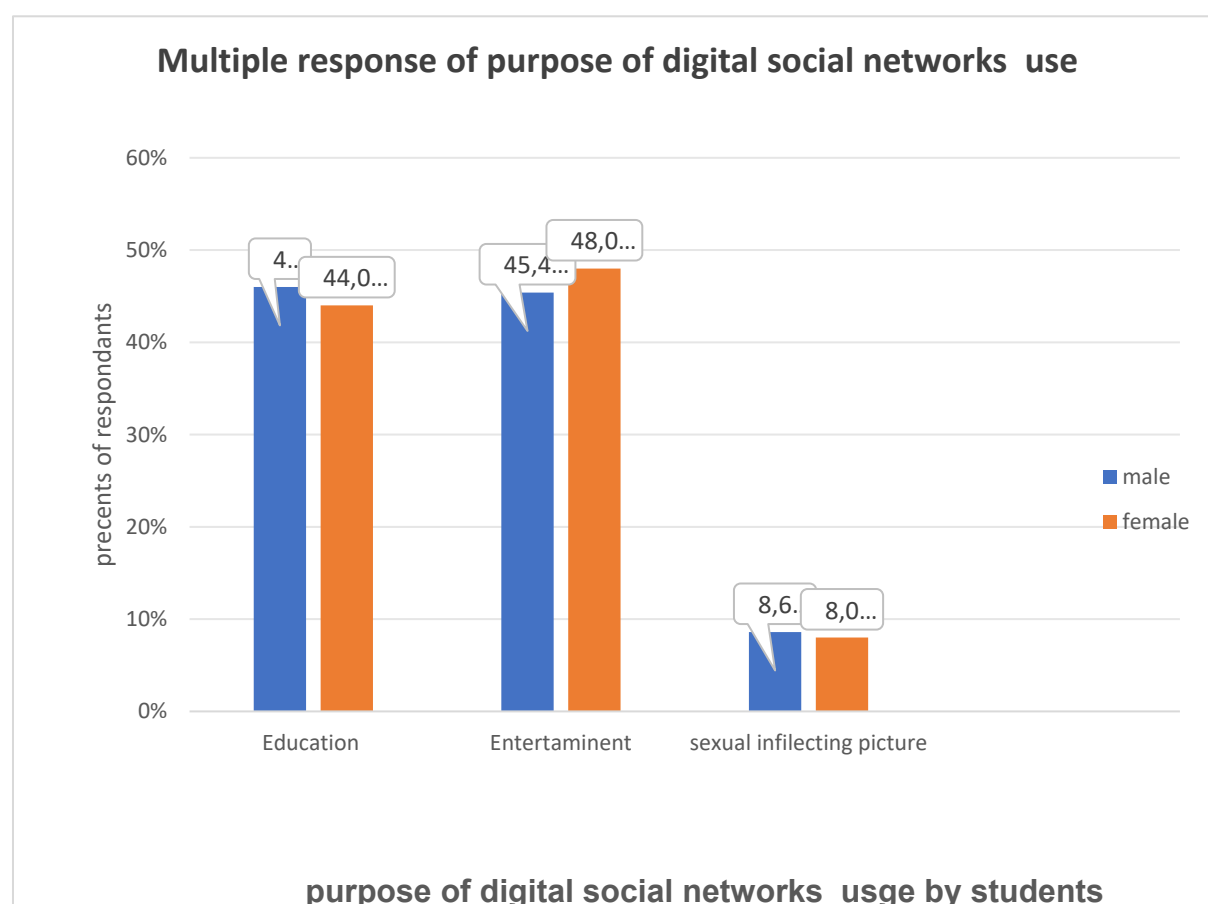


Figure 4.3: The respondents' responses on the purpose of using digital social networks

Almost an equal proportion of the respondents used DSN for entertainment (46.3%) and education (45.3%), while sixty-two (62) (8.4%) used it to watch sexually explicit pictures. On the other hand, among 393 respondents, 159 (40.5%) reported exchanging short messages through digital media. Half of these respondents (53.9%) exchange short messages with their parents, 33.3% exchange text messages with

their boyfriends or girlfriends, and the remaining 12.7% exchange short messages intentionally with social media friends as shown in Table 4.2.

Table 4.2: Responses from respondents regarding their digital electronic usage and network information.

Variables	Response					
	Male		Female		Total	
	Number	percent	Number	percent	Number	precept
Accessibility of electronic devices						
Smartphone	233	55.5	121	58.4	354	56.5
Laptops	138	32.8	66	31.9	204	32.5
Tablet devise	49	11.7	20	9.7	69	11.0
Total	420	100	207	100	627	100
Which DSN do you use?						
You tube	216	23	103	23.4	319	23.2
Facebook	196	20.9	78	17.7	274	19.9
Twitter	99	10.6	22	5.0	121	8.8
Telegram	235	25.1	122	27.7	357	25.9
WhatsApp	84	8.9	41	9.3	125	9.1
Instagram	106	11.5	74	18.9	180	13.1
Total	936	100	440	100	1376	100
Purpose of DSN usage						
Education	227	46.0	108	43.9	335	45.3
entertainment	224	45.4	118	47.9	342	46,3
Watch sexually reflecting pictures	42	8.6	20	8.2	62	8.4
Total	493	100	246	100	739	100
To whom respondents exchange SMS						
Parents	71	51.0	39	60.0	110	53.9
Social media friends	24	17.2	2	3.0	26	12.7
Boy/girlfriends	44	31.8	24	37.0	68	33.4
Total	139	100	65	100	204	100

4.2.2.1 Types and Frequency of digital social network Used by Respondents

The importance of the type and frequency of digital social network lies in the significant amount of sexual information posted on these platforms. This exposes young people to risky sexual activities that can have serious implications that influence their psychological views and thoughts towards sex. Additionally, as most students spend hours conversing and engaging in unproductive activities on social media, their attitudes towards academic activities are deteriorating (Owan & Eneje, 2020: 5). In this study the most utilised social media platforms by the respondents were Telegram (268) (68.2%) (AOR=1.358), Facebook (52) (13.2%), YouTube (38) (9.2%), and TikTok (20) (5.1%). Instagram, WhatsApp, and Twitter were used by 2.0%, 1.3%, and 0.5%, respectively, as shown in Figure 4.4.

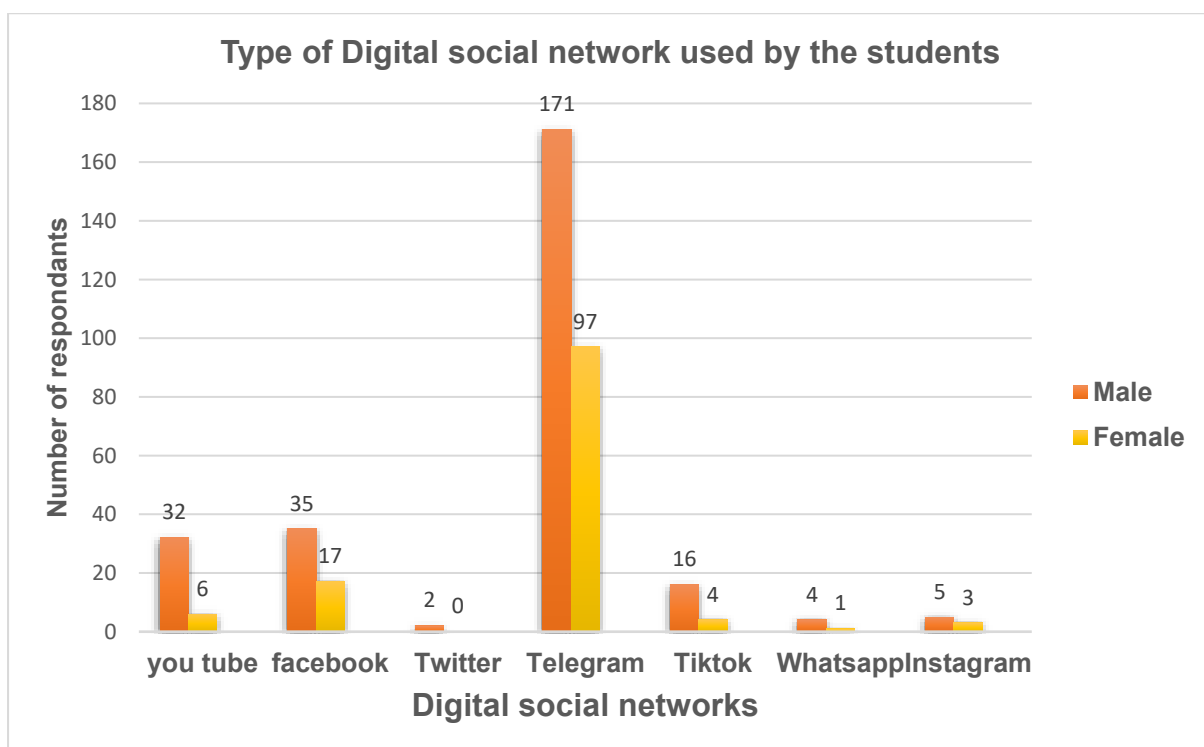


Figure 4.4: Types of social networks used by respondents (N=393)

Regarding the frequency of digital social network use by the respondents, the majority (186) (47.3%) reported using it several times a day (AOR=2.250). Additionally, 121 (30.8%) said they used it almost constantly every other day, 52 (13.2%) used it once a day, and the remaining 17 (4.3%) used it once a week or less often. Male

respondents reported more frequent use (46%) compared to female respondents (9.4%), as summarised in Figure 4.5.

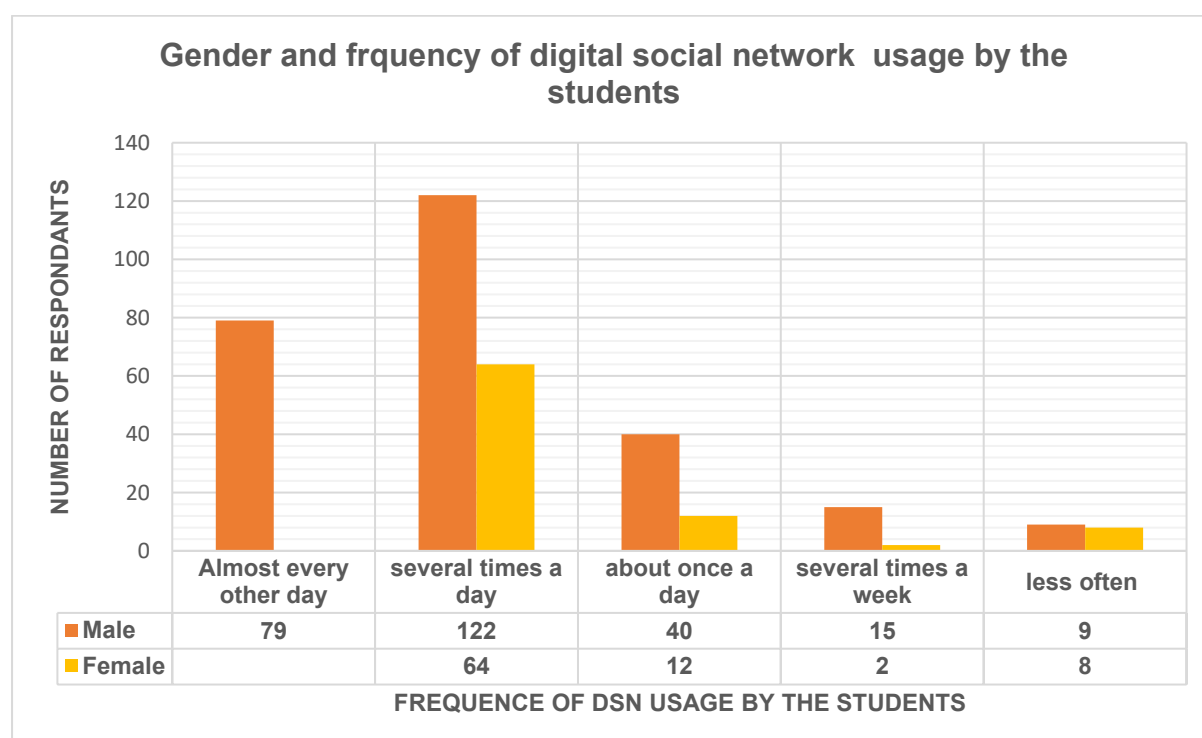


Figure 4.5: Frequency of digital social networks used by respondents (N=393)

4.2.2.2 Sexual and reproductive health information from digital social network platforms

The respondents were asked about the accessibility of sexual reproductive health information on digital social network platforms. The majority (260) (68.2%) stated that sexual and reproductive health information was easily accessed, while the remaining 125 (31.8%) found it difficult to access. They provided reasons for this difficulty. Sixty-three (63) (50.4%) mentioned that they did not know how to obtain information, 28 (22.4%) said that their parents disapproved, 18 (14.4%) noted that no services were available, while 12 (9.6%) mentioned feeling shy, and the remaining four (3.2%) cited other reasons as shown by Figure 4.6 and Table 4.4.

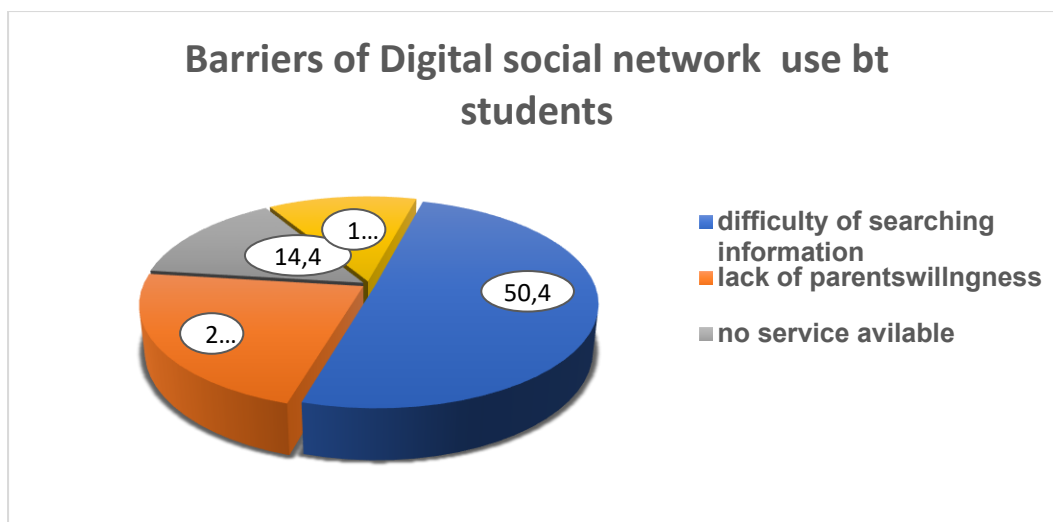


Figure 4.6: Barriers to accessing sexual reproductive health information on social digital networks by respondents (N=125)

Table 4.3:Responses of respondents to accessing sexual reproductive health information on digital social networks and its barriers

Variables	Male (N=265)		Female (N=128)		Total (N=393)	
	Number	%	Number	%	Number	%
Is easy to access SRH information on digital social network?						
Yes	174	65.6	94	73.4	268	68.2
No	91	34.4	34	26.6	125	31.8
Total	265	100	128	100	393	100
Reasons of respondents do not easily access SRH information on digital social network	N=91 N=34 (N=125)					
Don't know where (website) obtain information	42	46.1	21	61.7	63	50.4
Parents dis approve	18	19.8	10	29.5	28	22.4
No service available	16	17.6	2	5.9	18	14.4
I feel shy	11	12.0	1	2.9	12	9.6
Others reasons	4	4.5	0	0	4	3.2
Total	91	100	34	100	125	100

The respondents have heard of STIs and encountered reproductive health information on digital social network platforms. Despite 98% of them knowing about HIV/AIDS, they still sought additional information on digital social network. Specifically, 20.7% sought information about sexual intercourse and its risks, 19.8% sought information on contraception, 20.3% were interested in sexual problems, and 19.7% searched for information on STIs and their prevention. The majority of the respondents received sexually reproductive health information from school (22.3%), followed by digital social network (18.8%), television or radio (20.5%), and other sources such as friends, clinical professionals, and newspapers (16.5%, 12.5%, and 9.3% respectively). This is summarised in Table 4.4.

Table 4.4: Multiple responses from the respondents regarding information on sexually transmitted infections and sexual and reproductive health.

Variables	Response					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Knowledge of sexually transmitted infections						
Gonorrhea	171	24.7	71	23.0	242	24.2
Syphilis	146	21.1	67	21.7	213	21.3
Chlamydia	50	7.2	20	6.5	70	7.0
HIV/AIDs	261	37.7	124	40.1	385	38.5
Herpes zoster	63	9.3	27	8.7	90	9.0
Total	691	100.0	309	100.0	1000	100.0
Access to SRH information						
DSM	163	16.3	69	19.6	232	18.8
Télévision/radio	176	20.0	77	21.9	252	20.5
Newspaper	94	10.6	21	6.0	115	9.3
Clinical /health professionals	126	14.3	28	7.9	154	12.5
Schools/university	184	20.8	91	25.9	275	22.5
Friends	139	18.0	65	18.7	204	16.4

Total	882	100.0	351	100.0	1233	100
What kind of SRH information they need on DSN						
Sexual intercourse and its risky	142	21.2	62	19.5	204	20.7
Genital hygiene &menstruation	126	18.8	68	21.4	194	19.7
Contraception	123	18.4	72	22.6	195	19.8
Sexual problems	139	20.8	61	19.2	200	20.3
Sexually transmitted infection & and prevention	139	20,8	55	17.3	194	19.7
Total	669	100	318	100.0	987	100.0

About 98% of the respondents know about HIV/AIDS, as summarised in Figure 4.7

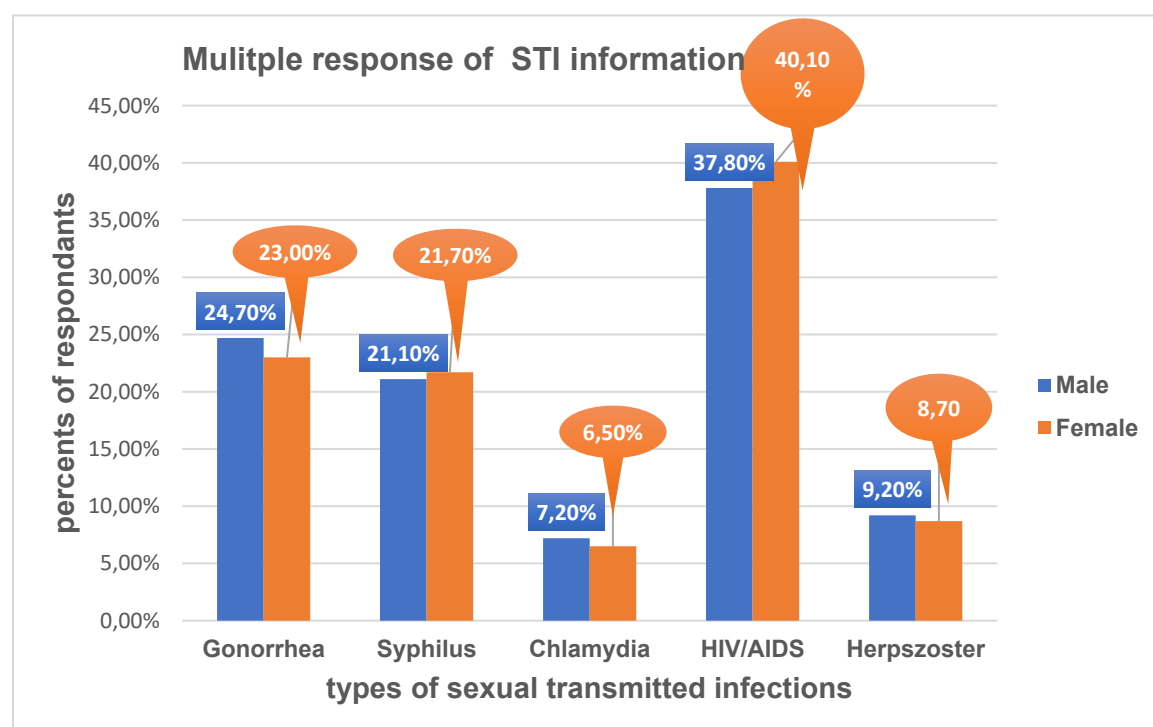


Figure 4.7: Responses of the respondents regarding the knowledge of Sexual transmitted infections (N=393)

4.2.3 Benefits and Risks of DIGITAL SOCIAL NETWORK

Regarding the effects of digital social network on youths, more than half of the respondents (180) (45.8%) reported harmful effects (AOR=1.576), while 168 (43.0%) reported beneficial effects for the youth. The remaining 40 (10.2%) and four (1%) reported neither negative nor positive effects, which deemed it not important for the youths' sexual reproductive health. The majority of the respondents use social media for communication with friends and family (26.9%), and for obtaining health information. The remaining respondents mentioned using it to meet people with similar interests (24.1%), find happiness and for entertainment.(22.1%)

Regarding the risks of digital social network, the majority of the respondents expressed concerns about harmful relationships and communication (29.7%) (AOR=1.191), early initiation of sexual intercourse (26.1%) (AOR=1.51), encouraging peer pressure (23.4%), encouraging multiple sexual partners (20.8%), and spreading rumours. This is summarised by Table 4.6

Table 4.5:The respondents' responses regarding the benefits and risks of using digital social networks.

Variables	Réponse					
	Male		Female		Total	
	Number	%	Number	%	Number	%
The benefit of DSN in terms of SRH						
Communication with friends and families	81	25.7	41	29.7	122	26.9
Getting sexual reproductive health information	87	27.6	35	25.3	122	26.9
Meeting people with similar interests	78	24.7	31	22.5	109	24.1
Finding happiness and entertainment	69	23.0	31	22.5	109	22.1
Total	315	100.0	138	100.0	453	100.0
Risks of DSN use stated by the students						
Having multiple partners and rumor-spreading	51	18.2	42	22.2	93	20.8
Harmful relationships and communication	85	30.4	48	25.4	133	29.7
Initiation of early sexual desire	80	28.6	37	19.6	117	26.1
peer pressure influences	64	27.8	62	32.8	126	23.4
Total	280	100.0	189	100.0	469	100.0

Regarding the reliability of information on digital social network, the majority of the participants agreed that it is reliable. Specifically, 282 (71.6%) agreed that the information is reliable, while 83 (21.1%) were neutral, and 28 (7.1%) disagreed with the reliability of information on digital social network as shown in Figure 4.8.

