UNIVERSITY OF CAPE COAST

SEXUAL HEALTH AND ACADEMIC EXPERIENCE AMONG FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT IN GHANA

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BY

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Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Special Education

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ..... Date:.....

Name:

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature:..... Date:.....

Name:

Co-Supervisor's Signature: ..... Date:.....

Name:

ABSTRACT

The study explored the sexual health and academic experience of female adolescents with visual impairment in Ghana. Using an embedded mixed method design, five inclusive Senior High Schools (SHSs) were selected for the study. Overall, 71 female adolescents with visual impairment (FAVI) participated in the quantitative aspect of the study, however, 14 participants were purposively selected for the qualitative aspect of the study. Data gathered with the questionnaire was analysed using mean, standard deviation, percentages (%), ANOVA, and t-test, whilst the qualitative data was analysed using thematic content analysis. The study revealed that female adolescents with visual impairment had below-average levels of knowledge of sexual health. Religious background and age range had a significant influence on sexual health knowledge. Again, menstrual periods during school days/hours affected FAVI's academic experience. That is their class attendance, level of concentration on academic exercise during class hours or contact hours, and relationship with classmates were affected by students' menstrual cycle. FAVI's relationship with their male teachers was also affected in that male teachers probably did not understand the full impact of menstruation and therefore had a challenge understanding these students in class during their menstrual periods. The study recommended that Guidance and Counselling Units in the various SHSs should as a matter of urgency prioritize the provision of guidance on sexual health to improve FAVI experience of sexual health, especially issues related to menstrual health.

KEYWORDS

Academic experience

Adolescents

Sexual Health

Sexuality

Visual impairment

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DEDICATION

To Mr. Nyame McDaniels.

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LIST OF ABBREVIATIONS

FAVI	Female Adolescents with Visual Impairment
PWDs	Persons with Disabilities
UCC	University of Cape Coast
WHO	World Health Organisation
STDs	Sexually Transmitted Diseases

CHAPTER ONE

INTRODUCTION

Access to good sexual health has been touted as one key element that can fuel persons with disabilities to experience academic success and healthy living. However, across the globe persons with disabilities are confronted with stereotypes regarding their sexuality including being infantilised and often seen as asexual, incapable of reproduction, and unfit for sexual/marriage partners. Such a person's sexual health continues to be contested and/or not prioritised by society and health systems. Hence, persons with disabilities seem to be confronted with additional barriers that emanate from socio-cultural norms, and religious beliefs to sexual health (Addlakha, Price & Heidari, 2017). The inadequate knowledge and insufficient education especially among female adolescents with visual impairment make them vulnerable to unscrupulous people who take advantage of them and subject them to sexual abuse. To this end, this study aims to investigate how female adolescents with visual impairments sexual health influence their academic experience.

Background to the Study

During the adolescent period, young people undergo a series of changes that include physical and psychological changes which may have implications for their social, economic, and health development (Kuruvilla et al., 2016, WHO, 2016). The health and development of young people including adolescents with visual impairment are crucial for the development of the country (Kuruvilla et al., 2016). Empirical evidence shows that advanced countries with strong adolescent health programmes tend to benefit

from a supportive political environment as well as policies and strategies that promote the health and well-being of adolescents and young people (Kuruvilla et al., 2016). In contrast, in many of the developing world where there is weaker health programmes and policies, weaker health programs often exacerbate existing health inequities and disparities (Thomson, Hillier-Brown, Todd, McNamara, Huijts & Bambra, 2018; WHO, 2014). Adolescents from marginalized communities, including those in rural areas, low-income families, or minority groups, are disproportionately affected. In the absence of comprehensive health programs, adolescents may lack adequate education and guidance on reproductive health, sexual education, and substance abuse prevention (Thomson et al., 2018). This can lead to higher rates of unprotected sex, sexually transmitted infections (STIs), unintended pregnancies, and engagement in risky behaviours such as drug abuse and unsafe sexual practices.

Adolescence is a stage of life marked by a number of physiological and hormonal changes that result in the development of sexual maturity and the ability to reproduce (Lewis, 2022). Female adolescents start to want to understand their development and the changes they go through at this point (Kyilleh, Tabong & Konlaan, 2018). Given that there are approximately 1.3 billion adolescents in the world (UNICEF. 2020) and that this generation is seen as the future human resource for the socioeconomic development of every nation, it is more crucial than ever to pay attention to adolescents' sexual health issues. To ensure that adolescents live healthy lives, they must have easy access to information about sexual health (Kyilleh et al., 2018). Female adolescents in developed and developing nations experience similar

difficulties with regard to their sexual health as they transition from childhood to adulthood (Kyilleh et al., 2018). These difficulties include everything from early pregnancy, accessing information on contraceptives, and abortion to sexually transmitted infections (Morris & Rushwan, 2015). Additionally, some academics have emphasised the significance of exposing female adolescents to issues related to sexual health (Kapinga & Hyera, 2015). Female adolescent sexual health education gives female adolescents the knowledge, skills, and resources they need to make wise decisions about their sexual health (Morris & Rushwan 2015).

Female adolescents with visual impairment are mostly abused sexually, and this could be attributed to their condition, and low level of understanding of sexual health, lack of proper sexual health systems and policies (Badu, Gyamfi, Opoku, Mprah, & Edusei, 2018). Badu et al. (2018) asserted that adolescents are active engagers of sexual acts but they lack the knowledge and understanding of sexual and reproductive health. This tends to affect the physical, psychological, moral, economic, educational, and social well-being of these individuals, and therefore the need for research and advocacy. Many of these adolescents with visual impairment are mostly taken advantage of by predators or unscrupulous individuals in society (Badu et al, 2018). However, it appears that research and advocacy work undertaken on behalf of these vulnerable groups has paid little or no attention to this issue of the sexual health of adolescents with visual impairment. The seeming neglect of the sexual health of adolescents with visual impairment may likely affect their well-being and thereby affect progress toward achieving the Sustainable Development Goals (SDGs) of leaving no one behind.

More than a decade ago the World Health Organisation (WHO) opined that sexual health is a state of physical, emotional, mental, and social well-being about sexuality; it is not merely the absence of disease, dysfunction, or infirmity (WHO, 2006). Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence (WHO, 2006). For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected, and fulfilled.

Existing research suggests that female teenagers who are visually impaired participate in sexual acts regularly, nevertheless, do not have access to relevant information on important issues relating to their sexual health (Krupa & Esmail, 2019). However, good sexual health requires that there is available and accessible quality sexual health information and services that minimise unintended pregnancy, disease, or trauma on the part of teenagers with disabilities. Despite the tremendous and widespread attention that sexual health has received in international policies and regulations, the search for sexual health, and the desires of persons with disabilities (PWDs) are rarely addressed (Cook, Dickens & Fathalla, 2003; Cottingham, et al., 2010; Gruskin, 2005). Research has shown that PWDs are often regarded as unappealing, asexual, or sexually impaired (Bremer, Cockburn & Ruth, 2010; Parker & Yau, 2012). Naturally, sexual relationship is hard to manage, and having a disability even makes it more difficult. Largely, society mistakenly believes that female adolescents with disabilities are asexual and therefore cannot be taken advantage of (Ortoleva & Lewis, 2012; Shogren, Wehmeyer,

Palmer, Rifenbark & Little, 2015), however, persons with disabilities have been sexually abused severally. Persons with disabilities and their sympathisers have always fought to eradicate exploitation, mistreatment, injustice, and inequality in the society where they find themselves (Bruinius, 2006). Their agitations over the years have seen some legislation on social justice that protects persons with disabilities rights to health, education, and employment (Cortiella, 2006; Gargiulo, 2015).

Again, the sexual health of adolescents with disabilities has frequently been undermined by both the disability communities and the sexual and reproductive health professionals (WHO, 2016). This places adolescents with disabilities on sexual health services with marginalised groups. It is worth noting that teenagers with disabilities just like everyone else, have equal or more demand for sexual health services and beyond. Because of their increased vulnerability to sexual abuse, female adolescents with disabilities may require more sexual health education and care than those without a disability (WHO, 2016).

Evidence-based studies are scarce on the sexual health of disabled people from African countries (Morrison, Hardison, Matthew, & O'Neil, 2004). It is a known fact that Africa is a large continent with different socio-cultural backgrounds and therefore has varied health situations from country to country as well as from district, locality, and ethnic group. These diversities affect the way the sexual health of its individuals is perceived, especially with persons with disabilities. In many parts of the world, the sexual and reproductive needs of adolescents are either poorly understood or not fully recognised, and evidence is growing that this neglect can seriously put the

health and well-being of young people in danger (WHO, 2016). This calls for more research for a better understanding of the health issues encountered by adolescents.