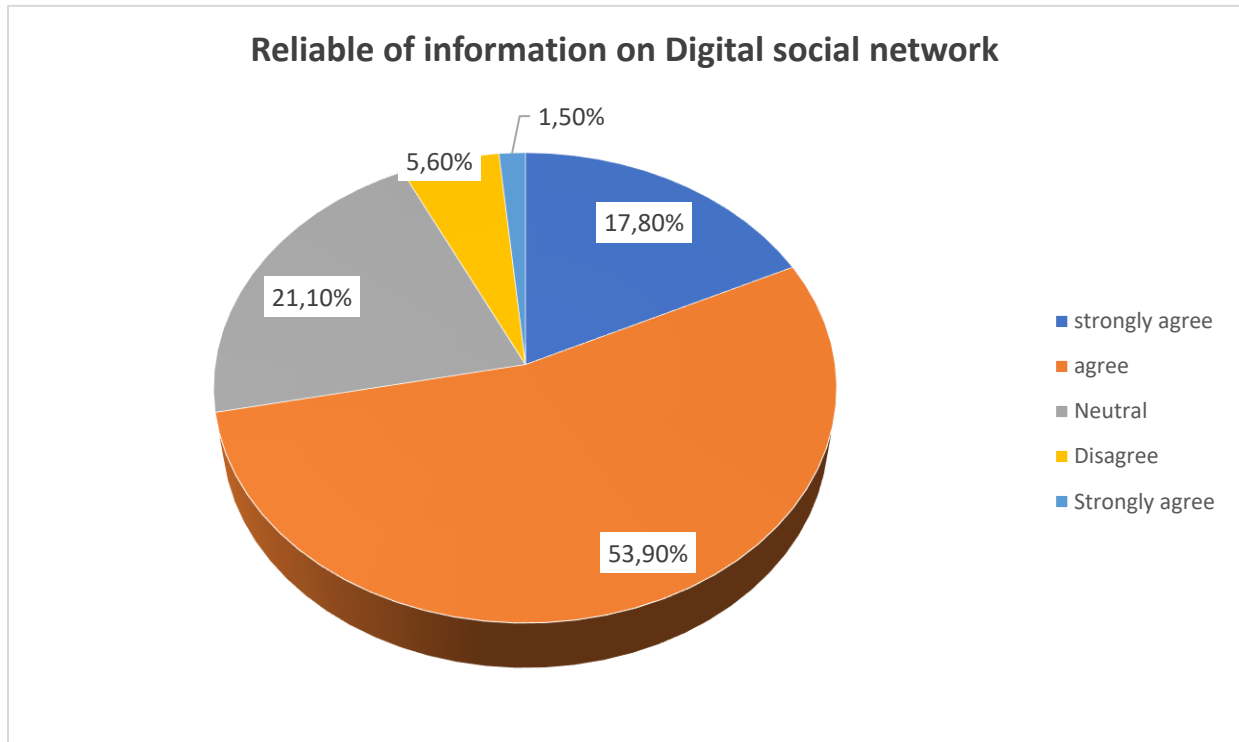


Figure 4.8: Respondents' responses regarding reliable information provided by digital social network(N=393)

The respondents were asked about their perception of the use of digital social network and its influence on sexual practices. The majority of the respondents (228) (73.3%) revealed that they believe that digital social network has led to an increase in sexual practices. The remaining 76 (19.3%) denied that digital social network had any impact on sexual practices, as shown in Figure 4.9.

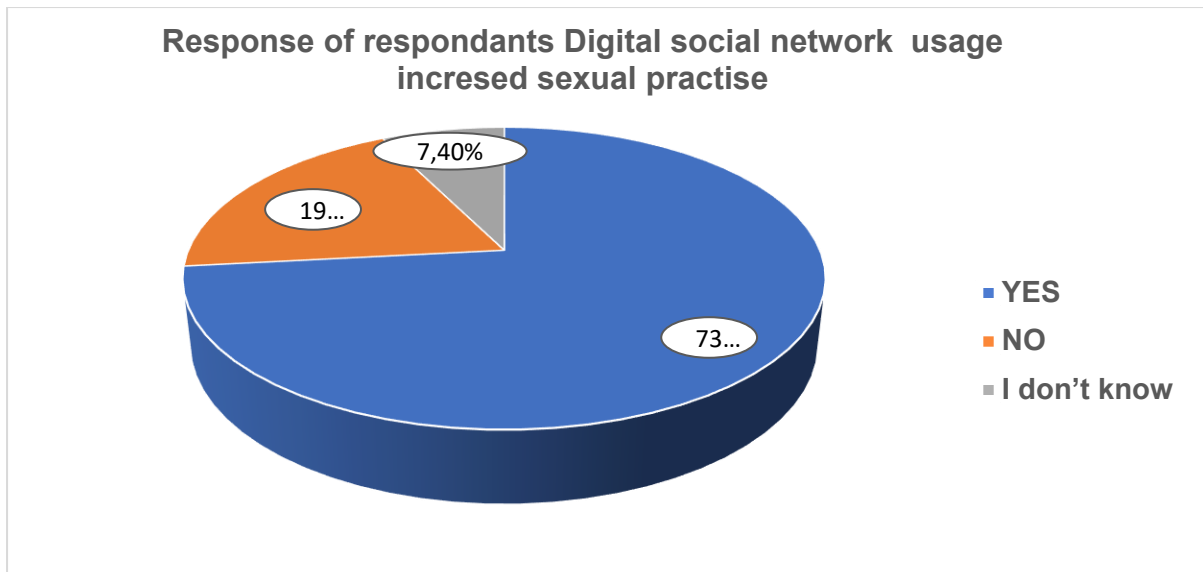


Figure 4.9: Respondents' response on digital social network usage and sexual practice (N=228)

As shown in Table 4.7, the majority of the respondents reported engaging in risky sexual activities. Specifically, 206 (52.45%) stated that they had accessed such activities, while 172 (43.8%) reported watching sexual activity films and pornography on digital social network. Of those surveyed, 131 (33.3%) admitted to doing so once or twice in the last six months, 65 (16.5%) said they did it three to four times, and 10 (2.5%) did it more than four times in the same period.

Table 4.6:Frequency of risky sexual activities among youths while using digital social networks. (N=393)

Variables	Male N(=265)		Female(N= 128)		Total (N=393)		AOR(95CI) adjusted	
	Number	%	Number	%	Number	%		
Have you seen sexual activity films?								
Yes	162	61.1	44	34.4	206	52.4	0.333	0.214,0.517
No	103	38.9	84	65.6	187	47.6	1	
Total	265	100	128	100	393	100		
Have you seen a pornography film?s								
Yes	134	50.6	38	29.7	172	43.8	0.413	0.263.0.647
No	131	49.4	90	70.3	221	56.2	1	
Total	265	100	128	100	393	100.		
Frequency of watching sexual activity film	N=162)	(N= 44)		(N=206)				
Once/twice for the last six months	107	66.0	24	54.4	131	63.6		0.44,1675
Three/four times over the last six months	46	28.4	19	43.2	65	31.5	2.019	
More than five times in the last six months	9	5.6	1	2.4	10	4.9	3.217	
Total	162	100	44	100	206	100		

4.2.4 EXPERIENCE of the sexual practice of youth

Regarding history of sexual practice, male students had less practice than female students (41.1% vs 45.3%), as shown in Figure 4.10.

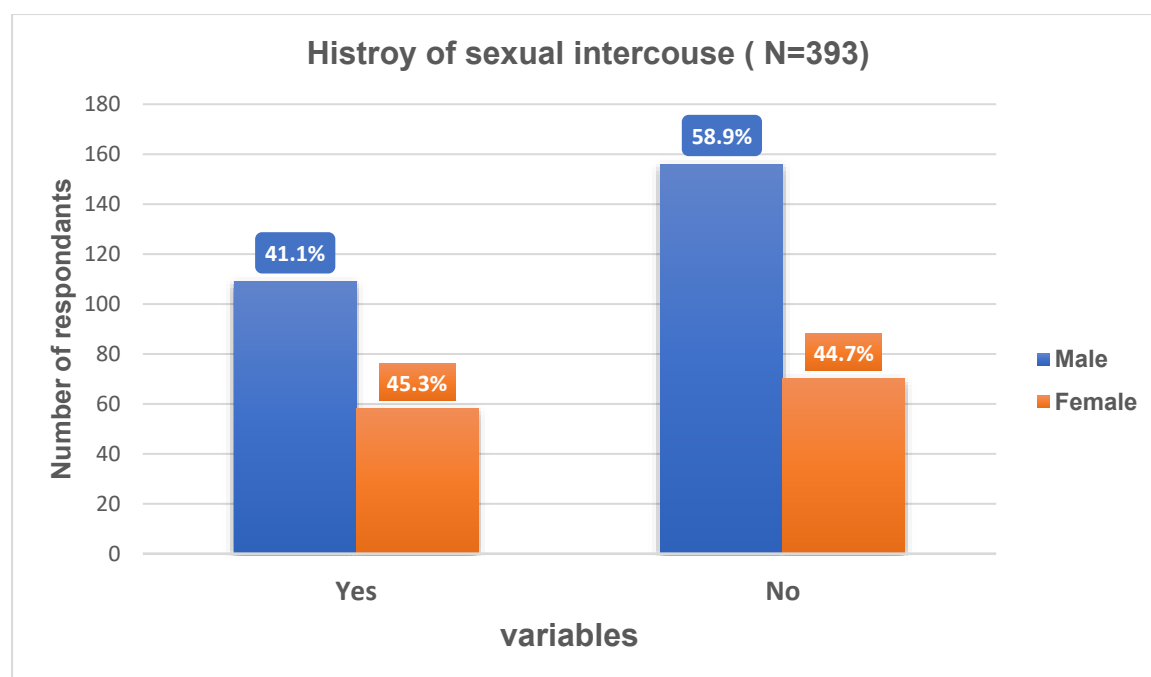


Figure 4.10: Responses of the respondents on the history of sexual practices

As summarized in Table 4.8, two hundred and twenty-six (57.5%) respondents reported a history of sexual intercourse. Among them, 39 (9.9%) had multiple sexual partners, 138 (35.1%) had partners who used alcohol in the last six months, and 76 (19.1%) used condoms. Additionally, 79 (20.1%) reported having reproductive health problems in the previous six months.

The majority of the reproductive health problems reported by the respondents were genital ulcers (43, 10.9%), menstrual tension (25, 6.4%), genital hygiene issues such as an offensive smell (8.2%), and urethral discharge (3.8%). Sixty-six (66) (16.8%) of the respondents sought medical care, with 53 (13.5%) going to private health facilities, and the remaining 13 (3.3%) receiving treatment in governmental health facilities.

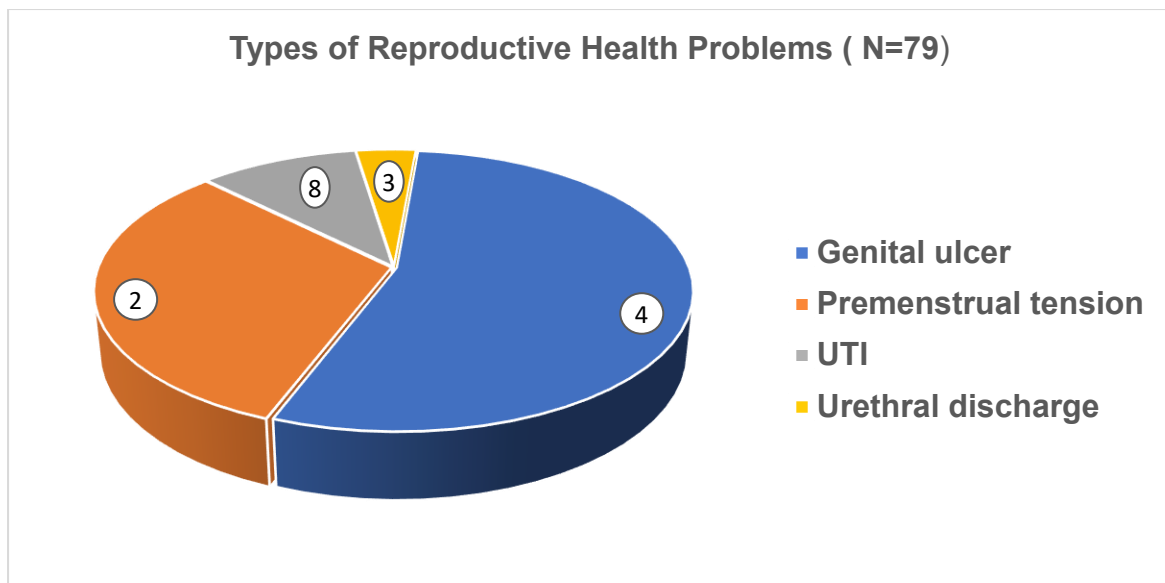


Figure 4.11: Responses of the respondents on reproductive health problems

Table 4.7: Frequency of sexual practice and associated factors among students (N=393)

Variables	Male (N=265)		Female (N=128)		Total (N=393)		OR(95%CI) adjusted	
	Number	%	Number	%	Number	%		
Sexual history								
Yes	156	58.8	70	54.7	226	57.5	0.843	0.551,1.290
No	109	41.2	58	45.3	167	42.5	1	
Total	265	100	128	100	393	100		
History of multiple partners	(N= 156)		(N= 70)		(N=226)			
Yes	31	19.9	8	11.4	39	17.3	0.520	0.226,1.199
No	125	80.1	62	88.6	187	82.7	1	
Total	156	100	70	100	226	100		
Both partner alcohol use for the last six months								
Yes	97	62.2	41	58.6	138	61.0	0.860	0.484,1.529
No	59	37.8	29	41.4	88	39.0	1	
Total	156	100	70	100	226	100		
him self/here partner Condom used for the last six month								
Yes	60	38.5	16	22.8	76	33.6	0.474	0.249,0.903

No	96	61.5	54	77.2	150	66.4	1	
Total	156	100	70	100	226	100		
Reproductive health problem for the last six month								
Yes	58	37.2	21	30.0	79	35.0	0.724	0.395,1.327
No	98	62.8	49	70.0	147	65.0	1	
Total	156	100	70	100	226	100		
Seek medical care	(N= 58)		(N=21)		(N=79)			
Yes	51	89.0	15	71.4	66	83.5	0.342	0.100,1.178
No	7	11.0	6	28.6	13	16.5		
Total	58	100	21	100	79	100		
Types of SRH problems								
Genital ulcer	40	69.0	7	33.3	43	54.4		3.311,8.817
Premenstrual tension	0	0	11	52.4	25	31.6	4.241	
Genital itching	10	17.2	3	14.3	8	10.1		
Urethral discharge	8	13.8	0	0	3	3.9		
Total	58	100	21	100	79	100		
Type of facility got medical care	(N= 51)		(N=15)		(N=66)			
Government health facility	12	23.5	1	6.7	13	19.7	4.308	0.512,36.228
Privet health facility	39	76.5	14	93.3	53	80.3	1	
Total	51	100	15	100	66	100		

4.2.5 Discussion On sexual reproductive health issues with families and others

Three hundred fifty-eight respondents, accounting for 91.1%, discussed sexual issues with their families, friends, or health professionals. The remaining 35 respondents (8.9%) did not discuss sexual-related issues with anyone. The majority of respondents talked about these issues with their friends (58%) and health professionals (25.5%), while a smaller percentage (16.4%) discussed sexual issues with their families, as shown in Figure 4.12.

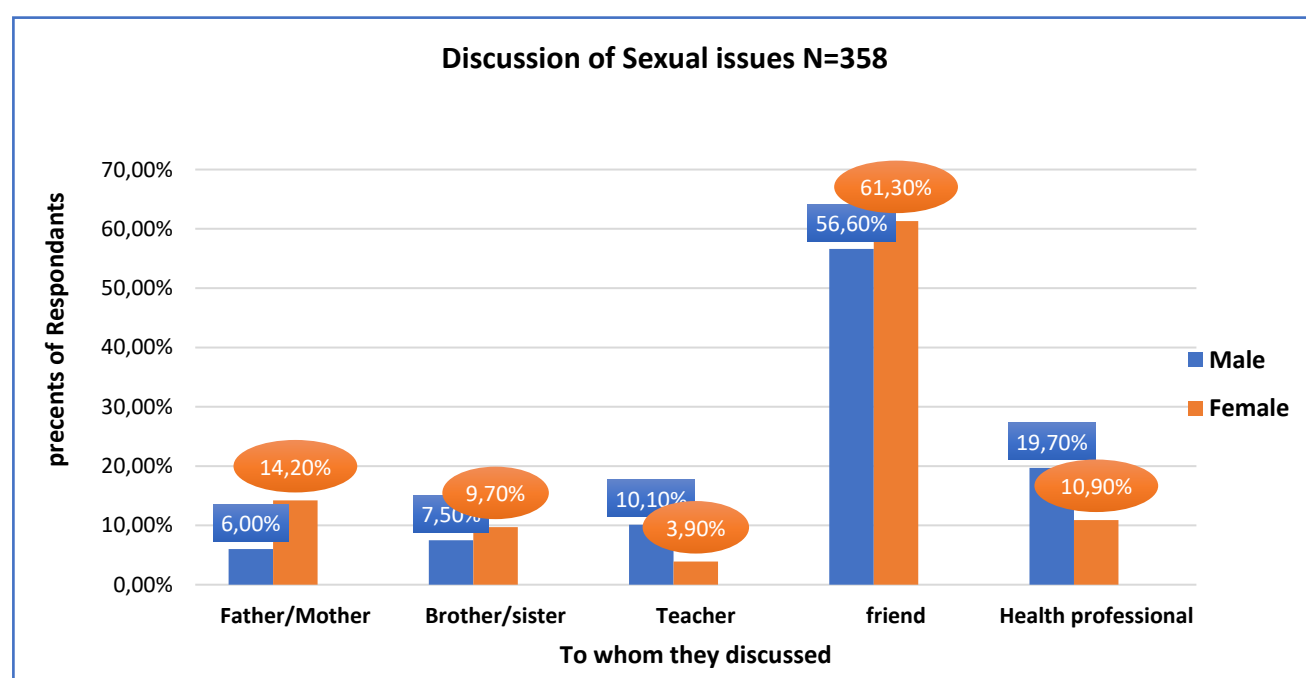


Figure 4.12: Responses of the respondents on who they have discussed sexual reproductive issues.

Table 4.8: The respondents discussed sexual issues with their families and others.

Variables	Male (N=265)		Female (N=128)		Total (N=393)		OR(95%CI,adjusted)	
	Number	%	Number	%	Number	%		
Discussion of SRH issues								
Yes	246	92.8	112	87.5	358	91.1	0.541	0.268,1.090
No	19	7.2	16	12.5	35	8.9	1	
Total	265	100	126	100.0	393	100		

To whom they discussed	Multiple Response							
	Male		Female		Total			
	Number	%	Number	%	Number	%		
Father/mother	23	6.0	22	14.2	45	8.3		
Sister/brother	29	7.6	15	9.7	44	8.1		
Teachers	39	10.3	6	3.9	45	8.3		
Friends	218	57.5	95	61.3	313	58.0		
Physician/health professional	70	18.6	17	10.8	93	17.3		
Total	309	100.0	155	100.0	464	100		

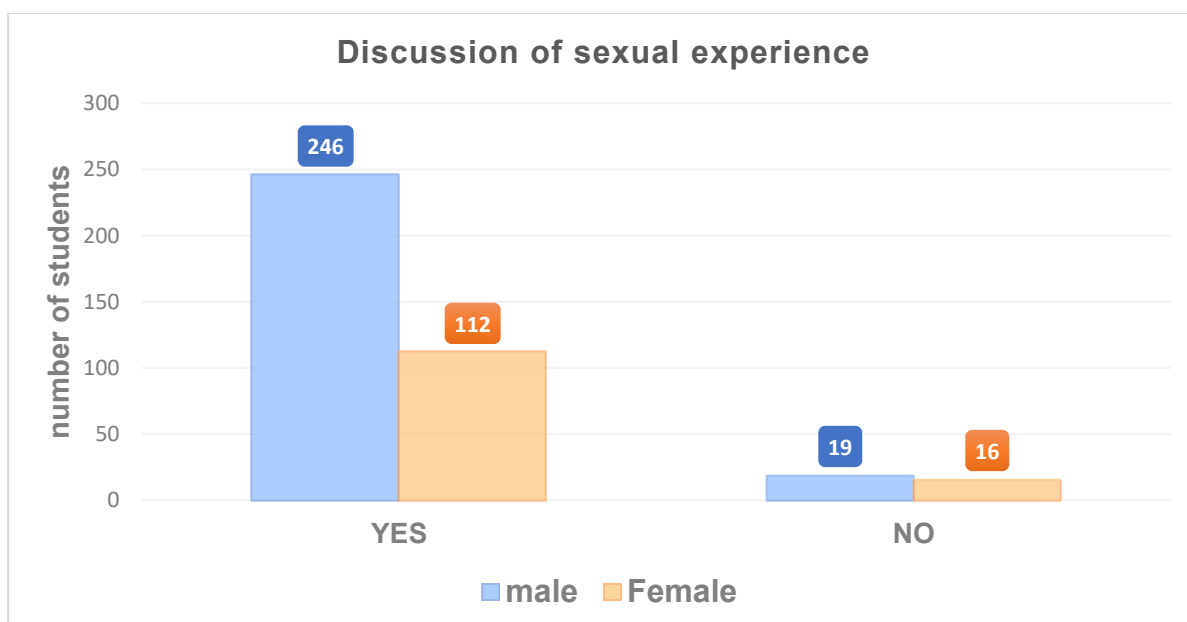


Figure 4.13: Responses of the respondents about their sexual experience discussion (N=393)

4.2.6 The experiences of respondents attending sexual and reproductive health courses at university and their perceptions regarding sexual and reproductive health

An assessment of the experience of the respondents attending sexual and reproductive health courses revealed that the majority (306) (77.9%) did not attend any sexual reproductive courses in university (AOR=1.263). The remaining 87 (22.1%)

did attend sexual reproductive health courses. Regarding the respondents' perceptions on sexual reproductive health as university students, 16.8% stated the need for a supply of contraception and instructions, 16.2% mentioned the need for clinics to treat reproductive health problems, 17.8% emphasised the importance of sexual reproductive health education, and 15.8% reported receiving reproductive health information through a digital platform. These findings, as summarised in Table 4.10, shed light on the attitudes and experiences of the youth towards sexual and reproductive health education.

Table 4.9: Respondents' response towards experiences of sexual reproductive health course in university

Variables	AAU(N=218)		KUE (N=100)		AASTU (N=75)		Total N=393	
	Number	%	Number	%	Number	%	Number	%
University. SRH course								
Yes	49	22.5	20	20.0	20	13.3	87	22.1
No	169	77.5	80	80.0	57	86.7	306	77.9
Total	218	100.0	100	100.0	75	100.0	393	100.0

The responses regarding the approaches to be used to introduce sexual and reproductive health education into the programme varied among the respondents. The majority of the respondents (70.5%) reported that if it could be introduced into the existing courses, while the remaining 29.5% reported that it should be a stand-alone course as these were highly ranked mostly, as shown in Figure 4.14.

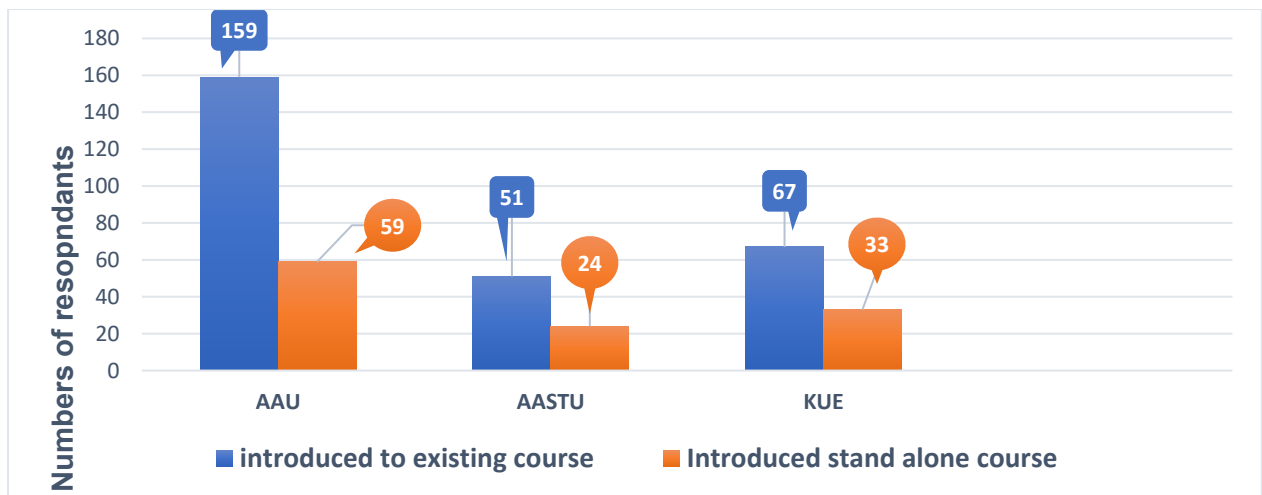


Figure 4.14: The respondents' perceptions of how to introduce SRH education into their program for university students (N=393)

The perceptions towards sexual reproductive health services that should be provided for university students were assessed and their responses are presented in Figure 4.15.

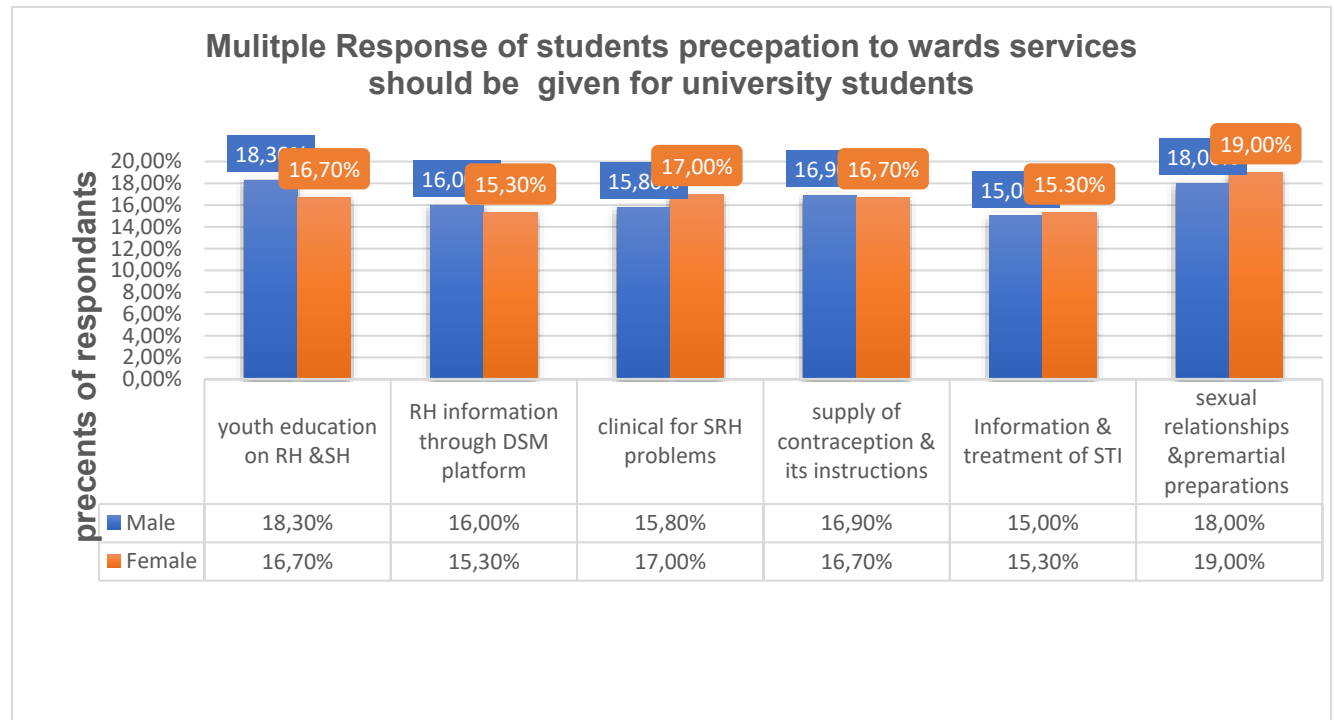


Figure 4.15: Response on the respondents' perceptions towards SRH that should be provided for university students (N=393)

4.2.7 RELATIONSHIP BETWEEN THE IMPORTANT VARIABLES IN THIS STUDY

In order to demonstrate a strong relationship between two variables, it is important to use statistical techniques that accurately reflect the type and strength of the relationship. Different strategies can be employed, depending on the type of data and the nature of the relationship (Nwinyi, 2022:236). These techniques offer unique insights into the relationship between variables, which range from correlation coefficients to more complex statistical models (Nesterenko, 2021:230). The frequency of using digital networks, a lack of knowledge, or inadequate education on sexuality and sexual reproductive health issues, and their correlation to the risk of engaging in sexual behaviour, were all significant factors in this study.

- Correlations

Correlation, in its broadest sense, is a measure of the association between variables. The Pearson Correlation Coefficient was utilised to test the hypothesis in this section. The hypothesis under examination is that a linear relationship exists between two dependent and independent variables, as suggested by the correlation coefficient (r). On the other hand, the null hypothesis posits that no linear relationship exists between the two variables. As with all hypothesis tests, the goal is to reject the null hypothesis and accept the alternative hypothesis (Schober, Patrick, & Christa, 2018:126). The interpretation of the value "R" proposed by Guilford (1956) is as follows: In correlation methods, it is stated that the null hypothesis is rejected when the indication of the association is statistically significant at the 0.05 level. Specifically, if the degree of significance is less than 0.05, then the null hypothesis (H_0) is rejected, indicating an effect.

In this study, a relationship exists between family education level and various factors related to digital social network usage and sexual reproductive health problems. Family education level was found to be negatively correlated with the frequency of DSN usage and sexual reproductive health problems, with correlation coefficients of -0.230 and -0.207, respectively, at a 95% confidence interval. On the other hand, the respondents' digital social network usage showed a positive correlation with watching films about sexual activity and a negative correlation with receiving SRH services at a university, with correlation coefficients of 0.230 and -0.188, respectively. Furthermore, pornographic images and films depicting sexual activity were positively correlated with the respondents' histories of engaging in sexual activity and experiencing reproductive issues, with correlation coefficients of 0.263 and 0.206, respectively, at a 95% confidence interval. The study also revealed a positive correlation between viewing pornographic images and films depicting sexual activity and the respondents' histories of engaging in sexual activity and experiencing reproductive issues, with correlation coefficients of 0.263 and 0.206, respectively, as summarised in Table 4:12.

- Regression

Regression analysis is essential when studying variables that are correlated with the dependent variable. The analysis helps to confirm if the hypotheses based on correlation are valid. The interpretation is based on the standardised coefficient beta and R squared, showing the relationships between variables. Multiple regression, an extension of simple linear regression, was used in the study to forecast the value of a variable using multiple other variables (Burns & Bush, 2000). In this research, the independent variable sought to predict digital social network usage, while the dependent factors included healthy sexual issues, reproductive health problems, and the availability of SRH services at universities (AOR=2.133) (1.378-3.302) (95%CI). The findings helped the researcher to understand and analyse the relationships between the variables.

- Coefficient of Determination

The coefficient of determination indicates how well an equation can explain a phenomenon. It quantifies the variation in the independent variables that can be attributed to the dependent factors of sexual risk behaviour of this study.

4.2.8 Binomial and multinomial logistic regression of selective variables

Logistic regression was conducted to determine how the frequency of digital social network usage and the absence of sexual reproductive health-related courses in university affect the students' likelihood of engaging in risky sexual activity. A total of 393 students were included in the analysis. The model accounted for 48% of the variability in risky sexual behaviour and accurately classified 58% cases.

For each additional increase in the frequency of digital social network use, there was a 2.266 increase in the odds of students engaging in risky sexual practices. Additionally, the absence of sexual reproductive health courses in a university is associated with a 13% increase in the likelihood of viewing sexual films, with 55% of the cases correctly classified. Furthermore, each additional increase in digital social network usage frequency was linked to a 1.655 increase in the odds of the youth engaging in sexual intercourse. This is summarised in Table 4.12.

Table 4.10: shows crude and adjusted odds ratio from logistic regression, factors associated with risky sexual and reproductive health practice among university students (n=393)

Variables	Category	Risky sexual reproductive health		COR(95%CI)	AOR(95%CI)	P value
		Yes (%)	No(%)			
Program of study	Undergraduate	167(48.8%)	175(51.2%)	1		
	Postgraduate	37(72.5%)	14(27.5%)	0.93(0.33-0.265)	0.75(0.19-0.829)	P<000*
Residence	Dormitory	195(56.0%)	153(44.0%)	1		
	Off dormitory	31(68.9%)	14(31.1%)	0.576(0.296-1.120)	1.283(0.421-3.9091)	P<0.66 2
Parents educational level	No formal education	39(52.7%)	35(47.3%)	2.737(1.396-5.365)	0.604(0.275-0.922)	P<0.00 3*
	Primary education	42(62.7%)	25(37.3%)	2.632(1.256-5.523)	0.840(0.39-1.788)	P<0.01 0
	Secondary education	30(71.4%)	12(28.6%)	1.768(.984-3.178)	0.543(0.211-1.350)	P<0.57
	high school	39(72.2%)	15(27.8%)	1.173(.674-2.041)	0.558(0.25-1.235)	P<0.57 2
	University/college graduate	76(48.7%)	80(51.3%)	1		

Smartphone	Access	183(51.7%)	171(48.3%)	2.687(1.239-5.826)	0.451(0.166_1.229)	P<0.012
	Not	21(53.8%)	18(46.2%)	1		
Digital Social network	Used	173(63.1%)	101(36.9%)	2.133(1.378-3.302)	0.476(0.271-0.836)	P<001*
	Not	53(44.5%)	66(55.5%)	1		
Sexual inflicting picture	Accessed	45(72.6%)	17(27.4%)	0.456(0.251-0.829)	0.329(0.150-0.724)	P<006*
	Not	181(54.7%)	150(45.3%)	1		
Seen sexual film	Yes	144(69.9%)	62(30.1%)	0.336(0.222-0.509)	0.339(0.177-0.650)	P<001*
	No	82(43.9%)	105(56.1%)	1		
Seen pornographic film	Yes	121(70.3%)	51(29.7%)	1.063(0.858-2.084)	0.382(0.251-0.581)	P<000*
	No	105(47.5%)	116(52,5%)	1		
Poste selfie photos on digital social network	Posted	77(72.0%)	30(28.0%)	0.858(0.542-1.063)	0.424(0.262-0.686)	P<000*
	Not	149(52.1%)	137(47.9%)	1		
Sexual issue discussion with parents	Discuss	22(48.9%)	23(51.1%)	1		
	Not	189(60.0%)	126(40.0%)	1.568(0.838-2.934)	0.811(0.364-1.807)	P<0.609

Peer pressure	Yes	191(61.0%)	122(39.0%)	2.618(1.181-5.807)	0.473(0.254-0.881)	P<018
	No	20(42.6%)	27(57.4%)	1		
Adequate access of sexual and reproductive services in the university	yes	65(74.7%)	22(25.3%)	1		
	No	161(52.6%)	145(57.4%)	0376(0.221-0.640)	0.422(0.221-0.805)	P<009*

4.3 CONCLUSION

In this chapter, the quantitative results from the survey were presented based on the research objectives. The results answered the research questions posed, showing a significant link between family education level, frequency of digital social network usage, availability of YSRH services, and the youth's life circumstances in university. These factors contribute to the vulnerability to sexual and reproductive health risk, which are indicators of risky sexual behaviour that require interventions.

CHAPTER FIVE

PRESENTATION AND DISCUSSION OF QUALITATIVE RESEARCH FINDINGS WITH LITERATURE CONTROL

5.1 INTRODUCTION

This chapter analyses and discusses the qualitative research findings supported by current literature. The findings are based on the qualitative data collected in Phase II of the sequential explanatory mixed method. A total of 15 participants volunteered to be interviewed, and data saturation was reached at the 12th participant in face-to-face semi-structured interviews. The following study objective was addressed:

- To explore the experiences of using digital social networks among university students, to access information about their sexual and reproductive health.

To present the findings, Table 5.1 summarises the themes, sub-themes, and categories precedes the discussion. The discussion is supported by the participants' verbatim quotes, in-text references to the relevant units, and related literature.

5.2 DATA MANAGEMENT AND ANALYSIS

Audio-recorded interviews and field notes were all transcribed verbatim and prepared to be input for thematic data analysis using the ATLAS.Ti version 24 software. As described by Polit and Beck (2020:276), qualitative analysis is considered reductionist in nature, and the process involves moving from specific details to more general conclusions, with multiple levels of coding analysis (Theron, 2015:4). The following two major themes emerged from the analysis:

- Theme 1: Experiences of the participants on the use of digital social network for sexual and reproductive health.

- Theme 2: Suggested improvements on the use of digital social network for sexual and reproductive health.

Table 5.1 presents these themes, sub-themes and categories that emerged from the data analysis.

Table 5.1: Themes, sub-themes, and categories

Themes	Sub-themes	Categories
Experiences on the use of DSN for sexual and reproductive health	Support and social networking	✓ Means of communication with friends and family; ✓ gain new friends for socializing ✓ gaining advice on use of digital social network and its dangers ✓ Exchanging ideas, resources online
	Great source of information	✓ Rich information on sexuality and reproductive health; ✓ Awareness about risky sexual practices; ✓ Live videos on reproductive health-related issues
	Platform for information exchange	✓ Group lessons on Telegram; ✓ Live discussions on TikTok ✓ Advises on healthy sex performance, sexually transmitted diseases, and prevention methods
	Risk factors	✓ Internet access with no family control/supervision at university level, ✓ Digital social network addiction and over-indulgence (Watching sexual explicit videos, films or games) ✓ Little time on academic issues

		✓ Peer influence on risky behaviour (alcohol, clubbing) ✓ Involvement on risky sexual behaviour (Multiple partners, premature sexual activities, unsafe sex) ✓ Teen pregnancy, Abortion, STIs ✓ Poor academic progress
Suggested improvements		
	Orientation program at university entry level using senior students; Use health experts in a services office that monitors the reproductive health of young people Inclusion in the curriculum	✓ An adequate supply of information and awareness; ✓ University guidelines for digital social network ✓ Continuously student counseling office ✓ Get training for students ✓ As common course on existing course ✓ Use digital social network like Telegram for lessons on SRH

- Participants' demographic profiles

The majority of study participants were male (66.6%) and postgraduate students (58.3%), with ages between 23 and 25 years (75%), as shown in Table 5.2.

Table 5.2: Demographic profiles of the participants (n= 12)

Demographic variables	Frequency	percent (%)
Gender		
Male	8	66.6 %
Female	4	33.4 %
Total	12	100%
Age catégories		
20 -22years	3	25%
23-25years	9	75%
Total	12	100%
Programme of study		
Undergraduate	5	41.7%
Post graduate	7	58.3%
Total	12	100%
Year of study		
1 st year	3	25%
2 nd year	2	16.6%
3 rd year	2	16.6%
4 th year	5	41.6%
Total	12	100%
University enrolled		
University A	5	42%

University B	4	33%
University C	3	25%
Total	12	100%

5.3 Themes, sub-themes, and categories

5.3.1 Theme 1: Experiences on the use of digital social network for sexual and reproductive health

Based on the in-depth interviews conducted with the participants from three public colleges (A, B, and C), this theme focuses on the participants' experiences of using DSN for sexual and reproductive health. This interview revealed four main sub-themes: valuable sources of information, support and social networking; a platform for exchanging information; and the risks associated with digital social network. Through enhanced education, greater accessibility, and increased engagement, digital social network has become a crucial tool for enhancing SRH. However, its effectiveness relies on the quality of content shared by users and their platform strategy (Attilio, Anastasi & Penna 2023:102). The categories of the sub-themes are presented in Table 5.3.

Table 5.3: Theme 1: Experiences on the use of digital social network for sexual and reproductive health

Themes	Sub-theme	Categories
Experiences on the use of DSN for sexual and reproductive health	Great source of information	✓ Rich information on sexuality and reproductive health; ✓ Awareness about risky sexual practices; ✓ Live videos on reproductive health-related issues
	Support and social networking	✓ Means of communication ✓ socializing ✓ advice on risk of digital social network use

		✓ Exchanging ideas and resources online
	Platform information exchange	✓ Group lessons on Telegram;and Live discussions on TikTok ✓ Advises on health sexuality and STI prevention methods
	Risk	✓ Internet access with no family control/ supervision ✓ Peer influence on risky behaviour (alcohol, clubbing) ✓ Involvement on risky sexual behaviour like Multiple partners, premature sexual activities, unsafe sex),Teen pregnancy, Abortion, STIs.

5.3.1.1 Sub-theme 1.1: Great source of information

Overall, the findings from the study indicate that digital social network has become a significant source of information for SRH that offers both opportunities and challenges. Three categories emerged from this sub theme, namely, rich information on sexuality and reproductive health; awareness about risky sexual practices; and live videos on reproductive health-related issues.

5.3.1.1.1 Category 1.1.1: Rich information on sexuality and reproductive health

The participants expressed that for reproductive health awareness, digital social network is a great source of information. They stated that,

“In my view,university students points to digital social network as a great source of information for sexual and reproductive health awareness.” (UG 3rdyear M participant)

“About sexually transmitted diseases and precautions.I get the benefits from digital social network “ (UG 2nd year F participant)

5.3.1.1.2 Category 1.1.2: Awareness about risky sexual practices

The participants indicated that digital social network gives rise to the awareness about risky sexual practices and also prevents them from engaging in unwarranted addiction and uncontrolled sexual behaviour. According to one participant,

"Digital social network has helped me overcome unnecessary addictions and uncontrolled sex addictions" (PG 2nd year M participant)

5.3.1.1.3 Category 1.1.3: Live videos on reproductive health-related issues

The participants expressed that they watch live videos discussion of sexual and reproductive issues with their friends. They were quoted as follows:

"I also had live discussions with my friends on TikTok about sexual reproductive health".(UG 2nd year F participant)

"with my friends we often talk about everything interesting health sex performance ,sexual transmitted disease and prevention methods" (PG 2nd year M participant)

5.3.1.2 Sub-theme 1.2: Support and social networks

According to this study, social media support is facilitated by the interactive features of social media which allow users to connect with individuals who share similar interests or experiences. These can be categorised into the following four categories: means of communication; socialising; advice on risk of digital social network use; and exchanging ideas and resources online.

5.3.1.2.1 Category 1.2.1: Means of communication

The majority of the participants stated that using digital social network to communicate with family members and people who share their interests has helped them to become more self-aware about risky sexual practices. They stated that,

"I use Telegram for various purposes such as communication with my friends. With my friends, we ask each other questions and share about sexual reproductive health." (UG 2nd year M participant)

"We get know different people and exchange idea " (UG 3rd year F participant)

5.3.1.2.2. Category 1.2.2: Socialisation

A number of participants claimed that digital social network facilitates the formation of social identities and educational engagement. According to one participant,

“We get to know different people and we exchange ideas about sexual transmitted disease and its prevention “ (UG 1st year M participant)

5.3.1.2.3 Category 1.2.3: Advice on risk of digital social network use

The participants expressed that they get advice on risk of digital social network use on sexual and reproductive health from senior students or family members. They were quoted as follows:

*“I had a good understanding of risky sexual reproductive health from my Mom”
(UG 1st year F participant)*

“Of course, my dad advised me on everything about university life and how to navigate the university environment” (UG 2nd years M participant reported).