According to the UN, there are more than 80 million disabled people in Africa, including those who suffer from mental health issues, birth defects, and other physical impairments (Cobley, 2018). Research works on the living conditions or status among persons with disabilities in three African countries namely; Namibia, Zimbabwe, and Zambia have shown that persons with disabilities have poorer living conditions in each of the respective countries than those without disabilities (Eide & Loeb, 2006; Eide, Loeb, Nhiwatiwa, Munthali, Ngulube & van Rooy, 2011; Loeb, van Rooy & Eide, 2003). Mitra, Posarac, and Vick (2011) asserted that problems that persons with disabilities face include poor health conditions, poverty, low educational and employment participation levels, and poorer social conditions. Research carried out showed that nearly every youth (aged 18 to 24) that participated in the study had once been subjected to at least one sexual abuse (The African Child Policy Forum [ACPF], 2014; McKenzie & Chataika, 2018). It has also been revealed that teenagers with disabilities are almost three times more likely to be abused sexually than teenagers without disabilities (Jones, Jemmott, Maharaj & Breo, 2014). There have been instances where female students who are visually impaired have been sexually abused in some Special Schools in Ghana. Graphic Online on 19th December 2019 reported that 'the Chaplain who allegedly raped a blind female student at the Akropong School for the Blind has been arrested by the Eastern Regional Police' (Graphic Online, 2019).

These sexual abuses subjected to female adolescents with visual impairment are partly due to the limited knowledge of sexual health and its related matters.

The situation on issues about sexual health and disability in Ghana is not all that different from other African countries. For instance, Badu et al., (2018) reported that female adolescents with visual impairment were active seekers of sexual health information and services, however, they do not receive the needed information. The researchers went on to say that these individuals attributed their predicaments of sexual information to a lack of family caregivers' support. If adult women with visual impairment are struggling with essential issues surrounding sexual health what would be the plight of adolescents with visual impairment especially those in Special Schools where they lack a lot of resources? (Opoku, 2016).

Health and learning are closely connected in the school setting because good health and healthy practices create optimal conditions for students' academic success (Gill, Trask-Kerr & Vella-Brodrick, 2021). The contrary is also true, poor health and unhealthy practices build tall barriers to adolescent learning. Health-risk behaviours such as substance abuse, sexual abuse, and violence are consistently linked to poor grades and test scores and lower educational attainment (Turchik, 2012). Evidence shows that the health of students is linked to their academic achievement and the acquisition of education in general. Research undertaken among young adults in Ireland showed that those with a lower level of education were more likely to have sexual contact at a younger age, were less likely to have routine contraceptives, and were less well-educated about sexually transmitted diseases such as chlamydia (Layte et al., 2006). In a similar vein, dysphoria

which is usually associated with symptoms of menstrual periods is likely to affect their academic experience (Tsegaye & Getachew, 2019). A study has also discovered the impact that sexual health can have on a person's interpersonal relationships, which can affect their ability to form and maintain meaningful connections with peers and teachers (Wetherill, Neal & Fromme, 2010). If a person is experiencing sexual health issues such as sexually transmitted infections (STIs) or chronic pain related to sexual activity, it can affect their physical well-being and make it difficult to concentrate or attend classes regularly. However, research on health issues and academic success is mostly geared toward substance abuse and academic performance (Akanbi, Augustina, Theophilus, Muritala & Ajiboye, 2015; Dankano & Garba, 2017), and health and education (Woolf, Zimmerman, Haley, & Krist, 2016). It appears individuals with visual impairment especially in Ghana do not get an equal chance to access sexual information and sexual education as it is for persons without such disability, even though female adolescents with visual impairment for instance engage in sexual activity (Kelly & Kapperman, 2012; Krupa & Esmail, 2019). The few research that did, considered sexual and reproductive health and not necessarily on sexual health and academic experience of the young females who are sexually active but find themselves in the bracket where less attention is offered to them.

Statement of the Problem

Sexual health is a crucial aspect of overall well-being, particularly for adolescents who are navigating significant physical, emotional, and social changes (Kågesten & van Reeuwijk, 2021; Hensel, Nance, & Fortenberry, 2016). For female adolescents with visual impairment in Ghana, the

intersection of sexual health and academic experiences presents unique challenges that are often overlooked in both public health and educational frameworks (Abdul Karimu, 2017; Kumi-Kyereme, Seidu, & Darteh, 2021; Ganle, Baatiema, Quansah, & Danso-Appiah, 2020). Despite the progress in inclusive education and healthcare, these young women face compounded barriers due to their disability, impacting their sexual health knowledge, access to services, and overall academic performance (Qi et al., 2023; Kumi-Kyereme, et al., 2021). Just to expound on a few studies, Kumi-Kyereme et al's (2021) study, for example, found that the major challenges young persons with disabilities face in accessing sexual and reproductive health are the high cost of health services, physical challenges, and problems of communication. Similarly, Abdul Karimu (2017) found that with limited or nil knowledge about issues of sexual health, a number of female students with visual impairment dropped out of school due to unwanted pregnancies. It could be deduced from Kumi-Kyereme et al., and Abdul Karimu's study findings that the dimension of sexual health and academic experience has not been explored to ascertain how sexual health influences or impacts academic experience. Again, in Kumi-Kyereme et al's., study persons with disabilities were studied in generic terms which don't give a clear view of which category of person with a disability whose sexual health demands urgent attention.

Research indicates that female adolescents with visual impairments are at a heightened risk of experiencing sexual exploitation, abuse, and misinformation about sexual health (Chiracu & Buică-Belciu, 2023; Krupa & Esmail, 2010; Klu, et al., 2023). For instance, Chiracu and Buică-Belciu (2023) study which investigated well-being in adolescents with and without

visual impairments discovered that, unlike adolescents without visual impairments, those with visual impairments report lower levels of peer attachment, self-esteem, and well-being, and higher levels of loneliness. The lack of tailored sexual education programmes and accessible resources exacerbates their vulnerability. Traditional modes of sexual health education, which rely heavily on visual materials, do not adequately address the needs of visually impaired students, leading to significant gaps in their understanding and awareness (Krupa & Esmail, 2010; Kelly & Kapperman, 2012; Ortíz, Torres & Díaz, 2001). This knowledge deficit not only affects their ability to make informed decisions about their sexual health but also has broader implications for their psychological and emotional well-being.

In the academic sphere, these challenges are further amplified. Female adolescents with visual impairments often encounter stigmatization and discrimination, which can hinder their academic engagement and success (Bohren et al., 2022). The dual burden of managing their sexual health and striving for academic achievement places immense stress on these young women. Their experiences in school are often marked by a lack of adequate support systems, insufficient training for educators on disability-sensitive approaches, and a general lack of understanding of their specific needs. This environment can lead to lower academic performance, decreased self-esteem, and higher dropout rates.

Moreover, the societal stigma associated with both disability and female sexuality creates an additional layer of difficulty (Bohren et al., 2022). Cultural taboos and misconceptions about the sexuality of individuals with disabilities further marginalize these adolescents, making it challenging for

them to seek and receive appropriate guidance and support (Frawley, 2023). The intersectionality of gender, disability, and adolescence in the context of sexual health is a critical yet under-researched area that demands urgent attention (Mac-Seing, Zinszer, Eryong, Ajok, Ferlatte & Zarowsky, 2020).

Another area of prime importance as far as sexual health and academic research are concerned is the methodology used for investigation. While several studies have investigated this area with either qualitative or quantitative approaches, little is known about blending the two (mixed method) approaches. For instance, Mprah, Duorinaah, Opoku, and Nketsia, (2022) investigation of barriers to the utilization of sexual and reproductive health services among young deaf persons in Ghana using a qualitative approach discovered that young deaf persons were faced with barriers at two levels; point of service delivery and barriers at the individual level. In a similar vein, Kumi-Kyereme (2021)'s study using a quantitative approach investigated sexual and reproductive health services utilisation amongst in-school young people with disabilities in Ghana, and discovered that visually impaired students were more likely to have ever utilised sexual and reproductive health services than the deaf. This leaves a methodological gap that ought to be filled. To this end, addressing the sexual health and academic experiences of female adolescents with visual impairment in Ghana requires a multifaceted approach. Therefore, this study intended to bridge the research gaps by using an embedded mixed-method design to examine the sexual health and academic experience of female adolescents with visual impairment in Ghana.

Purpose of the Study

The purpose of this study is to investigate sexual health and academic experience among female adolescents with visual impairment in Ghana.

Objectives of the Study

1. assess the knowledge level of sexual health among female adolescents with visual impairment.
2. find out the demographic characteristics of FAVI (age, degree of impairment, religious background, and class) on sexual health.
3. investigate the sexual health needs of female adolescents with visual impairment.
4. examine the influence of sociocultural norms on the sexual health of female adolescents with visual impairment.
5. examine the influence of female adolescents' degree of impairment on sexual health.
6. explore the academic experiences of female adolescents with visual impairment.
7. examine how sexual health affect adolescent female with visual impairment academic experience

Research Questions

The importance of identifying and developing a research question is critical in any research project. According to Howie (1991), one's ability to find the right research questions demand that the individual understands what is being asked, and knows how to keep the questions simple enough to be answerable, but challenging enough to be interesting. Given this, the study

sought to answer the following research questions on the bases that the researcher is clear about what he intends to research.

1. What is the knowledge level of female adolescents with visual impairment on sexual health?
2. To what extent does age, class, degree of impairment, and religious background influence sexual health knowledge?
3. What are the sexual health needs of female adolescents with visual impairment?
4. How do socio-cultural norms affect the sexual health of female adolescents with visual impairment?
5. To what extent does the degree of impairment influence the sexual health of female adolescents with visual impairment?
6. What are the academic experiences of female adolescents with visual impairment?
7. To what extent does sexual health affect female adolescents with visual impairment academic experience?

Significance of the Study

Sexual health knowledge contributes to safer sexual behaviour among female adolescents with visual impairment. Given that some sexual behaviours can result in unwanted pregnancies and the spread of sexually transmitted diseases, it is imperative therefore for people of all ages to understand sexual health to stay safe.

The outcome of the findings of this study would raise awareness of sexual health concerns, such as the sexual health needs of adolescents with visual impairment, and cultural factors that affect the sexual health of female

adolescents. It will also support further research efforts to locate more profound sexual health concerns to protect all, especially, persons with disabilities. Gaining a basic understanding of how female adolescents with visual impairment appreciate the issue of sexual health may be opening doors for further research to explore the connection between sexual health and other variables such as self-esteem, educational attainment, or academic performance. It will inform the training of health professionals and adolescents regarding the needs of sexual health, and inform advocacy and sensitization programmes, towards the sexual health of students/adolescents. For example, NGOs and self-help groups, as well as family caregivers could use the findings to promote advocacy campaigns. It will also provide students with knowledge and exposure to quality programmes and reliable age-appropriate information on sexual health. This information will help them to handle sexual health issues appropriately. Educational facilities and hospitals could integrate the need for sexual health by adolescents with disabilities in the planning of health services. Finally, the findings are expected to contribute to literature gaps on sexual health among students and academic communities.

Delimitation

The study focused on the sexual health of female adolescents with visual impairment in Ghana. There are different categories of disabilities, however, in this study, the visually impaired category (female adolescents with visual impairment) was studied and not any other category. Geographically, the study covered five Inclusive Senior High Schools where the population for the study was identified. In terms of content, the study covered sexual health needs, knowledge level of sexual health, socio-cultural

norms, and academic experience of female adolescents with visual impairment.

Limitations of the Study

The underlying aim of scholarly work or research is not only to prove or show what works but also to demonstrate what does not work or what needs further clarification or study. This gives firm recognition of the limitation of a study. Theofanidis and Fountouki (2018), opine that any study's limitations are potential flaws that are usually beyond the researcher's control and are strongly linked to the research design, statistical model constraints, financing constraints, sample size, or other reasons. In this context, a limitation is an imposed restriction over which the researcher has little control. Limitations of a study may affect the study design, results, and ultimately, conclusions and therefore be acknowledged clearly in any research before it is submitted for any certification or publication. Adebayo, Salerno, Francillon, and Williams (2018) suggest that limitations of a study could also result from the sample size, lack of available and/or reliable data, lack of prior research studies on the topic, and measures used to collect the data.

In this study, the limitation that the researcher encountered had to do with the administration of the questionnaire. One of the basic tenets of the use of a questionnaire is that the respondent should be able to read and respond to the items accordingly, however, in this instance, the participants were visually impaired, and the researcher had to read the statements on the questionnaire for respondents to respond. Nevertheless, the researcher brailed a sample of the data for member-checking (credibility) by the participants.

Definition of Key Terms

The following terms have been operationally defined as follows:

Sexual health: It is a state of physical, emotional, mental, and social well-being related to sexuality; it is not merely the absence of disease, dysfunction, or infirmity. /Sexual health is the ability of women and men to enjoy and express their sexuality and to do so free from the risk of sexually transmitted diseases, unwanted pregnancy, coercion, violence, and discrimination.

Visual impairment: It refers to a loss of vision that cannot be corrected to normal vision, even when the person is wearing eyeglasses or contact lenses.

Adolescent: It is defined as a person who is between puberty and adulthood, that is 10 to 24 years.

Academic experience: It has to do with all experiences pertaining to one's or a student's learning within an academic environment.

Sexuality: It is about one's sexual feelings, thoughts, attractions, and behaviours towards other people.

Organisation of the Study

The study was organised into five chapters. Chapter one captured the introduction of the study which looked at the background to the study, statement of the problem, the purpose of the study, objectives of the study, research questions, significance of the study, delimitation of the study, limitations of the study, and operational definition of terms. Chapter two presented the review of related literature, emphasized specified concepts, and presented the theoretical frameworks as well as related empirical studies. Chapter three focused on the research methods that were used in the study. Chapter four presented analyses and discussion of the results of the

demographic data of the participants as well as the seven research questions that guided the study. Finally, chapter five provided a summary of the research process, key findings, conclusion, recommendations based on the findings of the study, implications for practice and policy, and areas for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

According to Efron and Ravid (2019), a literature review is a systematic examination of the scholarly literature about one's topic. A literature review critically examines, assesses, and synthesizes research findings, theories, and practices by scholars and researchers in a specific field. The writer should present a comprehensive, critical, and accurate understanding of the current state of knowledge when reviewing the literature; compare different research studies and theories; identify gaps in the current literature; and indicate what needs to be done to advance what is already known about the topic of choice (Efron & Ravid, 2019). It describes the content and quality of existing knowledge and makes the reader aware of the importance of earlier work (Okoli & Schabram, 2010). The review, as an academic document, cannot merely regurgitate the subject matter; rather, it must contribute to the work by synthesizing the available material and providing a scholarly critique of the theory (Okoli & Schabram, 2010). Given this, a comprehensive search on key concepts such as sexual health, academic experience, theories, and empirical review captures the purpose of the study and methodologies employed in various studies.

Theoretical Framework

Three theories were selected for review in this study. Their selection was based on their ability to explain the circumstances of health and for that matter sexual health in Ghana and beyond. They further help to guide how the

different factors interact to enhance sexual health. Though they are not directly related to sexual health, they are applicable to sexual health.

Theory of Gender and Power

The Theory of Gender and Power was developed by an Australian socio-psychologist, Raewyn Connell, to address the affective nature of relationships (Connell, 1987). This theory emphasises that 'gender' is a social system, not simply a question of personal identity. The theory investigates the causes of sexual inequity, as well as gender and power imbalances, and has been extended to a variety of sexual and reproductive health spheres, including Sexually Transmitted Infections (STI) prevention, gender inequality in women's health, and sexuality and education (Bui & Baruch, 2010; Wingood & DiClemente, 2000). The theory of gender and power is formulated based on three primary social structures that characterise gendered relationships between men and women. These are the sexual division of labour, the sexual division of power, and the structure of emotional and sexual relations.

According to Connell (1987), these are interconnected and occur at both the societal and institutional levels, where they systematically segregate power and ascribe social expectations based on gender-determined roles. These systems have an impact on relationships, families, schools, workplaces, and businesses, religious institutions, the healthcare delivery system, the media, and so on, and they contribute to gender inequality (Bui, & Baruch, 2010; Wingood & DiClemente, 2000). That is, they create gender-based inequities in women's economic potential, their control of resources, and their role in society.

As part of the concept of the sexual division of labour, society allocates specific types of work based solely on sex. Women are assigned unpaid or low-paid tasks such as household chores and childcare while men are earmarked for highly paid, prestigious positions in the workforce. A gender-based system of undervaluing women's labour and low wages affecting health and well-being has profound impacts on the most socioeconomically disadvantaged groups of women (Bui, & Baruch, 2010; Wingood & DiClemente, 2000).

In the sexual division of power, men hold the locus of power, and women are regarded as weak and submissive, with resources controlled on national, organizational, familial, and interpersonal levels (Wingood & DiClemente, 2000; Bui, & Baruch, 2010). Similarly, Wingood and DiClemente (2000) found the harmful effects of HIV likelihood to be highly correlated with sexual power disparity, resulting in little or no perceived control of condom use by women. The structure defines gender roles and may aggravate gender inequality in a heterosexual relationship. Female sexual attachments to men determine appropriate sexual behaviour and set standards for prohibitions, incitements, beliefs, standards, and expectations (Bui, & Baruch, 2010; Wingood, & DiClemente, 2000).

In this study, could it be said that female adolescents with visual impairment have no say in their choice or decision about sexual health? If female adolescents with visual impairment are vulnerable because of their condition or impairment, could the sexual power of division have any link in this study? Sexual inequality; could it be the case that female adolescents do not have the power to decide their sexual preference? All these issues are of

interest to the researcher since the theory could serve as a basis to advance the argument.