“Senior students advised me not to use digital social network frequently “ (UG 1st year F participant)

5.3.1.2.4 Category 1.2.4: Exchanging ideas and resources online.

When the youth use these social media platforms for daily activities, they can exchange and create new concepts and ideas that are relevant to their sexual reproductive health, which are useful for their knowledge on SRH. According to the participant,

“We create such lessons in group Telegrams and ask questions. Because sometimes embarrassing sexual acts are easier when we talk about them online”.(UG 3rd year F participant)

5.3.1.3 Sub-theme 1.3: Platform information exchange

Digital social networks are used as a tool for exchange of various health-related and academic issues among the participants in the university. Two categories emerged from this sub-theme, namely, group lessons on Telegram and live discussions on TikTok; and advise on healthy sexuality and STI prevention methods.

5.3.1.3.1 Category 1.3.1: Group lesson on telegram and live discussion on TikTok

The majority of the participants used Telegram, TikTok, and YouTube to obtain information regarding sexual reproductive health and education relevant to their study programs. A small percentage of the participants also claimed to have acquired knowledge about sports and engaged in conversation and shared ideas on Facebook.

One participant reported that they created a group on Telegram that provided advice to students with various sexual reproductive problems. They also promoted peer-to-peer online discussions about sexual reproductive health and education-related issues. The participants noted that the majority of the students participating in the group shared different sexual reproductive issues. Most of the participants revealed that *"sometimes embarrassing sexual acts are easier to talk about online."* Some were quoted as follows:

"We create such lessons in group Telegrams and ask questions. Because sometimes embarrassing sexual acts are easier when we talk about them online".(UG 2nd year F participant)

"specially with my friends, we often talk about everything interesting, healthy sex performance, sexually transmitted diseases, and prevention methods" (PG 2nd year M participant)

5.3.1.3.2 Category 1.3.2: Advice on healthy sexuality and STI prevention methods

The participants expressed that they get advice on healthy sexuality and STI prevention from various digital social networks and they are aware of its transmission and perversions. Paul and Banker-Thomas (2022:178) revealed that young people's awareness of sexual and reproductive health is highly correlated with their exposure to social media. According to one participant,

"with my friends, we often talk about everything interesting, healthy sex performance, sexually transmitted diseases, and prevention methods" (PG 1st year M participant)

5.3.1.4 Sub-theme 1.4: Risks

Most participants stated that social media and other digital social networks pose a number of risks to college students which affect their social connections, academic performance,

mental health, and sexual and reproductive health. One major concern is the high rate of social media addiction among youths. The following three categories emerged from this sub-theme: internet access with no family control or supervision; peer influence on risky behaviour; and involvement on risky sexual behaviour.

5.3.1.4.1 Category 1.4.1: Internet access with no family control or supervision

Most participants reported using unrestricted internet access without supervision. Therefore, a lack of parental supervision or control over adolescent and youth internet use can result in several risks and difficulties. Unsupervised internet use is linked to a higher risk of cyberbullying, problematic technology use, and other online hazards, according to research by Fábila, Oliveira, Rodrigues, Maruco, and Rampazzo (2020:35). Although many families find it difficult to put in place efficient monitoring techniques, parental supervision is essential in reducing these hazards. They stated that,

“we spend a lot of time using it, following different films and playing live games and we give little time to their lessons”. (UG 1st year F participant)

“I saw my friends spending their time on DSN following various films and playing live games.” (UG 3rd year male participant)

The impact of the increasing social media use on college and university students' academic performance was documented by Amin, Mansoor, Hussain, and Hashmat (2016:22). Many respondents stated that without parental supervision or family control, using digital social network at a university poses a risk to one's sexual and reproductive health. Some students, due to their addiction to sexually explicit movies and images and their susceptibility to digital social network, often prioritise using these platforms over their academic responsibilities.

Iliyasu, Mohammed, Gajida, Jibo, and Aliyu (2017:138) indicate that students in resource-limited settings have become increasingly reliant on the internet as a source of sexual reproductive health information compared to previous generations, whose favourite source was family members.

Most participants reported having easy access to the internet at the university and using various social media platforms without parental supervision. According to the responders, some students use digital social network platforms for an extended time.

5.3.1.4.2 Category 1.4.2: Peer influence on risky behaviour and Involvement on risky sexual behaviour

The majority of the participants indicated that their peers encouraged them to engage in risky sexual practices. Linlin's (2023:753) study found that peer pressure has a significant impact on youths engaging in dangerous sexual conduct. Abdulahi, Samadi, and Gharleghi (2014) found that students who use their phones during class tend to pay minimum attention to the lectures. Consequently, missing out on important information during lectures can negatively impact their academic performance. This not only affects the students' future but also the reputation of the university (Kelleher & Moreno, 2020:619). The risks associated with digital social media network include negative health consequences which are related to sleep, as well as relational risks such as sexting, bullying, unwanted predation, and engaging with risky sexual partners. The participants were quoted as follows:

"I saw my friend with whom I had lived indoors for two years, he used to chat all night and eventually started frequenting nightclubs, he was eventually dismissed from the university" (UG 3rd years F participant).

"Before joining the university, I knew nothing about sex. I frequently used digital social network to watch sexually provocative videos and photos. Pressured by my friends, I started drinking and visiting a nightclub, and as a result, I ended up with urethral discharge. I told my dad who immediately came from Dire Dawa and took me to a private hospital where I was treated and advised by doctors" (UG 2nd year M student council).

"I saw my friend whom I had lived with indoors for two years, chatting all night every day. She became pregnant and was disqualified from the class after three years of study" (UG 3rd year F participant)

5.3.2 Theme 2: Suggested improvements on the use of DIGITAL SOCIAL NETWORK for sexual and reproductive health

This theme focuses on guiding the youth in university settings on the appropriate use of digital social network for sexual and reproductive health. The following three sub themes

emerged: peer orientation programs at university entry; monitoring services provided by health experts; and the inclusion of sexual and reproductive health education in the curriculum. Table 5.4 summarises the theme, sub-themes, and categories that emerged from the data.

Table 5.4: Theme 2: Suggested improvements on the use of digital social network for sexual and reproductive health

Theme	Sub-themes	categories
Suggested improvements	Orientation program at university entry level using senior students	✓ Adequate supply of information and awareness; ✓ University guidelines for digital social network
	Use health experts in a services office that monitors the reproductive health of young people	✓ Continuous student counselling office ✓ Getting training for students
	Inclusion in the curriculum	✓ As a common course on the existing courses ✓ Using digital social network like Telegram for lessons on SRH

5.3.2.1 Sub-theme 2.1: Orientation programme at university entry

An induction programme for new university students focusing on digital social network and sexual reproductive health is a key tool for preventing risky sexual behaviors. Two categories emerged from this sub theme, namely, adequate supply of information and awareness; and university guidelines for digital social network.

5.3.2.1.1 Category 2.1.1: Adequate supply of information and awareness

According to the participants, it is necessary to provide sufficient information to young people about healthy reproduction by opening a Telegram group. From the time the students arrive on campus, there is a need to provide a thorough understanding of the use of digital social network and its pros and cons. It is necessary for the students to be

well-informed so that they do not engage in unnecessary actions, such as prematurely engaging in sexual activity and jeopardising their studies. According to the participants,

"It is necessary to educate students thoroughly about the benefits of digital social network, such as an interdependent office for youth-friendly health services." (UG 4th year M participant)

"Caution about the effect of digital social network not enough, much attention be given to university student healthy sexual behaviors and reproductive health"(UG 4th year F participant)

5.3.2.1.2 Category 2.1.2: University guidelines for digital social networks .

The participants suggested that universities should have delivered standard information and reputable social networking sites for their students through their own web pages.

Colleges are increasingly recognising the importance of establishing comprehensive policies for using digital social network to enhance recruiting, communication, and academic outcomes while minimising risks. Adhering to these guidelines is essential for maintaining professionalism, protecting the institution's reputation, and ensuring the accurate dissemination of information (Gisele, Neiva, Jennifer, Hasslen, & Kumar, 2023:10).

5.3.2.2 Sub-theme 2.2: Use health experts in a services office that monitor the reproductive health of young people

Most of the participants suggested that a sexual and reproductive service office and health professional experts should be available in the university to support students. On sexual reproductive risks, the following two categories emerged from this sub-theme: continuous student counselling office; and getting training for students.

5.3.2.2.1 Category 2.2.1: Continuous student counselling office

In order to meet the diverse needs of the students which range from career counselling to mental health and reproductive health assistance, universities should continue to maintain their student counselling offices. By providing specialised services that cater to both individual and group needs, these offices play a crucial role in enhancing the students' academic performance and overall well-being (Daciana & Lupu, 2023:147). The

participants expressed that an independent office of sexual reproductive health services should be available. This would help the students to gain a better understanding by inviting experts in the field to educate them on healthy reproduction. Ultimately, this would prevent the students from engaging in unnecessary actions, such as prematurely engaging in sexual activity and jeopardising their studies. According to one participant,

"A services office that monitors the reproductive health of young people in hospitals and health centers should function in universities and encourage those who have them to work well. It looks like this, thank you." (PG 2nd year M participant)

5.3.2.2.2 Category 2.2.2: Getting training for students

To improve access to SRH among young people in resource-poor countries, it is important to provide standardised information; customise and tailor information to local cultures and values; and provide for interactivity, privacy, autonomy, portability, and cost-effectiveness (Iliyasu, Mohammed, Gajida, Jibo, & Aliyu, 2017:145).

The majority of the participants reported very low experience in using digital social network for reproductive health, with the level varying based on whether they joined a university in an urban or rural area. Students coming from urban areas tend to have higher knowledge of using digital social network for reproductive health services compared to those from rural areas. The participants also noted that their experiences with digital social network usage were influenced by the information which they received about sexual reproductive health from family members and guidance provided by friends or senior students.

High education level parents can use social Network in a constructive and useful way by showing their children the different ways that it can be used as a platform for interactive and instructive activities. It can also be a tool for having honest conversations about risky reproductive health issues and fostering open communication with youngsters (Fortuna Procentese, Flora, & Immacolata 2019:9).

5.3.2.3 Sub-theme 2.3: Inclusion in the curriculum

Digital social networks and sexual reproductive health issues should be included in university sources, according to the study participants. The following two categories

emerged from this sub-theme: as a common course on the existing courses; and using digital social network like Telegram for lessons on SRH.

5.3.2.3.1 Category 2.3.1: As a common course on the existing courses

Digital media-focused interventions optimise social media's impact on SRH knowledge enhancements for university students. An emerging body of literature suggests a paradigm shift in the information-seeking behaviour of adolescents, where they are likely to receive SRH information from traditional mass media such as print, television, and radio to social media platforms such as Facebook and WhatsApp (Saha, Yaya, & Banke-Thomas, 2022:178).

The majority of participants expressed that digital social network, in relation to sexual reproductive health, should be offered as a required course during the first year of university studies According to the participants,

“At the university level, a lesson on healthy reproduction should be included in the curriculum and given to students in their first year as a common course, according to the participants” (PG 2nd year male student council).

“At the university entry level, lessons on sexual and reproductive health should be included in the curriculum” (UG 3rd year F student council)

5.3.2.3.2 Category 2.3.2: Use digital social network like Telegram for lessons on sexual and reproductive health

The majority of the participants stated the use Telegram and TikTok, explaining that using these platforms to communicate with family members and people who share their interests has helped them to become more self-aware about risky sexual practices. A smaller percentage of the participants said that using digital social network also prevents them from engaging in unwarranted addiction and uncontrolled sexual behaviour. One participant stated that,

“We create such lessons in group Telegrams and ask questions. Because sometimes embarrassing sexual acts are easier when we talk about them online”.(UG 3rd year F participant)

5.4 CONCLUSION

In this chapter, the qualitative results were presented based on the study objective. The results addressed the research questions posed. The findings revealed that the youth have positive experiences with digital social network usage. However, there are significant gaps in selecting reputable sites and accessing appropriate guidance on how to use digital social network, which is linked to risky sexual reproductive health behaviour that require intervention.

CHAPTER SIX

INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS AND DISCUSSION

6.1 INTRODUCTION

The previous chapter discussed about qualitative finding with literature control, This chapter presents the integrated findings of the two phases of the research study, supported by literature. According to Creswell et al. (2018:44), integrating research is grounded in a theoretical framework which suggests that combining qualitative and quantitative data provides insights beyond what each type of data can offer independently. The integration of quantitative and qualitative results in this study follows Creswell's procedures (2017:15) which are outlined in a discussion of combined key findings under the following subheadings: high reliance on social media for sexual reproductive health; influence of digital social network on sexual behaviour; and a lack of guidance on the use of digital social network, which thus leads to the poor utilisation of sexual reproductive health services.

6.2 MAJOR FINDINGS FROM PHASE I AND PHASE II

PHASE I	PHASE II
HIGH RELIANCE ON SOCIAL MEDIA FOR SRH INFORMATION: ✓ 97.5% of people use various social media sites. ✓ 71.6% believe that digital social network provides reliable information on sexual and	EXPERIENCED BENEFICIAL USAGE OF DIGITALSOCIALNETWORK ✓ The majority of respondents visited more than two social medial sites with out unlimited time

reproductive health (SRH), but they don't know the source of this information.	
✓ INFLUENCE OF SOCIAL MEDIA ON ONE'S SEXUAL BEHAVIOURS ✓ 45.8% of the respondents reported that DSN is harmful, while 43.0% reported benefits for youth. The majority of respondents used social media for education and entertainment, while 8.4% used it for viewing sexually explicit content. 52.4% reported seeing sexual activity films ✓ 43.8% reported seeing pornography on digital social network. ✓ 38.4% had a history of sexual intercourse ✓ 9.9% had multiple sexual partners. 35.1% reported that their partner used alcohol in the last six months. ✓ 20.1% reported having reproductive health problem and 16.8% sought medical services.	✓ EXPOSURE TO RISKS THROUGH DSN (DISADVANTAGES) ✓ The majority of respondents mentioned that they enjoy chatting with others who share similar interests but are not aware of any repeatable sites. ✓ In addition, the majority of interviewees stated that risks associated with DSN include negative health outcomes and relational risks, such as sexting, bullying, unwanted predation, and engaging with risky sexual partners. ✓ Furthermore, the majority of in-depth interviewees stated that without parental supervision or family control, using DSN at a university can pose risks to one's sexual and reproductive health
LACK OF GUIDANCE ON THE USE	POOR ORIENTATIO GUIDANCE ON THE

OF DSN HENCE POOR UTILISATION OF SRH SERVICES ✓ 77.9% lack adequate access to sexual and reproductive health (SRH) resources at university, and there is no guide available for accessing digital social network for SRH information. ✓ 70.5% of SRH is incorporated into existing course while 29.5% is introduced as independent course subjects.	USE OF DSN FOR SRH AT THE UNIVERSITY ✓ As students arrive on campus, there is a need to provide a comprehensive understanding of the use of digital social network, its advantages, and disadvantages ✓ The majority of participants reported that their experiences to using digital social network for reproductive health was very low.
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6.2.1 HIGH RELIANCE ON SOCIAL NETWORK FOR SRH INFORMATION

Social media, especially among young people, is becoming an increasingly important source of information on SRH. This trend is mainly driven by social media platforms due to their accessibility and ease of use which offer a wide range of information that is often not available through more traditional methods. However, the reliability and accuracy of this information can vary greatly, leading to potential misinformation and health risks (Antonio & Williams, 2012:33).

In this study, 97.5% of the students use various social media sites, and 71.6% believe that DSN provides reliable information on SRH. However, they do not know the source of this information. A small percentage (8.4%) reported using social media to view sexually explicit content, which is strongly associated with sexual reproductive health (AOR=0.456; 95% CI 0.25 to 0.829). Additionally, the majority of the respondents reported using social media several times a day, with the most commonly used social media platforms being Telegram (AOR=1.358) and Facebook, which is strongly associated with sexual reproductive health risks (AOR=2.13; 95% CI 1.378 to 3.302).

Similarly, the majority of the participants in interviews stated that they had visited different social media sites and spent more time on social media. They explained that at university, there is unlimited internet access and no fear of family interruptions. This is similar to recent research statistics which suggest that 92% of adolescents go online daily, 89% belong to at least one social networking site, and 88% have access to a cell phone (Cipolletta Malighetti & Spoto, 2020:695). Recent studies conducted in northern and southern Nigeria found that 98.4% had accessed the internet. Of these, 96.3% had visited social media sites and 99.3% accessed the internet. Iliyasu, Mohammed, Gajida, Jibo and Aliyu (2017:138) and Arulogun, Ogbu and Dipeolu (2016) support this finding.

The studies conducted at universities in Ethiopia show that 91.3% of the respondents at Madda Walabu University were reported as social media users in the country (Wanamo, Abadir, Dargie, & Alemayehu, 2021: 216). Additionally, 87.5% of students at Oda Bultum University have access to various social media accounts (Bayleyegn & Buta, 2019: 45). This percentage is slightly lower than the study finding of 92.1% vs. 87.5%, which may be attributed to the universities' locations, which are far from the centre of Ethiopia, leading to inadequate internet access.

Quantitative findings of this study are similar to those of a study conducted at a private university in southern Nigeria. Almost equal numbers of respondents used DSM, with 72.7% accessing news, 63.6% for academics, and 6.5% for sexually explicit content (Nnebue, Duru, Uzoh, Udor, Saladeen, & Okonkwo, 2020:11). However, there was a difference in the use for watching sexually explicit content, with 8.4% vs. 6.5%, which may be attributed to the sample size of the study.

A study in Ethiopia by Bayleyegn and Buta (2019). supported that students used social media for non-academic issues (53.5%), academic issues (44.64%), and exchanging sexually related video content (10.7%). Male respondents used DSM more frequently than female respondents (76.1% vs. 23.9%).

A recent survey at Raya University in Ethiopia contradicted this finding, showing that 53% of female students spent two to three hours a day on social media for entertainment rather than academic goals (Abrha, 2019:15). The study at Wollo University showed that the majority of the students used social media platforms like Telegram, Facebook, Email, and

YouTube for teaching and learning (Awoke & Zikargae, 2023). However, studies by Bayleyegn and Buta (2019) (85.7% vs. 60.7%), Wanamo, Abadir (2021) (69.8% vs. 60.7%), and Lisanu (2020) contradicted this, suggesting that many students preferred using Facebook for educational purposes. This difference may be due to institutional and personal variations in the students' preferences for DSN platforms on campus.

Earlier research in Ethiopia among university and secondary school students found that having a nearby health facility and discussing SRH with friends and family were important predictors of service consumption. Many students turned to the media to learn about SRH (Awoke & Zikargae, 2023).

This study revealed that 68.2% of the students easily accessed sexual and reproductive health information from DSN, and 71.6% believed that digital social network provided reliable information about SRH, although they were unsure about reputable sites. Similarly, in Ethiopia, most students preferred receiving SRH information from mass media (57.1%), followed by peer educators (28.2%), and close friends (26.8%) (Chekol, Sheehy, & Siraneh, 2023:127). The internet was the most accessed source for SRH information (Vamos, Thompson, Logan, Perrin, Merrell, & Daley, 2020:88).

6.2.2 INFLUENCE OF SOCIAL MEDIA NETWORK ON SEXUAL BEHAVIOURS

Social media has a significant influence on individuals' sexual behaviors, particularly among adolescents and young adults. The exposure to unregulated and often explicit content on these platforms can shape sexual attitudes and behaviors, leading to both positive and negative outcomes. While social media can offer sexual health information, it also poses risks by promoting risky sexual behaviors through exposure to inappropriate content (Jackson, Langat, Gladys, Jerobon, & Kiptiony, 2024:523).

This study shows that students enrolled in undergraduate programs are associated with sexual reproductive risk (AOR=0.93; 95% CI 0.33 to 1.265). This finding is consistent with a similar study conducted at Adekunle Ajasin University. Observations over the past decade suggest a significant increase in the proportion of undergraduate students engaging in sexual activity during their time at the university (Ajidahun, 2017:117-122). Young people whose parents had no formal education are significantly linked to sexual

reproductive risk (AOR=2.737; 95% CI 1.396 to 5.365) compared to those whose parents had a high level of education

A comparable study done in Vietnam on higher education institutional students revealed that the parents' educational level is indirectly associated with sexual reproductive risk. An educated family decreases the risk of sexual reproductive health (AOR=1.7; 95% CI) (Vongsavanh, Lan, & Sychareun, 2020).

In this study, half of the respondents (45.8%) reported experiencing harmful effects of DSN (AOR=1.576), while 43% found it beneficial for youths. The reasons cited for the risks of digital social network included harmful relationships and communication (29.75%), early initiation of sexual intercourse (26.1%), encouragement of peer pressure (23.4%), promotion of multiple sexual partners, and spreading rumour (20.8%). Additionally, the respondents mentioned that digital social network is important for communication with friends and family (26.9%), obtaining health information (27%), and meeting people with similar interests for happiness and entertainment (24.1% and 22.1%, respectively).

Similarly, the qualitative findings showed that the majority of the respondents stated that using digital social network to communicate with family members and individuals who share their interests has helped them to become more self-aware of risky sexual practices. A smaller percentage mentioned that digital social network also prevents them from engaging in unwarranted addictions and uncontrolled sexual behaviour. However, the majority of the participants stated that without parental supervision or family control, using digital social network at a university poses a risk to one's sexual and reproductive health. Some students, due to their addiction to sexually explicit movies and images and their susceptibility digital social network, often prioritise using these platforms over their academic responsibilities.

Even though some studies have suggested that digital social network may negatively impact young adults' sexual behaviour, there are advantages to digital social network for adolescents and young people in terms of providing essential information on sexual health and healthy relationships (Brown, 2002; Stern & Handel, 2001; Werner-Wilson,

2004). digital social network platforms often include sex-related content that is not thoroughly researched or education-focused. The internet can randomly direct visitors to unhealthy, purely entertainment-oriented, and sexually explicit websites even when not requested (Nnebue, Duru, Uzoh, Udacor, Salaudeen, & Okonkwo, 2020: 13).

A recent study conducted in Ethiopia supported the benefits of DSN for school assignments (20%), making new friends (25%), and using social media for entertainment (55%) (Bayleyegn & Buta, 2019: 45-53). This suggests that most adolescents in the survey are aware of the benefits of digital social network for youth reproductive health information. However, 45.8% reported the harmful effects of digital social network. This aligns with the findings of Kunnuji (2012), who revealed that 44% of students using digital social network had unintentionally accessed websites with sexual content, while 46% admitted to engaging in sexual activities, including viewing pornography online and participating in sexually stimulating acts.

In this research, a small number (8.9%) of students did not discuss sexual reproductive health-related issues with anyone, which is associated with a higher sexual reproductive risk (AOR=1.568; 95% CI 0.838 to 2.089). In-depth interviews revealed that the majority of the participants in the group shared various sexual reproductive issues. Additionally, half of the respondents mentioned that "*sometimes embarrassing sexual acts are easier to talk about online,*" and thus supporting the aforementioned finding.

A recent study in Vietnam supported this finding, showing that students with parents who communicate about sexual reproductive issues have a lower risk of sexual reproductive health issues (AOR=2.1; 95% CI) (Vongsavanh, Lan, & Sychareun, 2020). However, a study in Ethiopia contradicts this finding, with 70.4% of the respondents reporting no open discussion on sexual issues within their families, and lacking sexual and reproductive health education at school (Habesha, Aderaw, & Lakew, 2015:11-12). This discrepancy may be due to the studies being conducted among adolescents in secondary high schools rather than universities.

This study found that nearly an equal number of the respondents reported seeing sexual activity films and pornography on digital social network (52.4% vs. 43.8%), which is strongly associated with sexual reproductive health risk (AOR=0.333; 95% CI 0.22 to

0.509 vs. AOR=1.063; 95% CI 0.838 to 2.934). The majority of the participants stated that the risks associated with digital social network include negative health consequences related to sleep, as well as relational risks such as sexting, bullying, unwanted predation, and engaging with risky sexual partners.

A study in India revealed that one of the most common ways that young people obtain sexual knowledge is through mass media, especially DSN, where a growing percentage are using online pornography, which is a significant risk factor for unhealthy sexual behaviour (Khaleghi Kia-Delhi, 2016:212). Another study in Hawassa, Ethiopia, showed that overall exposure to sexually explicit materials in school youths was 77.2% (Binu & Sinaga, 2018:9-10). These variations could be explained by differences in methodologies, study subjects, sampling procedures, and data collection techniques.

In this research, 38.4% of the respondents had a history of sexual intercourse, with 9.9% of them having multiple sexual partners, and 19.1% using a condom in the last six months. A systematic review and meta-analysis study conducted in Ethiopia on the risky sexual behaviour of the youth by Amare, Yeneabat, and Amare (2019) revealed a higher percentage of 42.1%, compared to this study. One possible explanation is that they included research conducted on high school adolescents. A comparable study in Nigeria by Arulogun, Ogbu, and Dipeolu (2016) showed that 39.2% had a history of sexual intercourse and 11.6% had multiple sexual partners. This difference can be explained by the study population and sample size. Another comparable study in Ethiopia showed that the usage of SRH among school youths was 21.2% (Nekemte, Mekele, & Gojjamzone) (Binu & Sinaga, 2018:9-10), which is almost similar to this study's findings (21.2% vs. 19.1%).

This research also found that 35.1% of the respondents reported that their partners used alcohol in the last six months, while 20.1% reported having reproductive health problems, and 16.8% of them sought medical care.

A comparable study on Polish university students in Poland showed that 27% of the respondents reported using alcohol, 19% had sexual reproductive problems, and 6% were diagnosed with STIs in the last six months (Stokłosa, Porwollik, Bugajski, Piegza, & Gorczyca, 2020). Another similar study reported that 20.9% of the respondents

experienced sexual contact in a state of alcohol intoxication, while 5.4% suffered from STDs, and 5% of the young men used sexual services treatment (Łukaszek, 2022). The differences can be explained by the standard of living of the studied population and the sample size.

A systematic meta-analysis research conducted in Ethiopia reported that alcohol consumption and watching pornographic material increased the risk of sexual behaviour by three and four times (95% CI) respectively, supporting the findings of the above research (Amare & Yeneabat, 2019).

6.2.3 A LACK OF GUIDANCE ON THE USE OF DSN AND POOR UTILISATION OF SRH SERVICES

Health outcomes can be significantly affected by the interconnected issues of the insufficient utilisation of SRH services and a lack of guidelines on digital social network use. While social media offers numerous benefits, it also presents concerns that need to be addressed, especially for the young. The absence of clear standards and guidance on social media responsibility can lead to negative health behaviors and outcomes. This situation is exacerbated by the under-utilisation of SRH services, which are crucial for safeguarding the health of adolescents (David & Hill, 2020:119; Arnold, Thornton-Rice., Nicola, & Moran, 2021:13).

Young people often lack access to appropriate, non judgemental SRH treatments and information from professionals who are trained in delivering youth-friendly SRH care. They also have unique experiences and evolving needs related to SRH throughout their lives. Access to suitable, youth-friendly SRH services is severely limited for young people in low-resource environments (Salifu & Abubakari, 2023:13).

This study found that 77.9% of the students lacked access to or did not receive adequate sexual reproductive services in universities, which is associated with sexual reproductive risks (AOR=0.422; 95% CI 0.22 to 0.885). The majority of the participants reported that their experience of using digital social network for reproductive health was very low, depending on whether the students came from urban or rural areas before joining the university.

A similar study in Egypt reported that only 15.1% of the students were aware of youth health centers at university, and 6.5% attended health education sessions. 71.5% of university students perceived inadequate SRH services to meet their needs on campus (Bersamin, Fisher, & Marcell, 2017). Another study in Ethiopia showed that 28.1% of the students had never heard of youth health centers on campus, and only 8.6% had visited a facility for sexual reproductive health at university (Tilahun, Bekuma, Getachew, & Seme, 2021). The differences may be attributed to the study population and cultural variances between the two countries

This study revealed that 16.8% of the participants expressed a need for a supply of contraception and instructions, 16.2% for clinics to treat reproductive health problems, 17.8% for sexual reproductive health education by trained professionals, and 15.8% for reputable reproductive health information-sites through digital platforms.

This is consistent with findings from cross-sectional research on reproductive health needs in upper Egypt, where students showed a positive attitude toward the availability of sexual and reproductive information and the establishment of a Youth Health Center (YHC) on campus. 82.2% of the respondents agreed that SRH educational materials should be accessible on campus, 88.8% believed SRH clinics should be available on campus, and 80% preferred health providers of the same sex for their special health needs, including health education on reproductive health, STDs, and nutritional services (Abd El-Mawgod, Elghazally, & Mohammed, 2020).

This study identified that 70.5% of the respondents were introduced to SRH education within the existing courses, while the remaining 29.5% were introduced to standalone courses. This finding is in line with a study at Makerere University in Uganda (Oonyu, 2019). The participants from this study also suggested that from the moment the students arrive on campus, there is a need to provide a comprehensive understanding of the use of digital social network and its advantages and disadvantages. Students need to be well-informed so that they do not engage in premature actions, such as early sexual activity that could disrupt their studies.

6.3 SUMMARY OF THE MAJOR FINDINGS OF THE STUDY

The study's participants stated that information from digital social network is being used without regulation. This study identified that university students do not have a good understanding of youth sexual health services, as well as the advantages and risks of digital social network. This lack of understanding can lead to hazardous sexual behaviours such as unprotected sex, engaging in sex with multiple partners, unintended pregnancy, abortion, and STIs. Additionally, the study found statistically significant associations between the use of social media for sexually explicit content and variables such as being sexually active, the type of sexual acts practiced, and having multiple sexual partners. Inadequate access to SRH services at university increases the risk of sexual reproductive issues. This finding is consistent with several studies that show how the use of digital social network for sexually explicit content can negatively influence users' sexual practices (Nnebue, Duru, Uzoh, Udor, Salaudeen, & Okonkwo, 2020:11-21). These findings are comparable to the results reported among youths in other countries (Sawyer, Afifi, & Patton, 2012; Kelleh & Moreno, 2020:67).

6.4 CONCLUSION

In this chapter, both quantitative and qualitative results were discussed. The results were derived from self-administered questionnaires and in-depth interviews, which addressed the research questions. Both sets of results showed similar findings, indicating a strong correlation between the youths' use of digital social network and sexual reproductive health issues. These issues serve as indicators of risky sexual behaviour and thus highlight the need for guidelines for promoting sexual reproductive health.

CHAPTER SEVEN

DEVELOPING GUIDELINES FOR THE USE OF DIGITAL SOCIAL NETWORK IN SEXUAL AND REPRODUCTIVE HEALTH PROMOTION IN THE UNIVERSITY SETTING

7.1 INTRODUCTION

This chapter proposes an evidence-informed approach to utilising digital social network for the promotion of YSRH in universities. In Ethiopia, the National Adolescent and Youth Strategy (2016-2020) identified risky sexual practices as major SRH problems among the youth (FMOH 2016: 7). Additionally, less than half of institutions and healthcare facilities offer adolescent SRH services (EPHI and FMOH 2017). There is an unmet need for the youth's SRH. Despite 98% of the respondents knowing about STIs, they still sought additional information on digital social network. Technical guidelines on the provision of sexual and reproductive healthcare services to youth across the lifestyle are necessary for the continuum of care to be effective, despite the fact that the MOH created e-health national training manuals, standards, and minimum service delivery packages to address this issue (FMOH 2018: 65). Developing effective guidelines for the use of digital social networks in sexual and reproductive health promotion within university settings requires a multifaceted approach. This involves leveraging the unique characteristics of social media, understanding user engagement strategies, and fostering information literacy among students (Barack and Fisher, 2009: 23). This proposed guidelines will be developed through Phase I and II of findings of the study finding and relevant aspects of the literature review..

7.2 THEORETICAL BASIS

This study, based on the Social Normative Theory (1986), plays a crucial role in predicting health behaviors on social media. It provides a framework to understand how individual beliefs influence health-related actions. It offers a structural approach to understanding how beliefs influence health behaviour on social media, enabling public health practitioners to design more effective communication strategies and interventions

(Ahmadi, Khodakarim, & Ghaffari, 2021:10). The proposed guideline includes a description of the components that define youth SRH education, aligned to fit the proposed programme, which is distinguished by three characteristics.

The first dimension focuses on the quality of digital social network information regarding susceptibility and severity of risky sexual reproductive health behaviors. The second dimension of the intervention guide programme is centred on promoting positive student practices and their health journey, including the benefits, barriers, and cues to action. The third dimension involves collaboration, monitoring, and evaluating healthcare services in university settings (Rosario & Santos, 2024:882).

Several empirical studies discussed in Chapter two of this study assert that youth SRH programming focuses on developing individuals' personal and interpersonal skills, as well as addressing barriers to youth SRH education in the context of digital social network exposure. This exposure can help to reduce risky sexual behaviour among the youths and empower them to set and achieve positive goals.

In this study, 97.5% of the youth had access to various unregulated DSN sites and 75.5% did not receive adequate sexual reproductive healthcare services at the university. These services include family planning, comprehensive abortion care, diagnosis and treatment of STIs, and diagnosis and treatment of HIV. Almost all of them did not receive training on utilizing digital social network for sexual reproductive health information. This training includes updating communication skills, counselling techniques, and being aware of reputable digital media websites for reproductive health information. Additionally, the participants suggested that guidelines on digital social network should be provided to offer sexual reproductive healthcare services at universities.

This study summarised that the main determinants of youth sexual reproductive health were the usage of digital social network, accessibility of SRH services at university, the unmet need for youth sexual reproductive healthcare services, and the quality of digital social network information. Quality digital social network information plays a significant role in the university students' SRH.

Digital social network guidelines are important tools for students and should be accessible and permanently available in all healthcare facilities and campuses (Greene & Patton, 2020). The researcher has proposed the acronym “APPLE USE” guideline to refer to digital social network guidelines for promoting sexual and reproductive healthcare services in universities. It was developed from the key issues identified in Phase I and Phase II of the research, as well as from various literature reviews.

7.3 APPLE -USE GUIDELINE

The proposed “APPLE USE” is mnemonic term (Accuracy and credibility, Privacy and confidentiality, Peer-to-peer engagement, Literacy of digital skills, Education and practice, Utilised student-generated content, Stakeholder collaboration, and Evaluation and monitoring information) is the result of a study that examined the experiences of university students with social network use and SRH issues on the basis of the digital Social network usage in higher education institution.

-Purpose: To provide a framework for Ethiopian higher education institutions to enhance the social media literacy of students, enabling them to use these platforms effectively for SRH related purposes.to raise awareness about digital social network through practice and to encourage positive health journeys among university students,participating in sexual and reproductive health promotion activities at the university, which aim to strengthen interpersonal relationships, decrease peer pressure, and foster positive relationships that contribute to academic success.

-Scope: Focus on promoting critical thinking, responsible usage, and effective engagement with social media platforms to enhance learning and awareness of sexual and reproductive health issues.

. **-Goals** -Increase Awareness: Foster an understanding of the role social media plays in disseminating information about SRH.

-Promote Critical Engagement: Encourage critical thinking when consuming and sharing information on social networks about SRH.

-Develop Digital Skills: Equip students with the skills necessary to create, curate, and share credible content related to their academic and health interests

7.4 PRESENTATION OF GUIDELINES DEVELOPMENT

The presentation of developing guidelines follows key steps such as defining the scope and objectives, retrieving and synthesising evidence, appraising the quality of evidence, drafting recommendations, engaging stakeholders, and reviewing and approving. These steps were recommended by the WHO in 2018 on youth SRH and rights (Greenhow & Galvin, et al., 2020). Additionally, guideline framework from the Higher Education Students' Social Media Literacy in Ethiopia (Atinafu et al., 2021), the American Telemedicine Association (ATA) Adult Guidelines (Yellowlees et al., 2010), and Evidence-based Clinical Practice Guidelines (CPG) (Narayanaswami et al., 2015) were considered.

This recommendation is based on SRH mobile apps and the WHO normative guidance on self-care interviews (Wilson & Narasimhan, 2020:34), as well as on a study in sub-Saharan Africa that emphasised the need for improved SRH and rights communication for adolescents. As face-to-face access presents challenges, using digital media for information and services has become essential. Therefore, providing guidelines to enhance the knowledge and confidence of youth in using digital media for SRHR communication is crucial (Ackah, Esia-Donkoh, Ampons, & Tettey, 2024:130).

The researcher incorporated feedback from experts and finalised the development of the guidelines. The finalised guidelines aim to implement an integrated approach to providing sexual and reproductive healthcare services for the youth and managing their DSN use, as recommended by universities.

The finalised guidelines are divided into eight major domains, which are abbreviated "APPLE USE". These are Accuracy and credibility, Privacy and confidentiality, Peer-to-peer engagement, Literacy of digital skills, Education and practice, Utilised student-generated content, Stakeholder collaboration, and Evaluation and monitoring information. These domains are categorised into three integrated major activities.

7.4.1 VALIDATION AND EVALUATION OF THE GUIDELINES

The purpose of validating and evaluating the guidelines was to ensure that they were of good quality, acceptable, and achievable. In this study, the Appraisal of Guidelines Research and Evaluation Recommendations Excellency (AGREE-REX), a valid and reliable tool, was used. University lecturers and experts from adolescent and child health were involved in the assessment, with a total item score of 61% (Annexure 5).

- Evaluation tool

The evaluation criteria for the interim guidelines were distributed to experts for their assessment of the draft guidelines. A criterion is a standard or principle used in evaluation as the basis for evaluative judgment. Clarity, presentation, specificity, reliability, effectiveness, validity, achievability, relevance, and applicability are all criteria included in AGREE-REX (Brouwers, Spithoff, Kerkvliet et al, 2020:5535) and The WHO Global HRH Strategy (Jacob, 2019:751).

A Likert scale with four options was used for evaluation. The scale utilised values 1-7 for quality assessment and 1-7 for levels of agreement for suitable use. Evaluators were instructed to use the scale to assess each item. The appraiser context was then evaluated by experts (YES, YES with modification, and NO) (see Annexure 5) and feedback was provided.

- Experts

The final draft of the guidelines was presented to a group of health professionals, which included representatives from the Ethiopian Ministry of Health (MoH) - Sexual and Reproductive, Maternal, Newborn Adolescent Health and Nutrition (SRMNCAH-N) directorate, Women and Youth directorate, university student affairs and student counselling services, youth sexual and reproductive health experts, as well as physicians specialist in child health, obstetrics, and gynecology. Participants from universities, colleges, youth sexual and reproductive health, maternal and child health experts, and other relevant fields, also took part.

-Summery of experts comment

<i>Appraiser's context</i>	<i>Experts response</i>			
<i>I would recommend these guideline recommendations for use in the appropriate context</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Yes	X		X	X
Yes with recommendation		X		
No				
<i>I would recommend these guideline recommendations for use in my context (optional)</i>				
Yes	X			X
Yes with recommendation		X	X	
No				

- Outcome of the validation and evaluation

The evaluators recommended summarising the intervention according to the guidelines. They also highlighted the importance of integrating digital social usage guidelines and SRH services into university education curricula. Additionally, they advocated for fostering teamwork and a sense of ownership. Consequently, the final guidelines incorporated recommendations, feedback, and other comments.

7.5 DEVELOPED DIGITAL SOCIAL NETWORK GUIDELINE TO EMPOWER THE YOUTH'S SEXUAL AND REPRODUCTIVE HEALTH PROMOTION IN UNIVERSITIES

The accessibility of guidelines on digital social network use and standards for youth care practices is a significant enabling factor in providing sexual and reproductive healthcare services to university students. However, despite the increase in the number of digital social network users (Bopp & Stellefson, 2020:225), their potential contribution to SRH services for students has not been fully realised. This indicates the need for guidelines that are specifically aimed at improving the university community's performance in SRH service delivery in public universities and colleges. This study proposes guidelines to inform any health promotion programme for YSRH based on the eight domains of the “APPLE USE” on the use of digital social network as depicted in Figure 7.1.

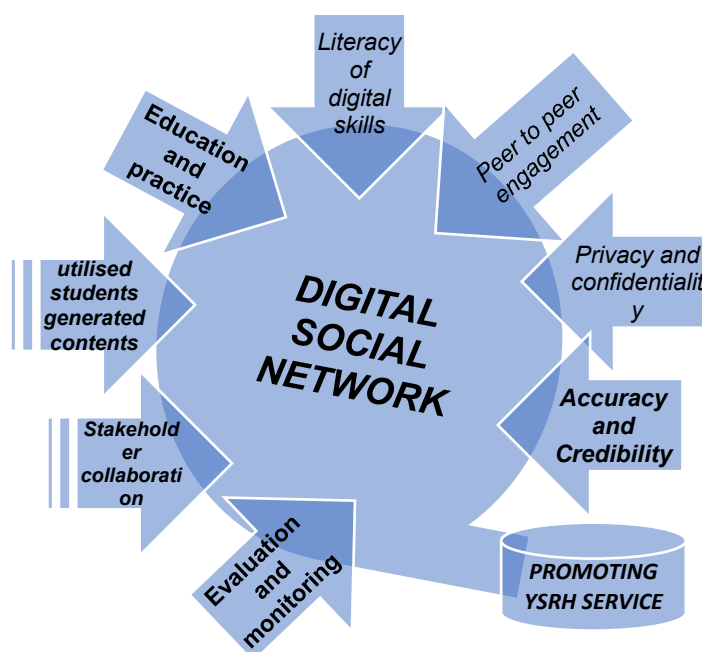


Figure 7.1: The “APPLE USE” guide for the use of digital social network to promote sexual reproductive health in universities

7.1.1 Scope of the guidelines

The technical intervention guideline is targeted towards university students and communities working in university health centre and youth-friendly health services offices to improve digital social network usage for YSRH services. It also assists policymakers and health management in planning and decision-making. These guidelines help educational institutions to implement youth healthcare services and provide recommendations for informed decision-making by healthcare providers and stakeholders (MoH, 2019: 27; WHO, 2017: 8).

7.5.2 Purpose of the Guideline

The guideline will help university students enhance their digital skills, and confidence in discussing sexual health, and promote youth sexual and reproductive health services. They focus on protocols for using digital social network and providing health services within university settings.

7.5.3 Objectives of the Guidelines

The specific objectives of the guidelines are to:

- Enhance university communities to empower access to accurate and credible sexual reproductive health information on digital social network.
- Assist university students in building privacy and confidentiality when accessing sexual reproductive healthcare services.
- Improve the students' knowledge of using digital social network information to promote sexual reproductive healthcare services.
- Develop critical thinking skills and the ability to find, interpret, and evaluate relevant digital social network information on sexual reproductive health.
- Serve as a tool for monitoring and evaluating the role of digital social network information in delivering youth sexual reproductive healthcare services.
- Promote collaboration among university administration, health professionals, and student organizations to develop and implement effective digital social network-based SRH interventions

7.5 DOMAINS OF APPLE USE

The main domains that inform the guidelines include the following essential components:

- Quality digital social network information teaching

Instructor lessons emphasise the significance of privacy protection, including adjusting settings, using strong passwords, and limiting location sharing when accessing sensitive health information (George, Lucas Education Foundation, 2024:80).

- Positive student practice and their health journey experiences

The second activity focuses on the students' experiences of their health journey. Peer-to-peer education is used to promote positive self-esteem, self-regulation, social awareness, relationship skills, and responsible decision-making.

- Stakeholder collaboration and monitoring and evaluation

The third activity of the “APPLE USE” guide is collaboration between academic researchers and key stakeholders. This serves the dual purpose of capacity building and context adaptation to emphasise the need for increased investment in youth sexual reproductive health policies and programme. The whole integrated “APPLE USE” guide components summarised on figure 7.2 .