McLeroy's Social Ecological Model of Health Behaviours

Contrary to most theories of health behaviour, with a predominant emphasis on attitudinal factors at the intrapersonal level, the social-ecological paradigm (McLeroy, Bibeau, Steckler, & Glanz, 1988) assumes that human behaviour is fashioned based on multi-factorial contact, including cultural, group, and policy levels.

The social-ecological model recognises that health experiences are influenced by factors within and beyond an individual. The social-ecological model originated from contributions from several leading researchers; Bronfenbrenner's Ecological Systems Theory (1979), the Ecological Model of Health Behaviours by McLeroy (1988), and the Social Ecological Model of Health Promotion by Stokols, Grzywacz, McMahan & Phillips, (2003).

To this end, the social-ecological model will best suit this present study since a person's desire for health and for that matter, sexual health is determined by the interaction between the individual and external environmental influences. For instance, the individual's sources and availability of information about sexual health influence sexual health. One's knowledge and understanding of sexual health could be influenced by intrapersonal level factors, interpersonal level factors, institutional level factors, community-level factors, and policy level factors, and these factors constitute McLeroy's Ecological Model of health behaviours.

McLeroy et al. (1988) built on Bronfenbrenner's model as the framework for their social-ecological model (SEM) in which individuals are

embedded within and interact with larger social systems. In the SEM, behaviour is determined by multiple dimensions including intrapersonal factors, interpersonal processes, social networks, institutional factors, community factors, and public policy. Intrapersonal factors are characteristics of the individual, such as knowledge, attitudes, skills, self-efficacy, values, and expectations of the individual. Research has long suggested that individual attitudes, expectations, and beliefs are key predictors of individual behaviour (Ajzen & Fishbein, 1980; Bandura, 1977).

Interpersonal factors incorporate formal and informal social networks and social support systems, including significant others, such as colleagues and friends. These social relationships are also considered to have a substantial influence on individual behaviour. Institutional factors refer to social institutions and organizations with formal and informal rules and regulations for operations that affect the practice and views of individuals and, ultimately, support certain behaviours over others. These factors include the allocation of various economic and social resources, the transmission of social norms and values, and socialization into organizational culture.

Community factors include the groups to which individuals belong, the relationships among organizations within a defined area, and geographically or politically defined areas overseen by one or more power structures. The concept of community incorporates sources of social resources and social identity, which are known to influence norms and values, as well as individual beliefs and attitudes. Finally, public policy refers to local, state, and national laws and policies. These laws and policies are the mandates within which society functions and serve to raise awareness of key issues, shape

environments, and directly or indirectly affect behaviour. Sexual health is largely influenced by interpersonal and intrapersonal factors that emanate from the environment which could be family, friends, institutions, such as schools, churches, and others. These entities have the potential of affecting the sexual health of FAVI. The sociocultural norms surrounding sexual health of McLeroy's Social Ecological Model of Health Behaviours would be explored and established the underpinning role of the theory's role in this study.

Social Cognitive Theory

Social Cognitive Theory (SCT) is a psychological theory that was proposed by Albert Bandura in 1986. SCT explains human behaviour as a product of the dynamic interaction between personal, behavioural, and environmental factors (Bandura, 1986). The theory suggests that people learn by observing and modelling the behaviours of others and their resulting consequences. SCT emphasizes the role of cognitive processes such as attention, memory, and motivation in shaping human behaviour. According to SCT, individuals' beliefs, attitudes, and values, as well as their expectations of outcomes, influence their behaviour. Moreover, the theory posits that individuals can develop self-efficacy, or the belief in their ability to perform a specific behaviour, which is a crucial factor in determining their actions (Bandura, 1986). SCT is widely used in many fields, including education, health, and social psychology, to understand and predict a range of human behaviours. In the health domain, SCT has been used to explain the factors that influence health behaviours, such as adopting healthy lifestyles, seeking medical care, and adhering to medical regimens. In addition to the key elements mentioned earlier, there are other important dimensions of the Social

Cognitive Theory (SCT). The theory makes reference to reciprocal determinism which emphasizes that human behaviour is not only influenced by the environment, but individuals can also change their environment through their behaviour. The theory posits that behaviour, environment, and personal factors are interdependent and continually interact with each other. The theory emphasizes observational learning which suggests that individuals learn through observing the behaviours of others. This is often referred to as observational learning or modelling. Observational learning can have both positive and negative effects on behaviour. Self-regulation is another dimension of SCT that emphasises the role of self-regulation in behaviour change. Self-regulation involves setting goals, monitoring progress, and making adjustments as needed to achieve desired outcomes. Furthermore, the outcome expectations dimension of SCT posits that individuals' expectations of the outcomes of their behaviour influence their behaviour. Outcome expectations can be positive (e.g., a sense of accomplishment) or negative (e.g., fear of failure).

Social Cognitive Theory (SCT) is a theoretical framework that emphasizes the reciprocal interactions among personal, behavioural, and environmental factors that shape an individual's thoughts, feelings, and actions (Bandura, 1986). In the context of sexual health, SCT suggests that an individual's knowledge of sexual health risks, self-efficacy, and outcome expectations all play a role in determining their sexual health behaviours (Fisher & Fisher, 2000). Similarly, in the context of academic experience, SCT proposes that academic achievement is influenced by personal, behavioural, and environmental factors, including self-efficacy, learning

strategies, time management, social support, and feedback (Zimmerman, 2000). For example, an intervention designed to promote condom use among adolescents might incorporate SCT principles by addressing the individual's self-efficacy for negotiating condom use with their partner, providing information about the risks of unprotected sex, and modelling effective communication skills (DiClemente et al., 2008). Similarly, an intervention designed to improve academic performance might address the individual's self-efficacy for studying, provide information about effective study strategies, and provide opportunities for social support and feedback from teachers and peers (Zimmerman, 2000).

Health Belief Model

The Health Belief Model (HBM) is a theoretical framework developed to explain and predict health behaviours based on an individual's beliefs and perceptions about a particular health issue. The model was developed in the 1950s by Rosenstock and his colleagues and has been widely used in public health research to understand and influence health behaviours (Rosenstock, 1974). The HBM suggests that people's beliefs about the severity, susceptibility, benefits, and barriers associated with a health issue will influence their willingness to take action to prevent or treat the issue (Janz & Becker, 1984). According to the model, individuals are more likely to engage in a health behaviour if they believe that they are susceptible to the health issue, that the issue is serious, that the benefits of taking action outweigh the costs, and that there are few barriers to taking action. The HBM has been applied to a wide range of health issues, including cancer screening (Champion & Skinner, 2008), diabetes management (Inzucchi et al., 2012),

and HIV prevention (Fisher & Fisher, 2000). The model has been used to develop interventions aimed at changing health behaviours by targeting individuals' beliefs and perceptions about a particular health issue.

The HBM suggests that an individual's health behaviours are influenced by their perceived susceptibility to a health condition, the perceived severity of the condition, and the perceived benefits and barriers of taking preventive action (Rosenstock, 1974). In the context of sexual health and academic experience, the HBM suggests that students' beliefs about their susceptibility to sexual health issues, the severity of those issues, and the benefits and barriers to preventive action may influence their academic performance. For example, if a student believes that they are at high risk for contracting an STI, they may be more likely to take preventive action to protect their sexual health, which could improve their overall well-being and academic performance. Several studies have used the HBM to investigate the relationship between sexual health and academic experience. For instance, a study published article found that students who perceived a high risk of contracting an STI were more likely to report using condoms during sexual activity, which was associated with higher levels of academic engagement and performance (Downing-Matibag & Geisinger, 2009). Another study found that students who perceived a high level of social support for using condoms were more likely to report using condoms during sexual activity, which was associated with lower levels of STI and pregnancy risk and higher levels of academic engagement (Shtarkshall, Santelli & Hirsch, 2007). Overall, the HBM provides a framework for understanding how students' beliefs about their sexual health may influence their academic performance. By addressing

students' beliefs about their sexual health and providing education and resources to support preventive action, schools can promote healthy sexual behaviours and improve students' overall well-being and academic experience.

Conceptual Review

Concepts underlying this study are reviewed under the following sub-headings: Sexuality: Adolescent Sexual Health, Disability, Visual Impairment, Socio-cultural norms, academic experience:

Concept of sexuality

Sexuality is much more than sexual feelings or sexual intercourse. It is an important part of who a person is and what she or he will become. It includes all the feelings, thoughts, and behaviours of being female or male, being attractive, and being in love, as well as being in relationships that include sexual intimacy and physical sexual activity. Sexuality is both powerful and potentially disruptive, especially given its private and public nature. While liberal political discourses can marginalise sexuality as something essentially private, (Fischer, Seidman & Meeks, 2016) ideas suggest otherwise.

Sexuality is a central aspect of being human throughout life and encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships (Macleod & McCabe, 2020; WHO, 2004). While sexuality can include all these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of

biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors (WHO, 2004).

Concept of Disability

Disability is an umbrella term for impairments, activity, limitations, and participation restrictions. It denotes the negative aspects of the interaction between an individual (with a health condition) and the individual's contextual factors (environmental and personal factors) (WHO, 2007).

Worldwide, data about disability issues are difficult to identify since many surveys have not been conducted in the field regarding the prevalence rate. This problem is evident in Africa and most developing countries and for that matter Ghana. Myths and beliefs are one of the reasons associated with disabilities. It affects families with disabled persons to the extent that they hide their disabled relatives to prevent them from participating in most surveys being conducted (Opoku et al., 2018). This, therefore, has a negative effect on the result of surveys about families and disabilities. It generates different prevalence rates of disability on surveys conducted by individual institutions and makes it not reliable. For instance, it is captured in the 2002 Country Profile on Disability in the Federal Democratic Republic of Ethiopia that, disabled persons are associated with spiritual evil by some people and are being prevented from going to the public (Badu, 2014). This leads to inaccurate statistics and information on disability in the country.

To put it another way, Mont (2007) was also of the view that, due to variation in the definition of disability as a result of differences in nature and severity across places and time, it is difficult to get a prevalence rate that is internationally comparable and understandable. The measurement of

disability, therefore, differs and depends greatly on the reason for the measurement. He further argues that a single prevalence rate of disability can be seriously problematic and that emphasis should be placed on interval prevalence rate, that is, two prevalence rates with one being moderate threshold and the other more severe threshold on functional limitation.

Despite Monts' explanation, there are prevalent rates from UN agencies that are highly welcome. Globally, more than one billion people live with some form of disability (WHO, 2016). This represents 15% of the world's population. The prevalence rate is higher in low-income countries than in developed countries (WHO, 2016). It is also higher in females than males. People who have significant difficulties in functioning fall between 2% to 4% representing 110 to 190 million respectively (Badu, 2014). Factors such as aging, increases in chronic diseases, natural disasters, road traffic accidents, conflicts, and others continuously increase the prevalence rate of disability around the globe (WHO, 2013). In every developing country, the prevalence rate of disability is estimated at 10% to 15% of that country's population (WHO, 2013).

However, in Yemen, the rate has been estimated differently by different surveys ranging from 0.4% to 12% of the total population (Grut & Ingstad, 2006). The 2004 Yemen population census estimated the prevalence rate at 1.9% representing 380,000 of the country's population. Other estimates from Disability Fund indicate that every year there are about 15,000 new incidents of permanent impairment as a result of traffic accidents in Yemen (Grut & Ingstad, 2006). Comparatively, International Labour Organization (ILO) found that over 9% of Tanzania's population lives with some form of

disability (McNally & Mannan, 2013). Another study on family perceptions of intellectual disability conducted in Dares Salaam revealed that the rate of disability in Tanzania in 2008 stood at an estimated 2.4 million representing 8% of the population (Aldersey, 2012). This explains why the prevalence rate of disability in most developing countries is not reliable since it differs from organisation to organisation.

Using the WHO estimate of disabled people in developing countries to be 10% to 15%, the disabled population in Ghana is between 2.4 million to 3.6 million. This is based on the 2010 population and housing census which gives the population of the country as 24.6 million. However, the 2010 population census found the prevalence rate of disability in the country at 3% of the entire population which represents 737,743. According to this population and housing census, females with disabilities are more than males. The number of males with disabilities is 350,096 people and females with disabilities are 387,647 people. There are also regional disparities in the prevalence rate of disability in Ghana. The Ashanti region has the highest prevalence rate of disability while Upper West has the lowest number of people living with some form of disability. The disabled population in the Ashanti region is given as 124,501 people which represented 2.6% of the total Ashanti region population of 4,780,380 people (The Ghana Statistical Service [GSS], 2012).

This rate of disability given by GSS both at the national and regional levels is relatively arguable as it falls below the estimated rate of 10% to 15% in developing countries captured by the WHO. This has raised concern among most stakeholders in the field of disability in Ghana regarding this prevalence rate since it is not reliable and cannot be used to formulate and design

programmes for PWDs in the country (Badu, 2014). Comparing the prevalence rate to other parts of Africa, it can be deduced that almost all the rates captured under the national census in most African countries are comparatively lower than those conducted by United Nations (UN) agencies such as the International Labour Organisation and the WHO (Badu, 2014). Also, the census however did not estimate the prevalence rate of disability by the metropolis.

Concept of Visual Impairment

Goodley (2001), defines impairment as the lacking of a part or all of a limb or having a defective limb organism of the body. For this study, impairment refers to the students who struggle to fully participate in a classroom because of their loss of vision. Visual impairment has been differently defined from one study to another (Scheiman, Scheiman & Whittaker, 2007). World Health Organization (WHO) defines blindness as the inability to see. According to Green, Smith, and Roberts (2005), blindness is a situation when a child cannot use vision for learning yet she or she can respond to light and darkness and can have some visual imagery in some instances.

Otibu (2014) cited Ocloo (2011) that visual impairment includes the totally blind, low vision, and the partially sighted. He further defines the blind as having a visual acuity of 20/200 or less in the better eye even with correction". The partially sighted as having a "visual acuity of 20/70 and those with low vision as having a visual acuity between these two points 20/30 (P. 30). He further opined that some are totally blind, others can perceive light from the dark, while others have a minute residual vision which can help their

movement. Blind people cannot read printed material, but those with low vision will need low vision aids. He also stated that partially sighted include individuals who require gigantic print. The majority of visually challenged people are afraid of light while some partially sighted or low vision people may require a powerful light before they can see properly.

Bozeman (2007), describes people with low vision as partially sighted people. It is one of the two categories of visual impairment. The degree of vision loss may differ considerably, which indicates that each student with low vision or blindness needs individual modifications to study. Bozeman (2007), continued that most of the students with visual problems have "low vision" meaning they are print users but may need distinct equipment. Blindness refers to the total loss of eyesight as opposed to the degree of visual impairment. Blind persons might experience difficulty in moving around and knowing where things are, doing some activities of daily living, writing, reading, and following visual signs or commands.

Ashton (2000), described a person with low vision as an individual who has limitations in distance vision but can see objects and materials within a few meters away. Ashton (2000), also maintained that a person with low vision is one whose visual condition is such that it interferes with efficient learning but who is still able to use print as his/he chief medium of learning. People with visual impairment normally need some assistive devices and services which consider their level of needs. Some people require specialized eyeglasses or large print and other equipment to assist them to compensate for their low vision. Low vision constitutes a major drawback of visual ability as a result of pre-natal, peri-natal, and post-natal conditions.

In Ghana, most children with low vision attend regular schools without any requisite support. According to Ocloo et al. (2002), many children with low vision will find themselves in regular classrooms because it provides them with education in the least restricted environment. They continued that a teacher in Ghana or elsewhere need to bear in mind that children with low vision have challenges in learning fast and they usually have problem with effective communication and interacting with the environment.

According to the international standard of classification, as proposed by WHO, Low vision is when the measurement is worse than 20/60 in the better eye with the best correction (Scheiman et al., 2007). This means that from 20 feet away you can only see letters that would normally be visible at 60 feet. Low vision is the loss of eyesight that makes the accomplishment of visual tasks difficult. However, with aid, children with low vision can use their visual senses for learning (Green et al., 2005). Further to this, Giridher, Dandona, Prasad, Kovai, and Dandona (2002), research has shown that most people have a special fear of visual impairment. It is the third most feared condition, with only cancer and AIDS outranking it.

One of the reasons people may be so frightened of becoming blind is that our eyes seem as vulnerable as they seem dangerously exposed. Another reason people fear the loss of vision is that the sense of sight is linked so closely with the traditional concept of beauty. Great pleasure is derived from our sight and as people; our feelings about others are often based largely on physical appearances that we visually perceive. People's apprehension about visual impairment can be attributed to our lack of experience in interacting with individuals with visual impairment. It is not until we talk to them or read

about their appreciation for sound, smells, and touch that it is realized that sight is not the only sense that enables us to enjoy beauty or interact socially with other people.

Mercer, Mercer, and Pullen (2010) observed that, like anyone with a disability, the person who is visually impaired wants to be treated like anyone else. Most people who are visually impaired do not seek pity or unnecessary help; in fact, they can be fiercely protective of their independence. Hunt and Marshall (2002) explain that visual impairment is an umbrella term that includes all levels of vision loss, from total blindness to uncorrectable visual limitation. They state that several terms are used interchangeably to describe individuals whose visions are impaired, including visually impaired, visually handicapped, visually disabled, blind, partially sighted, and low vision. Finkelstein (1989) cited by Koeswiryono (2012) also asserts that learners with a visual impairment include those learners whose sights are limited in any way to the extent that special services are required. Many of these persons have sight that is useful for some purposes. Others are blind or have a profound visual impairment that prohibits the use of vision as an educational tool.