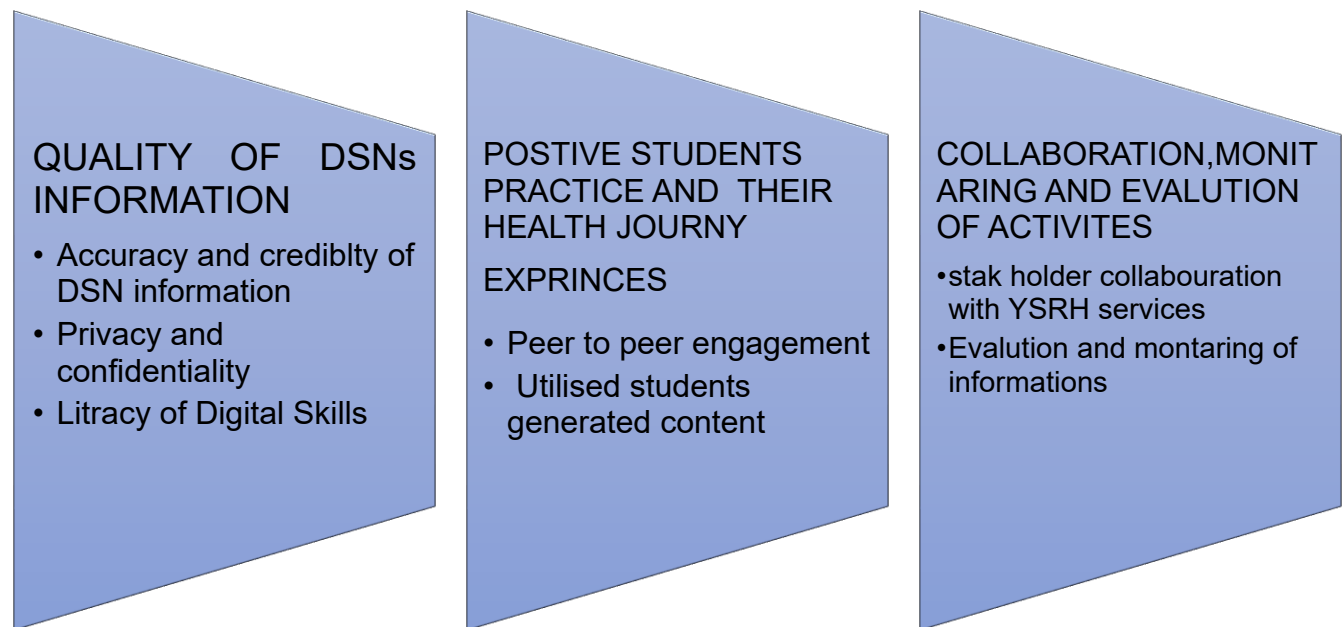


Figure 7.2 Diagrammatic representation of integrated “APPLE USE” guideline
(Adopted from DASH/CDC: 2017)

7.5.1 QUALITY DIGITAL SOCIAL NETWORK INFORMATION

7.5.1.1 Accuracy and credibility of digital social network Information

Mcharo and Msuya (2021:68) argue that enhancing the parents' communication skills on SRH issues should be a key focus in community health education. This will empower them to initiate and convey precise SRH information effectively. To cater for the students' needs and enhance the instructors' competencies, it is crucial to reinforce comprehensive SRH education and skills development in the existing school curriculum. In this study, 70.5% of the respondents reported that SRH education was introduced into the existing courses, while the remaining 29.5% reported that it was introduced as a stand-alone

course. 71.8% of the respondents believe that there is reliable information on DSN, but they are unsure which sources can be trusted.

Eisenberg, Garcia, Frerich, Lechner, and Lust (2012:47) emphasise the importance of universities partnering with reputable organisations to provide accurate and up-to-date information on SRH. Organisations such as Planned Parenthood, the National Campaign to Prevent Teen and Unplanned Pregnancy (NCPTP), the American Sexual Health Association (ASHA), the WHO, the Centers for Disease Control and Prevention (CDC), and the American College of Obstetricians and Gynecologists (ACOG), specialise in SRH and offer evidence-based resources. Collaborating with these organisations allows universities to share trustworthy information on their social media channels, ultimately building credibility and trust among their audience.

7.5.1.2 Privacy and confidentiality of information

Protecting the students' privacy and confidentiality when providing SRH information online follows the guidelines set forth by the Family Educational Rights and Privacy Act (FERPA) of 1974 and the Health Insurance Portability and Accountability Act (HIPAA) of 1996. This approach also allows the students to access resources anonymously.

A study conducted by Rea, Allison, and Tolleson-Rinehars (2022:533) stated that as technology will likely continue to be an integral part of healthcare delivery, enhancing the privacy and confidentiality of these services can help adolescents and young adults to engage independently and autonomously in SRH care, and thus potentially improving their SRH outcomes.

School-based health centre support the WHO's criteria for adolescent-friendly healthcare services. Adolescents focused at school-based health centres were shown to value privacy and confidentiality (Daley, Polifroni, & Sadler, 2019: 47). Universities should create SRH content that is customised to the needs and concerns of their student population. This content should be vetted by healthcare professionals and cover topics like contraception, STIs, healthy relationships, and consent. By providing pertinent information tailored to the university community, students are more likely to have confidence in the sources by:

- Ensuring that the university is in compliance with all relevant privacy regulations, including the FERPA in the US, in relation to its social media policies and procedures.
- Designating a point of contact for the students to report any unauthorised access or misuse of their social media profiles, and promptly investigating and addressing all reported privacy concerns.
- Offering regular training and resources to help the students, faculty, and staff to understand the best practices for protecting privacy on social media. This should include guidance on avoiding oversharing, managing online reputations, and recognising and avoiding scams.
- Limiting access to the students' personal information, including social media profile data, to only those university employees who have a legitimate educational need. This includes implementing strict access controls and monitoring to prevent unauthorised access or misuse of student data.

7.5.2 POSITIVE YOUTH PRACTICES AND THEIR HEALTH JOURNEY EXPERIENCES

7.5.2.1 Peer-to-peer engagement of students in Sexual and reproductive health

Peer education has significantly contributed to increasing knowledge and promoting preventive behaviours among adolescents regarding reproductive health. This approach has the unique advantage of enabling peer-to-peer learning and maintaining the gains achieved through interventions. A study conducted by Mbachu, Chinyere, Agu, and Obinna in 2024 found that 66.93% of students shared information with their peers, highlighting the importance of school peer education programmes.

Additionally, studies conducted in Ethiopia have shown that peer educators play a crucial role in educating adolescents and young people in their communities about SRH. As a result, knowledge about the availability and utilisation of youth-friendly services has improved. According to the study, 38% of the respondents identified peer educators as their primary source of information, making them the most popular source (Kereta, Belayihun, Hagos, & Asnake, 2021:48). In a separate study, the majority of the participants who engaged in peer-to-peer online discussions about SRH and education

shared similar views. Many students participating in these discussions covered various sexual and reproductive topics, with half of them noting that it was easier to disclose potentially embarrassing sexual behaviours online.

According to Jackson and Barnes et al. (2013), peer-to-peer messaging increases the message's credibility. People determine credibility based on a combination of reliability, accuracy, currency, truthfulness, and trustworthiness, rather than just relying on the expertise of one author. The youth increasingly use online resources, connect through social media, and seek trustworthy information online. As a result of these habits, the virtual spaces of social networking platforms offer a unique opportunity for sharing and promoting positive health. Leveraging peer influence and training student leaders and influencers to create and share responsible SRH content on social media, can help to reduce stigma. Universities should promote peer-to-peer education by training student leaders to create and share accurate SRH information on social media. These student leaders can serve as trusted sources of information for their peers and help to combat misinformation and stigma. When students see their peers sharing information, they are more likely to trust the source.

7.5.2.2 Literacy in digital skills

The term "digital literacy" encompasses a wide variety of technologies (Tinmaz Lee & Baber, 2022:21). According to Dobson and Willinsky (2009:286), digital literacy is defined as the belief that information literacy consists of the following six elements that form a sequential process of handling information: identifying the needed information, and locating, assessing, organising, and utilising it. Jackson and Barnes et al. (2013) discuss media literacy, which involves training individuals to share information in integrated spaces of hyper-media activity. The goal is to encourage people to lead more active civic lifestyles. The core ideas of this approach are the development of critical thinking abilities and the capacity to locate, analyse, and assess pertinent data. With this foundation, individuals can then acquire skills in creative idea generation, media production and promotion, and leadership through civic engagement. Fluency with information technology enables critical thinking and judgement among media consumers. This transition helps young adults to move from being mere media consumers to engaged

citizens. It empowers them to assess the media around them and create their own media products easily. Educating students on how to critically evaluate online SRH information and identify misinformation is essential. It is crucial to promote digital health literacy skills by integrating social media-based SRH information into campus health services and education programs. This provides comprehensive approaches.

7.5.2.3 Education and practice of youth

To provide young people with the appropriate information, a web-based intervention is combined with traditional methods of sexual education, as stated by Ganesh, Shalik, Dhital, and Dipika (2024:148). This approach addresses both the benefits and risks of social media on the youth's sexual health. Moreover, to mitigate the negative effects of media on adolescent well-being and to promote positive self-esteem, comprehensive approaches that include media literacy education and regulatory policies are required. Comprehensive sexual education is also crucial for addressing risky sexual behaviours in adolescents and fostering healthy development in this population. Additionally, using social media to promote sex education can improve accessibility, attract a larger audience, and offer a forum for private, judgment-free conversations on delicate subjects, according to Ayobami, Precious, and Adekola (2023:27). This will ultimately enhance the effectiveness of the programme. In this study, it was discovered that 43% of the respondents believed that digital social network was beneficial for young people, while 45.8% thought it had negative consequences. However, qualitative findings revealed that some participants expressed concerns about the risks to SRH when using digital social network at a university without family control or parental supervision. It is thus crucial to educate students on privacy settings; provide resources and training to help the students to understand how to properly configure privacy settings on their social media accounts to limit visibility to only approved connections; and encourage them to regularly review and update their privacy settings.

7.5.2.4 Utilised students generated content

Incorporating student voices into a social media campaign can improve authenticity, as suggested by Julio, Navío-Marco, and Mendieta (2024:13). The institution can provide a platform for the students to share their health journeys and highlight their experiences.

This not only motivates the attendees, but it also gives the students the confidence to lead the conversation on their health. In addition to increasing participation, student-generated platforms also encourage collaboration and intercultural understanding – two qualities that are critical for promoting equity and inclusion in the diverse classroom and fostering cooperation and problem-solving abilities. The qualitative part of this study revealed that a few participants reported creating a group on Telegram that offered advice to students with various sexual reproductive problems. They also facilitated peer-to-peer online discussions about sexual reproductive health and education-related issues. The participants noted that the majority of the students participating in the group shared different sexual reproductive issues. Half of the participants mentioned that "sometimes embarrassing sexual acts are easier to discuss online" (Haight, Gokiart, & Daniels, 2023:1289408).

7.5.3 STAKEHOLDER COLLABORATION AND MONITORING AND EVALUATION.

7.5.3.1 Stakeholder collaborations with YSRH service

According to Mbachu, Clara Agu, and Onwujekwe (2020:46), it is important to work closely with university administration, health professionals, and student organisations to develop and implement effective social media-based SRH interventions. Cooperation between key stakeholders, implementors, and academic researchers enhances context adaptability and capacity building. Co-production produces information, with input from various stakeholder groups, ensuring its relevance to the local area.

Plesons, Hainsworth, Biaukula, and Ferguson (2019:62) emphasis the inclusion of adolescents on global, regional, and national agendas. They highlighted the need for increased investment in youth sexual reproductive health policies and programs, renewed commitments to universal health coverage, increased school enrollment, and advances in technology as critical opportunities that can be and must be leveraged to catalyse progress for adolescents. Universities should partner with healthcare providers in the community to ensure that the students have access to accurate and up-to-date information about SRH services. These collaborations can involve working with local clinics, health departments, and community-based organisations. By collaborating with healthcare providers, universities can build trust in the information which they share and

ensure that the students have access to the services which they need. In general, universities should develop and implement clear social media policies that outline expectations for appropriate use and prohibit unauthorized access to students' personal social media profiles. These policies should be widely communicated to all students, faculty, and staff. By following these guidelines, universities can leverage the power of DSN to improve SRH awareness and access among their student populations (Chekol, Sheehy, & Siraneh, 2023:12; Salifu & Abubakari, 2023:27).

7.5.3.2 Evaluations and monitoring of the information

It is essential to provide the youth with quality information and counselling services on various issues which are included in the reproductive health package. This will encourage the youth to learn about their reproductive health rights and adopt sustainable behaviour changes to protect themselves from various reproductive health risks (WHO, 2002).

According to Silva, Kassegne, and Vondrasek (2023:15), the rapidly increasing use of digital technologies among young people in Africa and other regions highlights the need for objective evaluations of their effectiveness in sexual reproductive health programs. Despite the belief that young people have access to information about sexual reproductive health, many still require guidance and approval from trusted adults. Evidence shows that mass media and digital media, as part of multi-faceted initiatives, have the potential to improve knowledge, attitudes, and behaviors related to SRH communication among both adults and the youth. Barden and McCallum (2022:10) emphasized the importance of continuously monitoring the reach and impact of social media-based SRH interventions, using data to enhance and refine strategies. Various tools and techniques are necessary for the successful monitoring and evaluation of SRH programs, including frameworks to visually represent the program's organization, context, goals, and the logic of its monitoring and evaluation systems, as well as stakeholder engagement.

According to Chekol, Sheehy, and Siraneh, et, al (2023) Universities should monitor social media for misinformation about sexual and reproductive health (SRH) and respond promptly and accurately to correct any false or misleading information. This may involve sharing factual information, guiding students to reliable sources, and reporting harmful

content to platform moderators. By actively addressing misinformation, universities can establish trust in their information sources and help counter the dissemination of false information. Furthermore, universities should consistently assess the impact of their SRH information campaigns on social media and utilise this data to enhance their strategies gradually. This could involve monitoring engagement metrics, administering surveys, and collecting feedback from students and healthcare providers. Universities should offer resources and training for faculty and staff on how to identify and respond to misinformation about SRH. These resources can include guidelines for sharing accurate information on social media and strategies for addressing sensitive topics in the classroom. By ensuring that faculty and staff are well-informed and equipped to handle SRH topics, students are more likely to trust the information which they receive from these sources.

In the qualitative part of this study, the respondents also suggested that an independent office on SRH services should be available to the students. This office would invite experts in the field to help the students to gain a better understanding of healthy reproduction. Additionally, the respondents recommended that a services office be established to monitor the reproductive health of young people in hospitals and health centers at universities. This office would encourage those who work there to provide quality care and support. By continuously evaluating and improving their efforts, universities can build trust in their information sources and ensure that they are meeting the needs of their students (Saha, Yaya, & Banke-Thomas, 2022:37) :

- Reviewing the university's social media guidelines and acceptable use policy. Using parental consent or opt-out forms if sharing student activities, and not starting the use of social media without guidelines or consent forms in place.
- Implementing strong security measures for any official university social media accounts, such as requiring multi-factor authentication and limiting access to authorised personnel only. Regularly monitoring these accounts for any suspicious activity.

- Prohibiting faculty, staff, and other students from accessing or monitoring each other's personal social media profiles without permission. Establishing consequences for violations of this policy.
- Considering creating separate social media profiles to protect secrecy and privacy.
- Reviewing the privacy settings on personal social media accounts to control the visibility of information to other users.
- Using photo-editing tools to quickly crop or obscure sensitive parts of an image before posting.
- Explaining to students what they will be doing on social media, the benefits and risks, and respecting each student's wishes regarding their personal information.
- Walking around the classroom and eliminating any visible student or class information from the walls and whiteboards before recording media.
- Ensuring that the students' digital records are only accessible to appropriate parties and stored securely.
- Turning off location services for phones when taking pictures to avoid attaching location data.

7.6 CONCLUSION

This chapter discussed the development of the “APPLE USE” guidelines to enhance sexual reproductive health services among university students. This interactive guide incorporates input from literature and research results and will be implemented by universities with the involvement from all stakeholders. Such interactive guide will help in building relationships, communication skills, and understanding among peers.

CHAPTER EIGHT

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

8.1 INTRODUCTION

The previous chapter discussed about steps of guide line development and evaluation tools This chapter is the final section of the study, summarizing the key findings, conclusions, and limitations. It provides recommendations for the Ministry of Education, Ministry of Health, university managers, and students, emphasizing the importance of utilizing digital social media networks to promote sexual and reproductive healthcare services among university students.

8.2 PURPOSE AND OBJECTIVES OF THE STUDY

This study aims to investigate the effects of digital social network utilization on youth sexual and Reproductive Health in a public University in Addis Ababa city administration, Ethiopia. To achieve the purpose, the objectives of the study in the study area were to:

- Determine and describe information on sexuality and reproductive health accessed using digital social networks.
- Determine and describe threats and benefits of using digital social networks, on youth sexuality and attitude towards reproductive health
- Explore the experiences of the use of digital social networks among youths, to access information about their sexuality and reproductive health.
- Develop guidelines on teaching programming to empower university youths on sexuality & reproductive health.

8.3 RESEARCH DESIGN AND METHODOLOGY

The explanatory sequential mixed method approach was conducted in two phases: an initial quantitative study using a self-administered questionnaire, and a qualitative study

involving in-depth interviews. Both sets of data were collected and analyzed separately as part of a single study conducted in public universities Addis Ababa city administration, Ethiopia. The findings from both studies were integrated with literature reviews to develop an intervention guideline for the use of digital social networks in sexual reproductive health promotion programs at universities. The study's validity and reliability were assessed to determine its quality. Permission to conduct the research was obtained from the University of South Africa and the Addis Ababa Regional Health Bureau, who also provided ethical approval and a clearance letter for the study in Ethiopia.

8.3.1 PHASE 1

Phase I of the study involved a quantitative, institution-based cross-sectional study. A self-administered questionnaire was used to explore information on sexuality and sexual reproductive health accessed by youths, as well as the benefits and threats of DSN networks in relation to sexuality and sexual reproductive health. Universities and faculty were selected through stratified random sampling, with a study sample of 413 respondents. Data was collected and analyzed using Epi Info and SPSS. Results were analyzed using descriptive and inferential statistics.

8.3.2 PHASE 2

The study employed a qualitative descriptive design to explore the experiences of university students in Addis Ababa city administration using digital social networks to enhance their sexual reproductive health. The research aimed to understand how these platforms are utilized to access information about sexuality and reproductive health. Key informants were selected through purposive sampling, resulting in 15 participants from three universities. In-depth interviews were conducted among 12 participants at their respective faculties to ensure confidentiality. Data analysis was performed using Atlas.ti version 24, with data quality assessed using trustworthiness strategies.

8.3.3 PHASE 3

Phase III focuses on development of guidelines to address digital social network information for enhancing sexual and reproductive health outcomes in youth. The process involves incorporating findings from Phases I and II, as well as a thorough review of the

literature and existing guidelines. The draft guidelines were reviewed by a supervisor and experts, resulting in feedback that was considered for the final version. These guidelines aim to implement an integrated approach to youth sexual and reproductive healthcare services offered by higher institutions.

8.4 SUMMARY OF FINDINGS

The impact of university students' use of digital social networks on their sexual and reproductive health (SRH) is complex. It involves making knowledge accessible, directing actions, and affecting attitudes. Other studies point to possible advantages such as improved sociability and access to educational materials, while others emphasize drawbacks including health problems and distraction from academic work. The study findings confirmed these points; the majority of respondents visited more than two social media sites without time limits and believed that digital social network provides reliable information on sexual and reproductive health (SRH). However, they were unsure of the sources of this information. More than half of the respondents reported that digital social network is harmful; risks associated with it include negative health outcomes and relational risks, such as sexting, bullying, unwanted predation, and engaging with risky sexual partners. Furthermore, the majority of in-depth interviewees stated that without parental supervision or family control, using digital social network at a university can pose risks to one's sexual and reproductive health. Additionally, most of them lack adequate access to sexual and reproductive health (SRH) resources at university, and there is no guide available for accessing digital social network for SRH information. Their experiences using digital social network for reproductive health were very low.

The findings presented are based on the objectives under the sub-headings:

- Objective 1: Determine and describe information on sexual and reproductive health accessed using digital social networks.
- Objective 2: To determine the benefits and threats of digital social networks utilisation on youth sexual and reproductive health

- Objective 3: To explore and describe the experiences university students use of digital social networks utilisation on youth sexual and reproductive health
- Objective 4: To develop guidelines for digital social networks utilisation on youth sexual and reproductive health in public university

8.4.1 To explore and describe the effects of digital social networks utilisation on youth sexual and reproductive health in public university

The study found that respondents used digital social network for both entertainment and education. Some also accessed sexually explicit content, which is linked to sexual reproductive health risks. Male respondents used social media more often than females, with Telegram and Facebook being popular platforms. Many easily found sexual and reproductive health information through social media, although they struggled to identify trustworthy sources. Most participants' parents were well-educated, but some had no formal education, which is associated with reproductive health risks. The study also revealed that many students have unsupervised access to digital social network platforms and spend a significant amount of time online.

8.4.2 To determine the benefits and threats of digital social networks utilisation on youth sexual and reproductive health in public university

The study revealed that respondents had varied opinions on digital social network, with half acknowledging harmful effects and the other half recognizing benefits for youths. Risks included unhealthy relationships, early sexual activity, peer pressure, multiple partners, and rumors. However, participants also pointed out the importance of digital social network for communication, health information, and connecting with like-minded individuals. Many felt that using digital social network raised awareness of sexual risks, while some said it deterred them from engaging in risky behaviour. Lack of parental supervision was seen as a risk factor for sexual and reproductive health issues among university students. Discussing sexual health with family, friends, or professionals was viewed as beneficial while avoiding such discussions was linked to higher risks. Viewing sexual content on social media was associated with the risk of having multiple partners.

8.4.3 To explore and describe the experiences university students use of digital social networks utilisation on youth sexual and reproductive health in public university

The study found that university students lack access to adequate sexual reproductive services, leading to increased sexual reproductive risks. Participants expressed a need for contraception, healthcare clinics, education, and reliable reproductive health information. Urban students showed higher knowledge of using digital social network for reproductive health compared to rural students, with experiences influenced by information from family, friends, and senior students. Suggestions included incorporating a lesson on healthy reproduction in the curriculum and establishing an independent office for sexual reproductive health services. Logistic regression analysis revealed a correlation between increased digital social network use and risky sexual practices, as well as the absence of sexual reproductive health courses and exposure to sexual films. The study stressed the importance of education and access to services in preventing students from engaging in risky behaviour.

8.4.4 To develop guidelines for digital social networks utilisation on youth sexual and reproductive health in public university

Access to sexual and reproductive health services for young people in resource-poor countries can be improved by providing standardized information tailored to local cultures, ensuring interactivity, privacy, autonomy, portability, and cost-effectiveness. Technical guidelines for SRH providers help enhance their competence and confidence in using DSN to deliver services to youth. The Ministry of Health has recognized adolescent SRH services as a priority, requiring cost-effective healthcare delivery and skilled providers. The guidelines were developed based on social normative theory, literature review, and gaps identified through a combination of quantitative and qualitative study findings. The guidelines follow the “APPLE USE” mnemonic guideline model, focusing on digital social network to promote sexuality and SRH services in university settings. It has eight domains categorized into three dimensions. The first dimension emphasizes accuracy, credibility, privacy, and confidentiality, while the second dimension is centered on positive student

practices and their health journey. The third dimension focuses on collaboration, monitoring, and evaluation of healthcare services in university settings promoting sexual and reproductive healthcare services

Table 8.1 Summary of scope of the proposed “APPLE USE” guidelines

DOMAIN	SCOPE
Accuracy and Credibility of digital social network Information	Empower youth access to quality of digital social networks information.
Privacy and confidentiality of information.	
Peer-to-peer engagement of students in sexual reproductive health.	Develop critical thinking skills and promote positive youths practice and their health journey experiences.
Literacy of Digital Skills	
Education and practice of youths	
Utilized students generated content	
Stakeholder collaborations with YSRH service	Serve as a tool for Promoting stakeholder collaboration and monitoring and evaluation..
Evaluations and Monitoring of the Information	

8.5 FURTHER RESEARCH

The study suggests future research on utilization of digital social networks for sexual and reproductive health services in universities at country level.. It also recommends examining the healthcare services provided by professionals in urban and rural university health units. Educational institutions need to assess readiness for offering youth sexual and reproductive health services, emphasizing digital social network use. Implementing the “APPLES USE” guide and researching its effectiveness in improving services is also

advised. Further research could provide more data for comparison and a better understanding of the issue.

8.6 The Strengths

This study effectively utilized mixed methods to examine the impact of DSN use among youths. The integration of quantitative and qualitative data was a key strength, as it allowed for a comprehensive understanding of the topic. The researcher's systematic approach to data collection and analysis led to valuable insights that informed the development of the “APPLES USE” guidelines. Additionally, the study successfully engaged a large number of participants, minimizing dropout rates.

8.7 LIMITATIONS OF THE STUDY

The study was conducted in Addis Ababa, the capital city of Ethiopia, which has the highest internet coverage including 5G. The focus was on three public universities in Addis Ababa, which may not represent universities in other areas. The qualitative findings from the study may not apply to other higher institutions.

8.8 RECOMMENDATIONS

Based on the findings of the study, recommendation suggested for the following institution; Ministry of Education, university administrators, instructors, and health professionals within the university unit.

8.8.1 Ministry of Education

The Ministry of Education (MOE) may address the following issues

- It is important to ensure that the law regarding digital social network use is easily accessible and understood by both staff and students.
- A review and update of the current approach to delivering Youth Sexual and Reproductive Health (YSRH) education should focus on minimizing the risks of digital social network while maximizing its benefits.

- The educational curriculum should be revised to include credit hours for YSRH theory and practice as well as digital social network ethics.
- Educational sessions on healthy digital social network usage should be conducted for teachers, along with training on addressing behavioral changes that may lead to risky sexual behaviors.
- There should also be digital education training opportunities for student coordinators, as well as piloting the implementation of technical guidelines for sexual reproductive health providers. Additionally, including the “APPLE USE” intervention guide in school curricula can promote youths' resiliency.

8.8.2 Ministry of Health

The FMOH should do the following:

- By regularly visiting universities to identify the issues, challenges, and deficiencies that health workers face in providing sexual and reproductive health services, you can ensure that relevant policies are applied.
- Analyze the present working environment of health professionals to determine what adjustments may be necessary to address Youth Sexual and Reproductive Health (YSRH) online.

8.8.3 University managers

University administrators should:

- Ensure that health services are readily available to students.
- Ensure that staff members have access to the YSRH care services guidelines.
- Provide incoming college students with information on sexual and reproductive health services and how to access digital social media information.
- Facilitate and provide in-service training and on-site capacity building in SRH care, communication skills, and values clarification to all university communities.
- Monitor the application of standards in YSRH programs and assist female students with per-service training.

8.8.4 Students

Students should:

- Engage in activities and events at universities, youth centers, media outlets, and religious organizations to promote Youth Sexual and Reproductive Health (YSRH) services.
- Inform youth about STI/HIV prevention, pregnancy, provide digital social network information and counseling services, and encourage youth to educate and support their peers
- Senior students should assist, coach, mentor, and provide supportive supervision to junior students.

8.9 SIGNIFICANT CONTRIBUTIONS OF THE STUDY

Researchers found gaps in sexual and reproductive health information among youth in Ethiopian universities. The study emphasized the need for more initiatives to improve youth's sexual and reproductive health on campus. University students lacked knowledge about sexual health services and the risks of digital social network, leading to risky behaviors like unprotected sex. There was a link between using digital social networks for explicit content and engaging in risky sexual activities. Limited access to SRH services on campus further increased the risk of sexual health issues. This proposed “APPLE USE” guide lines aims to reduce risky behaviors by using positive digital social network information for comprehensive reproductive health education in developed and developing countries, benefiting youth in higher education institutions.

8.10 CONCLUSION

Chapter eight provides a general overview of the study and discusses its strength and limitation. In addition to recommendations for further research, the chapter also presents ideas on how managers, academics, and policy makers, can utilise the study.

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Annexure 1: Clearance certificate from the University of South Africa Health Studies Higher Degrees Committee



COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

24 April 2023

Dear Mr Girma Adbissa Gobena

NHREC Registration # :
Rec-240816-052
CREC Reference # :
10206019_CRECHS_2023

Decision:
Ethics Approval from 24 April 2023 to 24 April 2024

Researcher(s): Name: Mr. G. A. Gobena
Contact details: 10206019@mylife.unisa.ac.za
Supervisor(s): Name: Prof. F. H. Mfidi
Contact details: mfidifh@unisa.ac.za

Title: The effects of Digital Social Networks utilisation on youth Sexual and Reproductive Health in the public University in Addis Ababa city administrative, Addis Ababa, Ethiopia

Degree Purpose: PhD

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for one year.

The *medium risk application* was reviewed by College of Human Sciences Research Ethics Committee, in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.



University of South Africa
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PO Box 392 UNISA 0003 South Africa
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4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date (**24 April 2024**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **10206019_CREC_CHS_2023** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Signature: 

Prof. KB Khan
CHS Research Ethics Committee Chairperson
Email: khankb@unisa.ac.za
Tel: (012) 429 8210

Signature: PP 

Prof. ZZ Nkosi
Acting-Executive Dean: CHS
E-mail: nkosizz@unisa.ac.za
Tel: 012 429 6758



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Annexure 2: Letter of permission to do study

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City Government of Addis Ababa Health Bureau

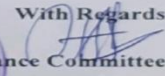
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DATE 21/9/15

TO:

- **KOTEBE UNIVERSITY OF EDUCATION**

Subject: Request to access Facilities to conduct approved research

This letter is to support **GIRMA ABDISSA GOBENA** conduct research which is entitled as **"EFFECTS OF DIGITAL SOCIAL NETWORK USE ON YOUTH SEXUAL AND REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITY ADDIS ABABA, ETHIOPIA."** The study proposal was duly reviewed and approved by Addis Ababa Health Bureau procedures and submit an activity progress report to the Ethical Committee as required. Therefore we request the facility and staffs to provide support to the principal investigator.

With Regards

Ethical Clearance Committee

Cc

- **GIRMA ABDISSA GOBENA**
- **ETHICAL CLEARANCE COMMITTEE**





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City Government of Addis Ababa Health Bureau

REF.N.O. A/A/13243/227

DATE 21/04/15

TO:



KOTEBE UNIVERSITY OF EDUCATION

Subject: Request to access Facilities to conduct approved research

This letter is to support **GIRMA ABDISSA GOBENA** conduct research which is entitled as **"EFFECTS OF DIGITAL SOCIAL NETWORK USE ON YOUTH SEXUAL AND REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITY ADDIS ABABA, ETHIOPIA."** The study proposal was duly reviewed and approved by Addis Ababa Health Bureau procedures and submit an activity progress report to the Ethical Committee as required. Therefore we request the facility and staffs to provide support to the principal investigator.



With Regards

Ethical Clearance Committee

Cc

- GIRMA ABDISSA GOBENA
- ETHICAL CLEARANCE COMMITTEE

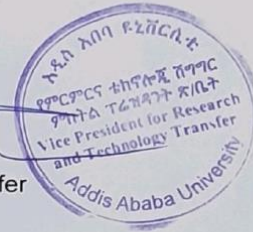
*To: All colleges
You are requested
to provide him
any support him
to his personal
research.
29/6/2023*



Ref: VPRTT/LT-182/15/23
Date: June 19, 2023

To: College of Education and Behavioral Studies
College of Social Sciences
College of Natural & Computational Sciences

From: Mitike Molla (Prof.)
Vice President for Research and Technology Transfer

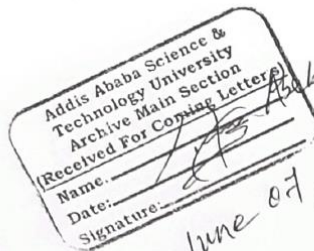


Subject: **Request for Cooperation to collect Data**

Mr. Girma Abdissa Gobena is a PhD student at University of South Africa (UNISA) in the field of Public Health. Currently he is conducting data collection for his dissertation titled: **“The Effect of Digital Social Networks Utilization on Youth Sexual and Reproductive Health in Public Universities in Addis Ababa, Ethiopia”**.

I am therefore writing this letter to request you to extend your cooperation to Mr. Girma while he is collecting data from students in your respective college. Please be informed that his proposal has got the necessary ethical clearance.

Regards



31 May 2023
UNISA-ET/KA/ST/29/31-05-23

ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY
ADDIS ABABA

Dear Madam/Sir,

The University of South Africa (UNISA) Ethiopia Regional Learning Centre extends warm greetings to you and the staff members of your esteemed university. By this letter, we want to certify that Mr. Girma Abdissa Gobena (student number 10206019) is a PhD student at UNISA in the field of Public Health. Currently, he is at the stage of data collection on his doctoral research entitled "*The Effects of Digital Social Networks Utilisation on Youth Sexual and Reproductive Health in the Public University in Addis Ababa City, Ethiopia*".

This is therefore to kindly request your cooperation in assisting the student to be able to collect data from students of AASTU. We would like to thank you in advance for all the assistance that you would provide to the student.

Sincerely,

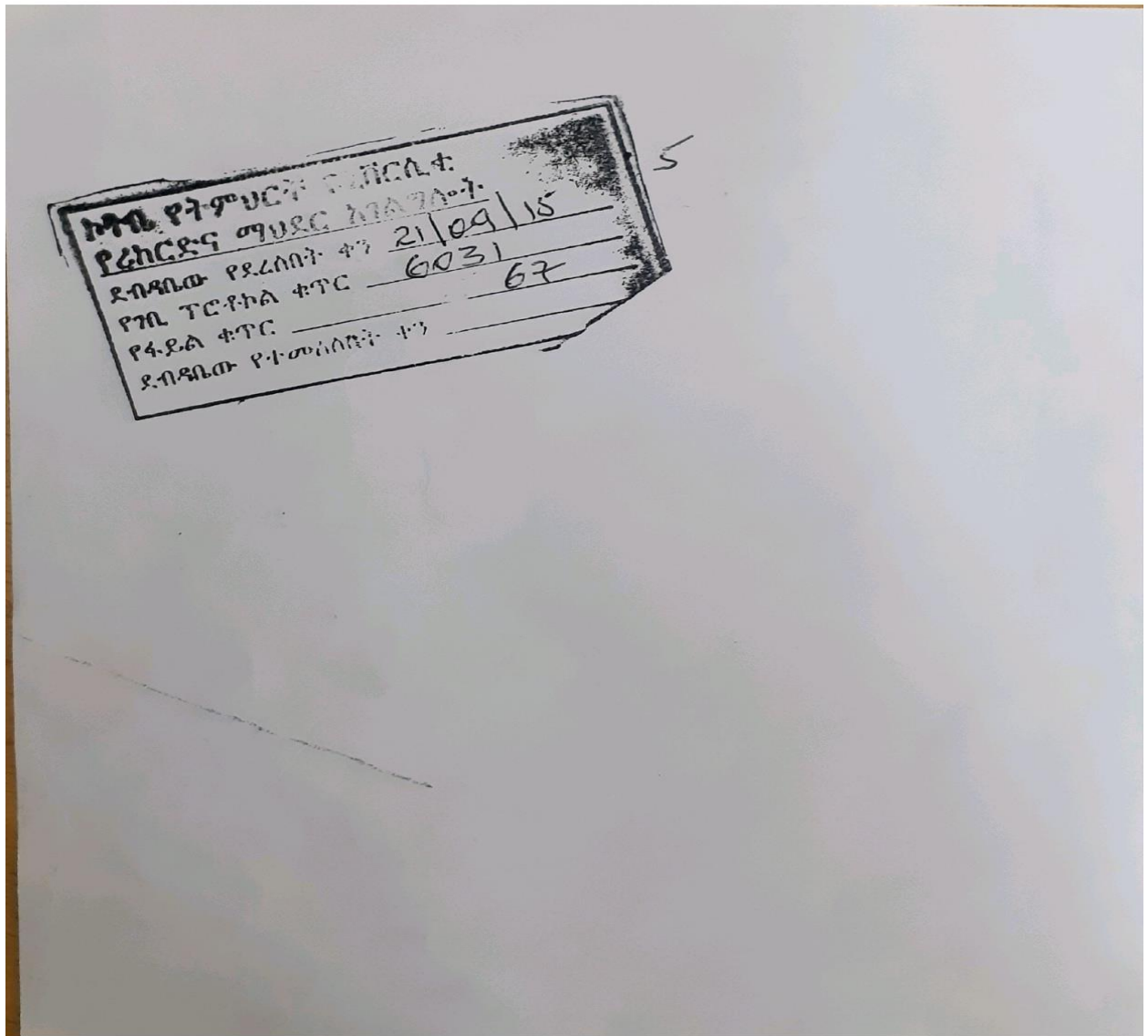
Dr. Tsige GebreMeskel Aberra

Director

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Annexure 3: Informed consent

REQUEST FOR PERMISSION TO CONDUCT THE STUDY

Request for permission to conduct research at public universities in Addis Ababa city administration Addis Ababa Ethiopia

“Assess the effects of digital Social Networks utilization on youth sexual and Reproductive Health in Public University, Addis Ababa, Ethiopia.

March 2022

GIRMA ABDISSA GOBENA

Health studies

Phone +251911301132 /930536553

E-mail-girmaabdissa@gmail.com

Skype-girma. abdissa

Addis Ababa Ethiopia

I, GOBENA GIRMA ABDISSA am doing research with Prof FM. Mfidi in the Department of Health studies towards partial fulfillment of the requirement for a Doctoral degree of philosophy in public health at the University of South Africa. We have funding from the Minister of Science and Higher Education. We are inviting you to participate in a study entitled Assess the effects of Modern Digital Social Networks Utilization on youth sexual and Reproductive Health in a public university in Addis Ababa City administrative, Addis Ababa, Ethiopia.

The primary aim of the research is to The purpose of this study is to investigate the effects of modern digital social network utilization on youth sexual and Reproductive Health in the public University, *in Addis Ababa City Administration, Ethiopia*. Your company has been selected because the Educational University in the country

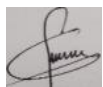
The study will entail a mixed method design and will be conducted among 428 University students by using a semi-structured self-administered, in Phase I, and an in-depth interviewer open-ended questionnaire for qualitative strands in Phase II.

This research is used in the planning of sexual and reproductive health needs of youth to acknowledge the significance of social media in influencing the health of young people and assist in the strategic design for promoting healthy sexual behaviour in undergraduate relationships (network structures & content) healthy the members as a strategy to safeguard them from risky sexual behaviour

Potential risks are- No potential risk

The feedback procedure will entail submitting the final paper to the university and publication in reputable journals

Yours sincerely



GIRMA ABDISSA GOBENA

PhD student at UNISA

PERMISSION TO CONDUCT RESEARCH STUDY

Name of the Researcher: - GOBENA GIRMA ABDISSA (BSc, MSc)

Student Number: - 10206019

Supervisor: - Prof. FH. Mfidi

Title of Research Study: The effects of modern digital social network utilization on youth sexual and reproductive health in the public university in Addis Ababa City Administrative, Addis Ababa, Ethiopia.

Address of researcher: - Kotebe University of Education Menelik II Medical & Health Science College

- Telephone: +251911301132 / +251930536553

- Po. Box: 3268 Addis Ababa Ethiopia

- E-mail: - girmaabdissa@gmail.com

-Skype-girma. abdissa1

Request for permission to conduct research at Addis Ababa city administration educational office..

Date: / /

Attention:

Tel:

Email:

Dear

I am writing to request permission to collect data at your institution. I am currently enrolled in a Doctoral program at, the University of South Africa (UNISA) and I am in the process of developing a doctoral thesis. My research study is to assess the effects of Modern digital Social Networks utilization on youth sexual and Reproductive Health in the public University in Addis Ababa city administrative, Addis Ababa, Ethiopia.

. I plan to carry out the study in 2023 after the Health Studies Research Ethics Committee of the University of South Africa has approved the study.

The value and contribution of the research are highly dependent on your support and cooperation in terms of access and control of participants. The study will highly depend on the information obtained from university students. The results of this research are used in the planning of sexual and reproductive health needs of youth to acknowledge the significance of social media in influencing the health of young people and assist in the strategic design for promoting healthy sexual behaviour in undergraduate relationships (network structures & content) healthy the members as a strategy to safeguard them from risky sexual behaviour.

Even though the fact that Ethiopians are not particularly adept at using modern social media, concerns of sexual threat have emerged. Furthermore, there have been very few studies on the topic of modern social networks and their consequences on youth's reproductive health behaviour among public university students, making this research more important..

Practical Implications

The empirical study will therefore follow a mixed-method approach (quantitative and qualitative). The survey will therefore entail the following:

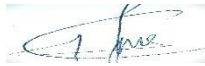
- The sampling procedure for the **quantitative** survey will be a proportionate stratified sampling of public universities within the administration of the educational bureau in Addis Ababa Ethiopia. In this case Addis Ababa University. The participants will be approached to complete an administered questionnaire.
- For the **qualitative** survey, a purposive sampling approach will be followed to select postgraduate students who will be interviewed using a semi-structured questionnaire.
- For control and confidentiality, the questionnaire will be pre-tested (approved) by you and the names of the participating institutions and individuals will not be disclosed. All research data (results and findings) will be treated as confidential.

To conclude - the research proposal will have to be defended at a doctoral colloquium

and approved by the Health Studies Research Ethics Committee (HSREC) of the College of Human Sciences (CHS). *A precondition to the proposal being approved is consent from identified organizations granting permission for the study and access to participants (the organization's staff).*

The Unisia ethical clearance document and confidentiality agreement that has to be completed and signed can be made available on request.

Thank you for your kind cooperation,

A handwritten signature in blue ink, appearing to be 'A. Fre', is positioned above a horizontal line.

Provisional Consent

I hereby give **provisional consent** for the study described in this document to be conducted at Addis Ababa University. Provisional consent is given based on the initial project idea. Final consent for the study will be granted based on a detailed project plan (provided by the researcher) that will be to the advantage of all stakeholders involved.

Annexure 4: students' self-administered questionnaire

Research Topic -The effects of Digital Social Networks utilization on youth sexual and Reproductive Health in public universities. Addis Ababa, Ethiopia.

NB -Your correct answers are very important. Please answer each question carefully and honestly.

1. QUANTITATIVE DATA COLLECTION TOOLS

SECTION 1:1 SOCIO-DEMOGRAPHIC VARIABLES

Q NO	Questions	Alternative choose	Remarks
01	Name of the university you are currently studying? 	☐ AAU ☐ KUE ☐ AASTU	
02	In which type of program you are studying 	☐ Undergraduate (Regular) ☐ Postgraduate (regular)	
03	How old are you in years? 	☐ 18-20yrs ☐ 21-22yrs ☐ 23-24yrs ☐ 25+	
04	Current residence? 	☐ On campus ☐ Off Campus ☐ Other Specify	
05	What is your gender?	☐ Male ☐ Female ☐ No answer	

06	What is your current marital status?	☐ Single ☐ Married ☐ Divorced ☐ Separated ☐ Other (please specify)	
07	What is your father's level of education?	☐ No formal education ☐ Primary school ☐ secondary school ☐ High school ☐ University /college graduate	
08	What is your mother's level of education?	☐ No formal education ☐ Primary school ☐ secondary school ☐ High school ☐ University/college graduate	
09	How religious do you consider yourself to be?	☐ Highly religious ☐ Religious ☐ Somewhat religious ☐ Not at all religious	

SECTION 1. 2: NETWORK AND HEALTINFORMATIONNS

Q NO	Questions	Alternative choose	Remarks
201	Do you have or have access to the following items? (tick all applicable)	☐ Smart-phone ☐ Desktop/laptop computer ☐ Gaming device/tablet ☐ Not at all	
202	About how often do you use the internet on a computer or a cellphone?	☐ Almost constantly ☐ Several times a day ☐ About once a day	

		☐ Several times a week ☐ Less often	
203	Do you ever use any of the following social media sites? (Tick all apply)	☐ YouTube ☐ Facebook ☐ Twitter ☐ Telegram ☐ What's app ☐ Instagram ☐ Others specify	
204	If using more than one social media site, which one of these sites do you use the most often?	☐ YouTube ☐ Facebook ☐ Twitter ☐ Telegram ☐ WhatsApp ☐ Instagram ☐ Others specify	
205	How often do you exchange SMS with parents?	☐ Never ☐ A few times a week ☐ At least once a day ☐ Several times a day	
206	How often do you exchange SMS with friends?	☐ Never ☐ A few times a week ☐ At least once a da ☐ Several times a day	
207	How often do you exchange SMS with your boyfriend/ girlfriend?	☐ Never ☐ A few times a week ☐ At least once a day ☐ Several times a day	
208	Why do you use digital social	☐ Education	

	networks platform? (Tick all that apply)	☐ Entertainment ☐ Sexual inflicting pictures/videos ☐ Others specify	
209	Do you think it is easy to obtain information on sexual and reproductive health from digital social network platforms?	☐ Yes, go to question 2011 ☐ No Go to the next question	
210	If No, why is it not easy?	☐ Don't know where to obtain information ☐ Parents disapprove ☐ No services available ☐ Services providers disapprove ☐ I feel shy ☐ Other (please specify).	
211	Which sexually transmitted infections (STI) have you heard of? (Tick all that apply)	☐ Gonorrhea ☐ Syphilis ☐ Chlamydia ☐ HIV/AIDS ☐ Herpes/zores / sore ☐ Don't know any	
212	Where did you hear about any of these sexually transmitted infections? (Tick all that apply)	☐ DSM ☐ TV/Radio ☐ Newspapers ☐ Clinic/Health Professional ☐ School ☐ Friends ☐ Other (please specify).	