A person is considered legally blind when his or her visual acuity or sharpness of vision measures 20/200 or worse in the better eye with correction, or when he or she has a visual field not greater than 20 degrees (Manitsa & Doikou, 2022). This implies that one needs to be at least 20 feet away to see something that a person with normal vision can see from 200 feet away. The authors, however, caution that if vision can be corrected through glass or contact lenses to 20/200 or better, the person is not considered legally blind. They again explained that the term legal blindness describes visual

impairments that qualify a person for a variety of legal and social services. This definition is used to determine eligibility for governmental funding, tax deduction, rehabilitation, and other services. Hunt and Marshal (2002), are however, of the view that though the legal definition is widely used, it is somewhat misleading since many legally blind individuals have a good deal of useful vision.

Educational definitions are generally based on the way a student uses his or her vision in an educational setting- individuals who use braille may be considered blind, and those who read large print may be designated "low vision" (Augusto, 2009). Augusto contends that students who are totally blind are able only to distinguish the presence or absence of light; they may learn best through tactile or auditory senses. Individuals with low vision on the other hand can see objects at near distances, sometimes under modified conditions, or may have limited use of vision under average circumstances.

More and more, levels of visual impairment are being defined in educational terms. According to Kirk, Gallagher, Anastasiow, and Coleman (2006), educational classifications are described as moderate, severe, and profound. These classifications are not based on a test of visual acuity but on the special educational adaptations that are necessary to help these individuals. A moderate visual disability can be almost entirely corrected with the help of visual aids, either in the regular classroom or a resource room. A severe visual disability is helped only somewhat with visual aids; still, the individual can use vision as a channel for learning. This classification is equivalent to the definition of an individual with low vision. An individual with a profound visual disability cannot use vision as an educational tool. For this individual,

touch and hearing are the predominant learning channels. This classification is at the level of legal blindness.

Salend (1990), also identifies three types of visually impaired individuals; the blind, the low-vision and the visually limited. Individuals who are blind have no vision or limited light perceptions. A person who is blind is totally without sight or has so little vision that he/she learns primarily through the non-visual senses. Most individuals who are blind use their sense of touch to read braille. Abosi and Ozoji (1985) cited by Munyi (2012) contend that a person is said to be blind if he/she cannot read and write print after all optical corrective measures have been taken. He/ She consequently uses braille as a medium of reading and writing.

Myopia; are individuals who have low vision and can see objects that are close by but have difficulty seeing things or objects at a distance. According to Huebner (2000), an individual with low vision has some amount of vision left and can learn through the visual channel. The author defines such individuals as those who have limitations in distance vision but can see objects and materials in the near environment within a few centimeters or at most a meter away. Individuals who are visually limited need aids or a special lighting system to see under normal conditions.

Visual impairments have a varied effect on learners' characteristics. Leonhardt (1990), stresses that the mannerisms of visually impaired learners include stereotypic behaviours, repetitive behaviours with no apparent effect on the environment and "blindism". Behaviours are apparent in learners who are visually impaired and cover a broad range of verbal and motor behaviour. Leonhardt explains that stereotypic behaviours occur more frequently in

conditions under which the visually impaired have little or no control, in demanding situations, like situations that refer to the visual world, or in situations of loneliness or isolation.

Classification system of visual impairment

Barrage (1986) proposes the following educationally relevant classification of visual impairment. Profound: Most gross visual tasks are very difficult; vision is not used for detail tasks. Severe: Visual tasks demand considerable time and energy; performance is less accurate than that of learners with normal vision even with visual aids and other modifications. Moderate: Tasks performed with the use of aids and lighting; performance comparable to learners with normal vision.

Adolescent Sexual Health

Adolescent sexual health refers to the physical, emotional, and social well-being of young people in relation to their sexuality (Breuner et al., 2016; Hogben, Harper, Habel, Brookmeyer, & Friedman, 2017). It includes a range of topics such as puberty, reproductive health, relationships, contraception, sexually transmitted infections (STIs), and sexual consent. Adolescents experience significant physical and emotional changes as they go through puberty, which includes the development of sexual characteristics and the onset of sexual desires. Young people need to have accurate information about sexual health and access to sexual health services, so they can make informed decisions and protect their health. Good sexual health also involves developing healthy relationships, practising communication and consent, and understanding personal boundaries. Adolescents who have positive sexual experiences and feel comfortable and confident in their sexual lives are more

likely to have healthy relationships and lead fulfilling lives. There are several issues surrounding the concept of adolescent sexual health. Adolescence is a time of significant physical changes, including the development of secondary sexual characteristics such as breast development in females and facial hair growth in males (Marcell, Wibbelsman, & Seigel, 2011). It is important for adolescents to understand the changes that are happening in their bodies and to feel comfortable with their bodies. Adolescents need to be aware of how their bodies work, including how to prevent unwanted pregnancies and how to access contraception if they choose to be sexually active. This includes information on birth control methods such as condoms, pills, and intrauterine devices (IUDs).

Adolescents are at risk of contracting sexually transmitted infections (STIs) if they are sexually active. They need to understand how STIs are transmitted, how to prevent them, and how to get tested and treated if necessary. Adolescents need to learn how to build and maintain healthy relationships, including how to communicate effectively with partners, how to set boundaries, and how to recognize signs of unhealthy relationships. Adolescents need to understand the importance of sexual consent, including how to communicate their boundaries and how to respect the boundaries of others. Adolescents need to be aware of the diversity of gender identities and sexual orientations, and how to support and respect people who identify differently from themselves. Adolescent sexual health is about promoting healthy development, informed decision-making, and respectful relationships. It is important for young people to have access to accurate information, non-

judgmental support, and confidential healthcare services so they can make informed choices about their sexual health.

Adolescents and sexuality

Adolescence is a period of intense physical, psychological, intellectual, emotional, and social change. When compared to previous generations, today's adolescents have more liberal views on sexuality, as well as a greater variety of different types of sexual relationships and modes of expression. Adolescents also have a broad understanding of sexuality (Thorne, Hegarty & Hepper, 2021). The love ideal and heteronormativity comprise the romantic love complex. Many young people associate sexual acts with love (Thorne et al., 2021). The link between sex and love was stronger among younger respondents (under 20 years old) than among older respondents (Tikkanen, Abelsson, & Forsberg, 2011). However, attitudes are changing, and an increasing number of adolescents believe that having sex outside of a stable relationship is acceptable, and they have more liberal attitudes toward casual sexual contact (Tikkanen et al., 2011).

Sexuality is a complex and multifaceted aspect of human experience that can vary widely from person to person. Sexual attraction can be directed towards people of the same gender, the opposite gender, both genders, or no gender at all. Sexual behaviour can take many forms, including sexual activity with a partner or partners, masturbation, and other forms of sexual expression. Sexual identity is a person's sense of self in relation to their sexuality and can include identifying as heterosexual, homosexual, bisexual, pansexual, asexual, or other identities (Hastings, Bobb,Wolfe, Amaro Jimenez, & Amand, 2021).

Sexuality is influenced by a wide range of factors, including biology, psychology, culture, and personal experiences (Garcia, Reiber, Massey & Merriwether, 2012; Garnets, 2002). It can be a source of pleasure and fulfillment, but it can also be a source of confusion, shame, and stigma. Individuals need to have access to accurate information, supportive communities, and non-judgmental healthcare services to develop a healthy and positive relationship with their sexuality.

Persons with disabilities have the same range of sexual desires and needs as people without disabilities, but they may face unique challenges and barriers to expressing their sexuality (Krantz, Tolan, Pontarelli & Cahill, 2016). Some common issues that persons with disabilities may face when it comes to sexuality include stereotypes and stigma; persons with disabilities may face negative stereotypes and societal stigma that can make it harder for them to express their sexuality and form intimate relationships. Persons with disabilities may not receive adequate education or support around sexual health and relationships (Burton, Rawstorne, Watchirs-Smith, Nathan & Carter, 2023), which can lead to confusion, misunderstandings, and unsafe sexual practices. Persons with physical disabilities may face physical barriers to sexual expression, such as mobility issues, chronic pain, or difficulty with self-care. Persons with disabilities may have communication difficulties that can make it harder to express their sexual desires or obtain consent from their partners. Persons with disabilities may face barriers to accessing sexual health services, including a lack of accessibility in healthcare facilities and a lack of trained healthcare providers who understand their unique needs. Persons with disabilities need to have access to supportive communities, inclusive sex

education, and healthcare services that are responsive to their needs. This can help promote healthy sexual expression, prevent sexual violence and abuse, and ensure that persons with disabilities have the same rights and opportunities to experience intimacy and pleasure as everyone else.

Sexual abuse among the visually impaired

Sexual abuse is defined as any action that forces or coerces a person to do something sexual that they do not want to do (Cook, Sharma, & Yeomans, 2014; WHO, 2013). It can also refer to behaviour that interferes with a person's ability to control their sexual activity or the circumstances under which sexual activity takes place, such as oral sex, rape, or restricting access to birth control and condoms. Some examples of sexual assault and abuse are: unwanted kissing or touching, unwanted rough or violent sexual activity, rape or attempted rape, refusing to use condoms or limiting someone's access to birth control, preventing someone from protecting themselves from sexually transmitted infections (STIs), sexual contact with someone who is extremely drunk, drugged, unconscious, or otherwise unable to give clear and informed consent. Violence against women has gained prominence in recent years as a significant public health issue with serious consequences for women's health and society. This form of violence or abuse occurs in all cultures and affects women of all ages and all socioeconomic and educational backgrounds.

According to global research, persons with disabilities are likely to be more vulnerable to sexual abuse than the general population (Jones, Jemmott Maharaj & Breo, 2014). There is evidence that this is a major issue in Africa. In a study of four African countries, 956 young persons with disabilities said they had experienced sexual violence. Each had experienced 2.6 types of

sexual violence on average (Jones et al., 2014). Many victims are subjected to multiple violations, and many perpetrators are subjected to multiple violations (Boersma, 2013).

Brunes and Heir (2018), assessed sexual assaults in individuals with visual impairment. The study showed that the prevalence of sexual assaults (rape, attempted rape, and forced into sexual acts) in the visually impaired population was 17.4% among women and 2.4% among men. For women, the visually impaired population had higher rates of sexual assaults across age strata than the general population. For men, no significant differences were found. In the population of people with visual impairment, the risk of sexual assault was greater for those having other impairments in addition to vision loss. Individuals with visual impairment who experienced sexual assaults had lower levels of self-efficacy and life satisfaction than others.

Sexual abuse can have long-term physical, psychological, and social consequences for victims, whether they are children or adults, male or female. In the immediate aftermath, a victim is likely to experience pain from injuries such as genital tissue tearing or pelvic dislocation. It is widely assumed that victims will suffer long-term physical and mental consequences such as pregnancy, sexually transmitted diseases such as HIV, genitourinary dysfunction, and depression. However, there is a lack of high-quality, rigorous evidence for this, and more research is required (WHO, 2013).

According to Groce (2005), children who have experienced sexual abuse have a significantly increased risk of developing mental health problems throughout their lives. Apart from mental illness, victims may experience distress, disrespect, disgust, and powerlessness (Phasha & Nyokangi, 2012).

Finally, victims can face long-term social consequences as a result of moral judgments made about them in their communities. A rape victim may never be considered suitable for marriage, and women who have been raped may be blamed not only for the attack but also for the moral failings of the community (Maxwell, Belser, & David, 2007), or they may simply be rejected by the community.

Academic experience

The concept of academic experience is multifaceted and encompasses many different aspects of formal education. It is an important part of a person's intellectual and personal growth and can have a significant impact on their future career and life opportunities. The concept of academic experience generally refers to the set of knowledge, skills, and experiences that a person gains through their formal education in an academic setting (Pipere & Iliško, 2018). This can include classroom experiences, such as teaching, discussions, and assignments, as well as extracurricular activities, research, internships, and other opportunities that enhance a student's learning. Academic experience also encompasses the social and cultural aspects of education, including interactions with peers, professors, and staff, as well as exposure to diverse perspectives and ideas. Additionally, the academic experience can include the development of critical thinking skills, the ability to conduct research and analyze data, and the application of knowledge to real-world situations.

The concept of academic experience here, explains all activities that pertain to a student's learning within an academic environment. That is all experiences a student goes through in school. Any form of interaction in which learning takes place within the school setting could be deemed as an

academic experience. This may include student learning, student interaction with the academic environment, student relationship with peers and teachers, challenges that students are confronted with, and others.

Flow chart

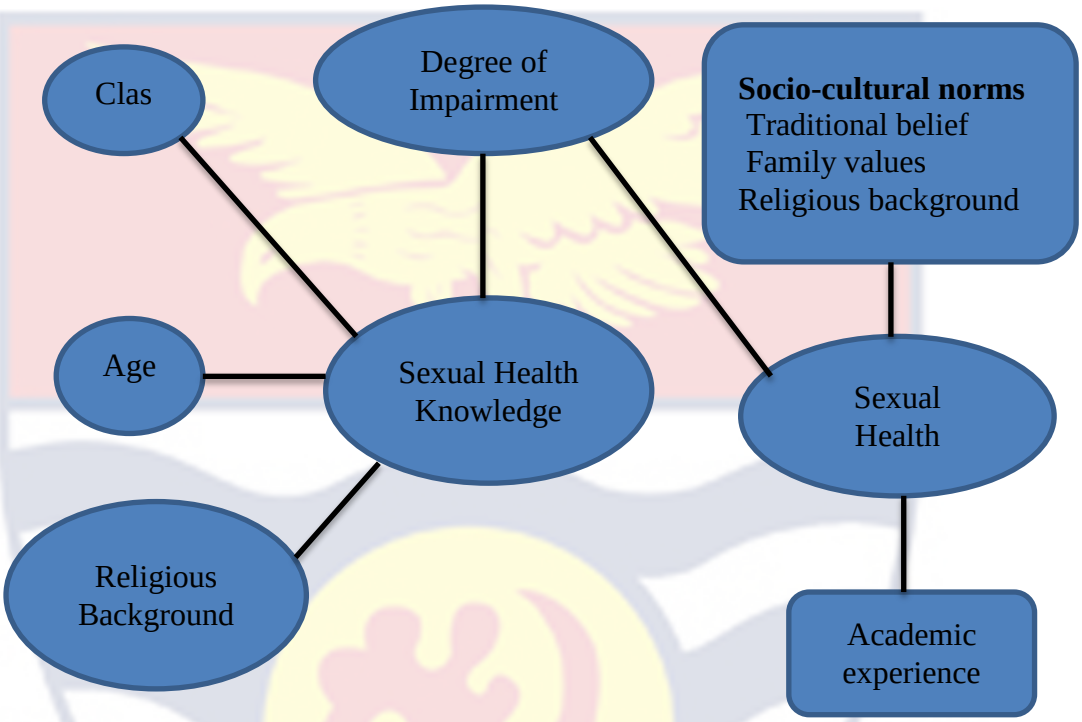


Figure 1: The flow chart explains the relationship between the variables of interest.

That is female adolescents with visual impairment's sexual health knowledge, and how their demographic characteristics influence it.

Author's construct (2022)

The flow chart is an illustrative model of how sexual health influence academic experiences of female adolescents with visual impairment. The flow chart posits that demographic characteristics of FAVI (Class, age, religious background, and degree of impairment) for instance influence sexual health knowledge. Several studies (Baruwa & Amoateng, 2019; Burke, Nic Gabhainn, & Kelly, 2018) have shown that demographic characteristics as have significant influence on adolescents' sexual health. For instance, the

degree of impairment as demographic characteristics influences sexual health knowledge and sexual health (Berwal, Punia, & Dahiya, 2017) was ascertained in the framework. Socio-cultural norms such as family values, traditional beliefs, and religious background influenced sexual health and intend affect FAVI academic experience. To what extent will these demographic characteristics influence sexual health knowledge?

Empirical Review

The empirical review is concerned primarily with the work done by others that are related to this study, or have a bearing on it. It compares the findings that would emerge from this study with earlier findings from previous studies. In addition, the researcher reviewed the works of other previous researchers based on the purpose of the study, methodology, findings, conclusions, and recommendations as well as the summary.

Knowledge level of female adolescents with visual impairment in sexual health

Many pieces of research have been conducted to identify the knowledge level of female adolescents with visual impairment on sexual health and they all revealed some interesting findings. For instance, Upashe, Tekelab, and Mekonnen (2015), assessed knowledge and practice of menstrual hygiene among high school girls in Western Ethiopia. The objective of the study was to assess the knowledge and practice of menstrual hygiene among high school girls in Nekemte town, Oromia region, Western Ethiopia. A cross-sectional study design was employed and a multistage sampling technique was used to select eight hundred and twenty-eight (828) female high school students. Bivariate and multivariate logistic regression analysis was done at

95% confidence interval on SPSS for Windows. Results from the study indicated that 504 (60.9 %) and 330 (39.9 %) respondents had good knowledge and practice of menstrual hygiene respectively. They concluded and recommended that the findings showed that the knowledge and practice of menstrual hygiene are low. Awareness regarding the need for information about good menstrual practices is very important. So, health education programmes should be set up to create awareness and practice good menstrual hygiene.