213	What kind of information on the digital social networks platform would you want to know regarding your sexual and reproductive health? (Tick all that apply)	☐ Sexual intercourse ☐ Genital hygiene ☐ Contraception (methods of preventing pregnancy) ☐ Sexual problems ☐ Sexually transmitted diseases ☐ Other, please write what information to know	
214	Reliable information can be found on the digital social network.	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	

SECTION 1.3 BENEFITS AND THREATS QUESTIONS

Q.No	Questions	Alternative choose	Remarks
301	Do you think digital Social network information would increase the incidence of sex practices?	☐ Yes ☐ No ☐ Don't know	
302	Have you seen films that illustrated sexual activity? If your answer is NO skip to Q.306	☐ Yes ☐ No	
303	If your answers are yes? How often have you seen films that illustrate sexual activity?	☐ Once or twice for the last 6 weeks ☐ 3 to 4 times for the last 6 weeks ☐ 4 or more times for the last weeks	
304	Have you seen photographs	☐ Yes	

	of pornographic sexual activity? If your answer is NO skip to Q 306	☐ No	
305	If your answer is yes, how often have you had occasion to see photographs of pornographic sexual activity?	☐ Once or twice for the last 6 weeks ☐ 3 to 4 times for the last 6 weeks ☐ 4 or more times for the last 6 weeks	
306	Do you post a lot of selflessness on your DSM? If your answer is No skip to Q 309	☐ Yes ☐ No	
307	If you answer yes, on what occasions do you find yourself taking selflessness?	☐ During relaxation with your peers ☐ During relaxation with boy/girl friends ☐ Others specify -----	
308	If your answer is yes for Q 307, When do you decide to post them on your social media page?	☐ During day time ☐ During nighttime ☐ Any time ☐ Other Specify	
309	Ever had sexual intercourse?	☐ Yes ☐ No if No skip to question 317	
310	If your answer is YES, have you used condoms in the last 6 months?	☐ Yes ☐ No	
311	Are you have two or more partners?	☐ Yes ☐ No	

312	Are you using alcohol/partner used alcohol for the last 6 months?	☐ Yes ☐ No	
313	Have you ever had any sexual or reproductive health problems or concerns?	☐ Yes, Go to the next question ☐ No Go to question 317	
314	If yes, what kind of problems or concerns did you have?	☐ Genital ulcer ☐ Premenstrual tension (PMS) ☐ Hygiene ☐ Excessive genital discharges ☐ Other (please write any problems you had)	
315	Have you EVER needed to seek medical care or advice for these concerns or need any help or advice regarding sexual and reproductive health matters?	☐ Yes ☐ No	
316	If yes, where did you go?	☐ Governmental hospital/health centers ☐ Private clinic /hospital ☐ Friends ☐ Other (please specify)	
317	Overall, what effect would you say DSN has had on people your age?	☐ Mostly positive ☐ Mostly negative ☐ Neither positive nor negative ☐ No effect	
318	If your answer to Q-317 is mostly positive, what are	☐ Communication with friends and family /self-expression	

	DSN's positive effects? (Tick all if applicable)	☐ Finding health information/news/current events, getting support ☐ Meeting people with similar interests /Learning new things ☐ Happiness, entertainment, convenience ☐ Other-specify -----	
319	If your answer to Q-317 is mostly Negative, what are DSN's negative effects? (Tick all if applicable)	☐ Multiple partners/Bullying/spreading rumors ☐ Harms relationships/not enough in-person communication & gives youths an unrealistic picture of others' lives. ☐ Initiating early sexual desire & unprotected sexual feelings ,spreading harassment &rape ☐ Distracted or addicted to devices .peer pressure /youth too easily influenced ☐ Other /specify ---.	

SECTION 1.4 PERSONAL EXPERIENCES TOWARDS SEXUAL HEALTH

Q.No	Questions	Alternative choose	Remark
401	Have you ever talked with anybody about sexual experience and reproductive health matters?	☐ Yes ☐ No	
402	Who are the people you most often talk with about sexual and reproductive health matters?	☐ Father/Mother ☐ Sister/brother ☐ Teacher	

	(Tick all that apply)	☐ Friends ☐ Physician ☐ Other (please specify)	
403	What is your personal experience of the following statements?		
	403.1. It is all right for unmarried boys to have girlfriends.	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
	403.2. It is all right for unmarried girls to have boyfriends.	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
	403.3. It is not all right for boys and girls to have physical intimacy, such as touching, kissing, and hugging the opposite sex .before marriage	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
	403.4. It is wrong for unmarried boys and girls to have sexual intercourse, even if they love each other	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
	403.5. It is all right for boys and girls to have sex before marriage if they use methods to prevent	☐ Strongly agree ☐ Agree ☐ Neutral	

	pregnancy.	☐ Disagree ☐ Strongly disagree	
	403.6. My religious beliefs are against premarital sex.	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
	403.7. It is okay for boys to have sex before marriage but not so for girls	☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree	
404	In your experience in a university setting, which of the reproductive and sexual health services listed below should be provided to university students? (Tick all if applicable)	☐ Reproductive health information through a digital social networks platform ☐ Education on youth reproductive and sexual health matters ☐ Clinics for sexual and reproductive health problems ☐ Supply of Contraceptives and instruction for use ☐ Treatment and information on sexually transmitted diseases ☐ Formal Classes on sexual relationships and premarital preparation	
405	Do you have the experience to attend any courses on sexual	☐ Yes ☐ No	

	and reproductive health at university?		
406	How to introduced sexual reproductive health education in to your program?	☐ Introduced standalone course ☐ Incorporate in to existing course.	

Is there anything that you want to add?

.....
.....
.....

Dear students

Please place the questionnaire in the envelope provided then seal it after that return the sealed envelope to the researcher.

THANK YOU VERY MUCH FOR COMPLETING THE QUESTIONNAIRE. YOUR HELP IS VERY MUCH APPRECIATED.

If you have any suggestions or other concerns in this regard, please feel free to contact me below address

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Phone +251911301132 /930536553

E-mail-girmaabdissa@gmail.com Skype-girma. abdissa1

Addis Ababa Ethiopia

Annexure 5: Interview guide

QUALITATIVE QUESTIONNAIRE DATA TOOLS

Q1. What is the information regarding their sexuality and reproductive health, university students' access using digital social networks?

Q2. What are the perceived benefits and threats of using modern social networks for youths in terms of sexual and reproductive health?

Q3. What are university students' experiences of using digital social network for their sexuality and reproductive health?

Q4. What guidelines would assist in promoting health sexual and reproductive health through learning programs in universities?

Annexure 6: validation tools

AGREE-REX (Appraisal of Guidelines REsearch and Evaluation – Recommendations Excellency)

The AGREE-REX is a valid and reliable tool to assess the quality of guideline recommendations and a strategy to inform their development and reporting. The AGREE-REX aims to optimize the quality of guideline recommendations, defined as recommendations that are clinically credible, trustworthy, and implementable.thee)

AGREE-REX DOMAINS, ITEMS, AND CRITERIA

The AGREE-REX consists of nine items organized within three theoretical domains (Table 1), each focusing on a different factor that influences the quality of guideline recommendations. Each of the nine items has an operational definition and a list of specific criteria that characterize the concept. The number of criteria across the items ranges between 2 and 10.

Table 1. Domains and Items of the AGREE-REX

Domains	Items
1. Clinical Applicability	1. Evidence 2. Applicability to Target Users 3. Applicability to Patients/Populations
2. Values and Preferences	4. Values and Preferences of Target Users 5. Values and Preferences of

	Patients/Populations 6. Values and Preferences of Policy/Decision-Makers 7. Values and Preferences of Guideline Developers
3. Implementable	8. Purpose 9. Local Application and Adoption

Rating Scale and Assessment Process

The AGREE-REX includes two evaluation statements for each item: one to assess overall quality (required) and one to assess suitability for use (optional). It also includes two overall assessment statements to apply to the whole guideline (again, one required and one optional).

Quality Assessment: Rate the overall quality of this item

1	2	3	4	5	6	7
Lowest quality						Highest quality

This evaluation statement should be applied to determine whether criteria to optimize clinically credibility, trustworthiness, and implementable were considered in formulating the recommendations. All items are rated using a 7-point scale (1 [lowest quality] to 7 [highest quality]).

- A score of 1 should be given if there is no information that is relevant to the AGREE-REX item's criteria or the item's criteria were not considered in the formulation of the guideline recommendations
- A score of 7 should be given if all the item's criteria have been carefully and thoroughly considered in the formulation of the recommendation(s).

- A score between 2 and 6 should be given when some but not all of the item's criteria are considered in the formulation of the recommendation(s) and/or the link between the criteria and the recommendations is not optimal.

- The appraiser should provide their reasoning for the score in the comments box provided. This is useful for discussion with other appraisers.

Suitability for Use (Optional): The overall quality and interpretation of the item criteria are appropriate for my context

1	2	3	4	5	6	7
Strong disagree						Strong agree

This evaluation statement is optional and can be applied to the items if the goal of the evaluation is also to determine whether or not the guideline recommendations are appropriate for use in a particular setting.

All items are rated using a 7-point scale (1 [strongly disagree] to 7 [strongly agree]).

- A score of 1 should be given when there is no information that is relevant to the AGREE-REX item's criteria or and interpretation of the item's criteria are not appropriate for the context in which the appraiser intends to use the guideline recommendations.

- A score of 7 should be given if the quality is excellent and the interpretation of the item's criteria are appropriate for the context in which the guideline will be used.

- A score between 2 and 6 should be given if some but not all of the interpretations of the item's criteria associated with the recommendation are appropriate for the context in which the guideline will be used.

- The appraiser should provide their reasoning for the score in the comments box provided. Overall Assessment Statements: The overall assessment statements require the user to make a judgement about whether the appraiser would recommend the guideline recommendations for use 1. in the appropriate context, and, if applicable, 2. in the appraiser's context. The appraiser has three answer options: yes, yes with modifications, or no

1. I would recommend these guideline recommendations for use in the appropriate context

Yes
Yes with modification
No

2. I would recommend these guideline recommendations for use in my context (optional)

Yes
Yes with modification
No

Calculating AGREE-REX Scores

AGREE-REX results can be calculated and reported in various ways, including as item scores, domain scores, or an overall score. In addition, users must decide whether the scores will be calculated using individual scores from multiple appraisers or if appraisers will be required to reach consensus on scores.

Item Scores, Domain Scores, and Overall Score

Item scores

AGREE-REX items scores can be calculated by averaging the individual appraisers' scores (i.e., calculating the mean) on the 7-point scale (1=strongly disagree; 7=strongly agree) for each of the nine items. If a consensus approach is used to determine scores, then the consensus scores are the item scores. Advantages of reporting item scores are that no assumptions need to be made about the weighting or relative importance of the items, and it allows users to make observations or comparisons at the item level.

Domain scores

AGREE-REX domain scores can be calculated by adding all the scores of the individual items in a domain (the sum of the item scores is referred to as the “obtained score” in the formula below) and by scaling the total as a percentage of the maximum possible score. If item scores are determined by consensus, the same formula can be used. Reporting domain scores allows users to make observations and comparisons based on domain themes (clinical applicability, values, and impermeability). The limitation of this method is that the clustering of the nine items into the three domains is based on the face validity of the cluster, and not empirical evidence. In addition, there is no empirical evidence available to determine the weighting or relative importance of the items within the domains; in the formula below, all items are given equal weighting within a domain.

Overall score

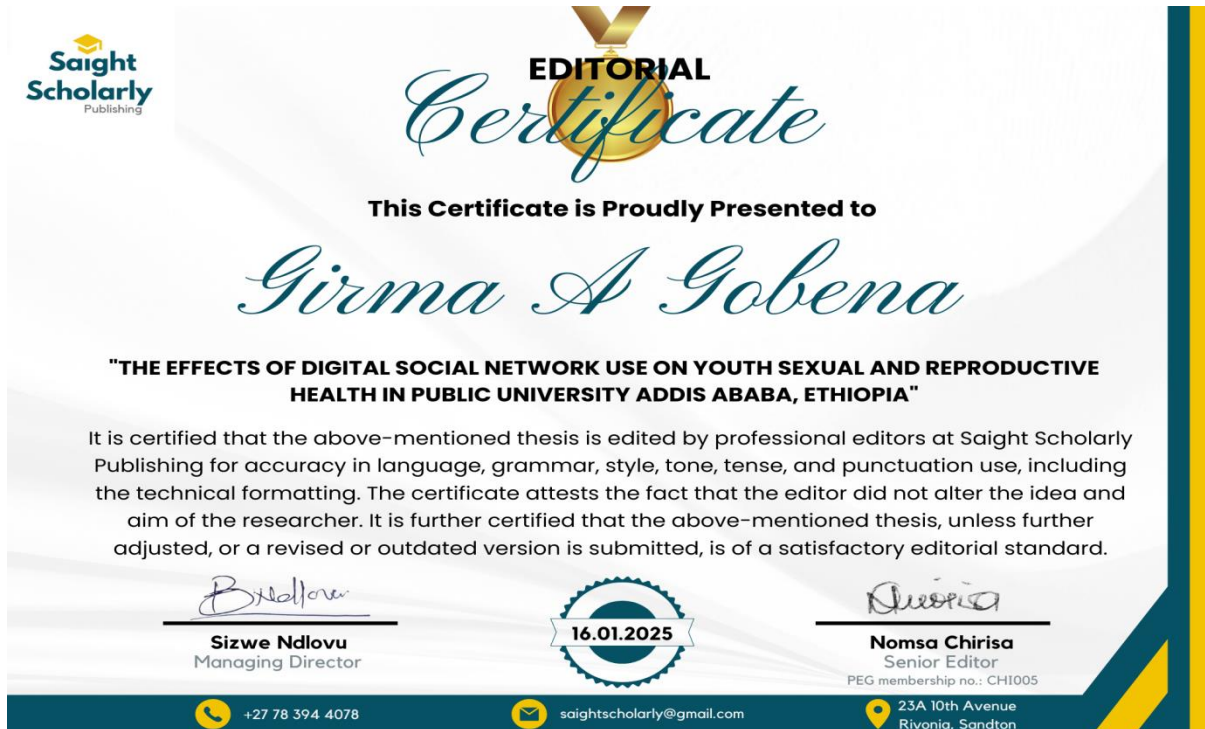
An AGREE-REX overall score can be calculated by adding all nine item scores and using the formula above to scale the total as a percentage of the maximum possible scale. If item scores are determined by consensus, the same formula can be used. Reporting an overall score provides a simple way to describe the quality of guideline recommendations overall and to compare between multiple guidelines. However, an overall score on its own does not provide precise information about the particular strengths and weaknesses of the guideline recommendations. In addition, an overall score assigns equal weighting to each of the nine items, but there is no evidence available to determine the relative importance of the items in determining the quality of guideline recommendations.

Interpreting

AGREE-REX Scores At present, there are no empirical data to link specific quality scores (item scores, domain scores or overall scores) with specific implementation outcomes (e.g., speed of adoption, spread of adoption) or specific clinical outcomes; this makes selection of quality thresholds to differentiate between high, moderate, or low quality guideline recommendations a challenge. In the absence of these data, we provide examples of approaches that can be used to set quality thresholds:

- Users could perform a tertile split of the overall score (or domain scores or overall score) of the candidate guidelines being considered and classify documents as being higher quality, moderate quality, or lower quality.
- Users may determine threshold scores through consensus among stakeholders or appraisers. For example, guidelines with overall scores >70% may be defined as high quality, those with overall quality scores <30% lower quality, and all others moderate quality.
- Users might value one item or domain over the others for their decision-making purposes and create thresholds based on that item or domain.
- Users may use AGREE-REX Scores as a continuous variable and conduct modelling exercises to determine what AGREE-REX scores predict certain outcomes and use that score as the threshold. Any decisions about how to define minimum thresholds for quality or applicability should be made by a panel of all relevant stakeholders before beginning the AGREE-REX appraisals. Decisions should be guided by the context in which the practice guideline is to be used and by evaluating the importance of the different items and criteria in that context. For example, stakeholders can use scores to compare practice guidelines documents and identify limitations of the guidance being considered, or to select high quality practice guidelines to implement.

Annexure 7: Letter from the Language Editor



Annexure 8 : Originality Turnitin Report

PAPER NAME	AUTHOR
THE EFFECTS OF DIGITAL SOCIAL NETWORK USE ON YOUTH SEXUAL AND REPRODUCTIVE HEALTH IN PUBLIC UNIVERSITIES ADDIS ABABA%2C ETHIOPIA.docx	GIRMA ABDISSA GOBENA

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35273 Words	206378 Characters
PAGE COUNT	FILE SIZE
168 Pages	5.7MB
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Annexure 9: CONFIDENTIALITY BINDING FORM

Title of the study: - The effects of digital Social Networks utilization on youth sexual and Reproductive Health in the public University in Addis Ababa City Administrative, Addis Ababa, Ethiopia.

Name of the Researcher: - Gobena GIRMA ABDISSA (BSC, MSC)

Student Number: - 10206019

Supervisors: - Prof. Prof. FH. Mfid

My name is Gobena GIRMA ABDISSA who is studying with the University of South Africa (UNISA). I understand that I may have access to confidential information about study sites and participants. By signing this statement, I am indicating my understanding of my responsibilities to maintain confidentiality and agree to the following: -

- I understand that names and any other identifying information about study sites and participants are completely confidential.
- I agree not to divulge, publish, or otherwise make known to unauthorized persons or to the public any information obtained in the course of this research project that could identify the persons who participated in the study.
- I understand that all information about study sites or participants obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to unauthorized persons any of this information unless specifically authorized to do so by approved protocol or by the local principal investigator acting in response to applicable law court order, or public health or clinical need.
- I understand that I am not to read information about study sites or participants, or any other confidential documents, nor ask questions of study participants for my personal information but only to the extent and to perform my assigned duties on this research project.
- I agree to notify the principal investigator immediately should I become aware of an actual breach of confidentiality or a situation that could potentially result in a breach, whether this be on my part or the part of another person.

Signature

Date

Printed name

Signature of Researcher**Date****Printed name**

Summarizes the association of DSM usage among respondents with various socio-demographic variables in Addis Ababa Ethiopia

Association of different selective variables									
		Gender	education of Father	Frequency of DSM usage	have you seen sexual	seen Pornography	history of sexual	Had reproductive	experience in attending
Gender	Pearson Corrélation	1	.260*	-.039	-.251*	-.197*	-.040	-.070	-.044
	Sig. (2-tailed)		.000	.439	.000	.000	.433	.297	.388
	N	393	393	393	393	393	393	226	393
Father Education status	Pearson Corrélation	.260*	1	-.230*	.103*	.123*	-.052	-.207*	-.087
	Sig. (2-tailed)	.000		.000	.042	.015	.308	.002	.085
	N	393	393	393	393	393	393	226	393
Frequency of DSM usage	Pearson Corrélation	-.039	-.230*	1	-.099	-.077	-.047	-.038	-.114*
	Sig. (2-tailed)	.439	.000		.050	.128	.349	.574	.024
	N	393	393	393	393	393	393	226	393

have you seen sexual activity films?	Pearson Corrélation	- .251*	.103*	-.099	1	.666*	.263*	.206*	-.020
	Sig. (2-tailed)	.000	.042	.050		.000	.000	.002	.697
	N	393	393	393	393	393	393	226	393
seen of Pornography/photography sexual activity	Pearson Corrélation	- .197*	.123*	-.077	.666*	1	.229*	.125	-.013
	Sig. (2-tailed)	.000	.015	.128	.000		.000	.061	.793
	N	393	393	393	393	393	393	226	393
History of sexual intercourse	Pearson Corrélation	- .040	-.052	-.047	.263*	.229*	1	. ^c	.186*
	Sig. (2-tailed)	.433	.308	.349	.000	.000		.000	.000
	N	393	393	393	393	393	393	226	393
Had reproductive health-problems	Pearson Corrélation	- .070	-.207*	-.038	.206*	.125	. ^c	1	.170*
	Sig. (2-tailed)	.297	.002	.574	.002	.061	.000		.011
	N	226	226	226	226	226	226	226	226
experience in attending sexual and reproductive courses at the university	Pearson Corrélation	- .044	-.087	-.114*	-.020	-.013	.186*	.170*	1
	Sig. (2-tailed)	.388	.085	.024	.697	.793	.000	.011	
	N	393	393	393	393	393	393	226	393

**. Correlation is significant at the 0.01 level (2-tailed).

- *. Correlation is significant at the 0.05 level (2-tailed).
- c. Cannot be computed because at least one of the variables is constant.