Furthermore, Kassa, Luck, Bekele, and Riedel-Heller (2016) conducted a study on the topic, of sexual and reproductive health of young people with disability in Ethiopia: a study on knowledge, attitude, and practice. It was a cross-sectional study and the aim was to assess the knowledge, attitude, and practice (KAP) among young people with disability (YPWD) who were a mixture of both males and females in Addis Ababa, Ethiopia. Data were collected using a structured questionnaire that elicited information on socio-demographic information, as well as information on knowledge, attitude, and patience (KAP) regarding sexual reproductive health (SRH) in a sample of 426 young people with disability in Addis Ababa, Ethiopia. Results from their study indicated that only 64.6 % of YPWD were aware of SRH services. Radio and TV were mentioned as the main sources of information by 62.2 % of the participants. 77.9 % had never had a discussion about SRH topics with their parents. Even though 96.7 % of the respondents had heard about HIV, 88 % had poor knowledge about ways of preventing HIV. Perception of the risk of getting infected with HIV was found to be generally low in YPWD; only 21.6 % believed that they were at risk of

acquiring HIV. They concluded that in general there was a lack of comprehensive knowledge, appropriate practice, and favorable attitude of YWPD regarding different SRH-related issues and thus recommended there is the need for strategies and programmes to be conducted in other to raise awareness on SRH-related issues in other to help YWPD to develop appropriate skills and attitudes needed for healthy reproductive health.

Again, Rowe and Wright (2017), studied sexual knowledge in adolescents with intellectual disabilities (ID). Their study aimed at reviewing factors that influence the effectiveness of sex education on sexual knowledge among adolescents with ID. They concluded that sexuality education for adolescents with ID has been inconsistently effective, and only insofar as providing rudimentary knowledge on sexual anatomy, reproduction, and puberty. They argued that sex education is unsuccessful in providing sexual knowledge to adolescents with ID due to the use of inappropriate teaching modalities, and a lack of sex education outside of school programs. Based on their conclusion, they recommended that further action ought to be taken to promote social justice through the design, content, and delivery of sexuality education for adolescents with ID to deliver socially inclusive outcomes on both individual and systematic levels.

Treacy, Taylor, and Abernathy (2018), studied sexual health education for individuals with disabilities. The purpose of the literature review was to examine sexual health education for individuals with disabilities focusing on risks to persons with disabilities, current barriers to education, and available resources. The various articles reviewed in the study all point to the fact that the knowledge level of a female adolescent with disabilities such as visual

impairment and a host of others is minimal and nil in some instances. Thus, it will be more prudent if programmes and courses which focus on these topics are organized and integrated into the curriculum activities of schools in other to raise awareness of sexual health in these individuals.

Finally, Cheak-Zamora, Teti, Maurer-Batjer, O'Connor and Randolph (2019) also conducted a study on the topic, of sexual and relationship interest, knowledge, and experiences among adolescents and young adults with an autism spectrum disorder. The study compared the sex and relationship experiences of 27 adolescents and young adults with autism spectrum disorder (ASD) (males=20 and female=7). Adolescents and young adults participated in semi-structured interviews to explore the topic. Theme analysis uncovered four thematic categories that were, interest in relationships, ideal partners, realities of adolescent and young adult relationships, and advice about sex and relationships. They found that, although many adolescents and young adults expressed wanting a relationship, few reported having partners. Among those that did, their actual relationships rarely met ideals. Most adolescents and young adults talked with parents and friends but not healthcare providers about sex and relationships. All adolescents and young adults described the need for additional education. Adolescents and young adults expressed the need for education that covers basic safety and sexual health topics as well as social/relationship skills building and courtship modeling.

Nsubuga, Sekandi, Sempeera, and Makumbi (2015), researched contraceptive use, knowledge, attitude, perceptions, and sexual behaviour among female university students in Uganda. The study was conducted because, there is a paucity of data on knowledge, attitudes, perceptions, and

practices towards modern contraceptives and, sexual and reproductive health, especially among young female university students. The cross-sectional study design was employed in their study. Data were collected through interviews and the results were coded. The prevalence of contraceptive use was determined as the number of users divided by all female participants. Prevalence ratios (PRs) with their corresponding 95% confidence intervals were used as measures of association between contraceptive use and associated factors. All analyses were conducted with Stata version 13. Results from the study showed that out of the 1,008 females who comprised able and disabled students (that is visual impairment, hearing impairment, etc.) who responded to the survey, knowledge of any contraceptives was almost universal (99.6 %) but only 22.1 % knew about female condoms. Perceived acceptability of contraceptive use at the university (93 %) or being beneficial to male partners too (97.8 %) was high. Nearly 70 % had ever engaged in sexual intercourse and 62.1 % reported sexual intercourse in the past 12 months. Further results also revealed that, in terms of knowledge levels, those who were 21 years and above possess more knowledge than those who were 19 years of age and below.

Again, Chen et al. (2016) did a study on the topic, a comparison of sexual knowledge, attitude, and behaviour between female Chinese college students from urban areas and rural areas. The study aimed to examine the difference and the influencing factors between students from rural areas and urban areas. A cross-sectional study using anonymous questionnaires was conducted among 3193 female students with and without disabilities from six universities located in Beijing, Shanghai, and Guangzhou, China. Results from

the study indicated that, out of the 2669 respondents, 20.6% and 20.9% of the students from urban and rural areas, respectively, reported being sexually experienced. Notwithstanding, the proportion of students who received safe-sex education before entering university from rural areas (22.4%) was lower ($P < 0.0001$) than the proportion of students from urban areas (41.8%). They also revealed that students with visual impairment that are older (that is, fifteen and above) are more knowledgeable than those below fifteen years.

In addition, Rahimi-Naghani et al. (2016) conducted a study on sexual and reproductive health knowledge among men and women aged 15 to 49 years in metropolitan Tehran. The study assessed sexual and reproductive health knowledge among men and women aged 15 to 49 years in Tehran. A total of 755 men and women aged 15 to 49 years were recruited using multistage, random cluster sampling. The sample was randomly selected and thus included individuals who were able and not able. Data was collected using an illustrative anonymous questionnaire endorsed by the World Health Organisation. Bivariate and multivariate analyses were performed. Results indicated that men and women were moderately knowledgeable about sexual and reproductive health (mean score of SRH knowledge= 39, range: 26 to 52); however, myths and misperceptions prevailed in different aspects of SRH. Also, multivariate analysis showed that being female (coefficient = 0.139, $p < 0.001$) and being married (coefficient = 0.180, $p < 0.001$) were significant predictors of better SRH knowledge while being young (age group 15 to 24) was a significant determinant of poor SRH knowledge (coefficient = −0.161, $p < 0.001$) whiles it also states succinctly that, older adolescents were more knowledgeable than younger ones whether they have disabilities (which

includes visual impairment) or not and hence concluded that, specific comprehensive education is recommended for men, the unmarried and the younger generation in Iran.

In their cross-sectional survey that focused on relationships between sexual knowledge, sexual attitudes, and reproductive health behaviour among female university students, Kim, Park, and Lee, (2018) sampled 407 female undergraduate students from four universities. They completed a series of self-report questionnaires consisting of sexual knowledge, sexual attitudes, and reproductive health behaviour. Results showed that reproductive health behaviour was significantly influenced by sexual knowledge of which younger adolescents possess less as compared to older adolescents (β = .67) and sexual attitudes (β = .20). Structural equation modeling indicated that sexual knowledge, directly and indirectly, affected reproductive health behaviour with sexual attitudes acting as a mediator and thus concluded that, the findings indicated that it is necessary to consider sexual attitudes as well as sexual

Morales et al., (2018) researched sexual risk among Colombian adolescents: knowledge, attitudes, normative beliefs, perceived control, intention, and sexual behaviour. The purpose of the study was to examine sexual behaviour and its precursors using the theory of planned behaviour (TPB) and considering gender-based differences. One thousand and one hundred adolescents aged between 14 and 19 years old from Bogotá and Barranquilla, two of the cities with the highest adolescent birth rates among adolescents in Colombia. All analyses were conducted using SPSS v25. Results depicted that, there's a medium-low level of knowledge about sexual health in adolescents. And their results on the knowledge are on par with the

above-reviewed articles and hence concluded that there is a need of designing and implementing protocolized sexual health promotion programmes in schools to reduce sexual risk behaviours in Colombian adolescents.

Evcili and Golbasi (2017), did a study on the topic, of sexual myths, and sexual health knowledge levels of Turkish university students. The research was descriptive in nature and the sample consisted of 1,379 students. Data were collected using the Personal Information Form, Sexual Myths Scale (SMS), and Sexual Health Knowledge Test (SHKT). The results showed that the SMS mean score of the students was 82.21 ± 17.37. SHKT mean score of the students was 19.94 ± 6.16. The students living in urban areas had a lower SMS mean score and a higher SHKT mean score than the students living in the rural areas which tells you that, students in the urban areas with disabilities and are highly educated possess a high level of knowledge than those in the rural area and are not educated or have not attained any higher education. They recommended that, school-based education programmes should be extended and that the peer education model should be integrated into the existing education programmes to reduce the number of sexual myths among young people at risk and to increase their sexual health information.

Another study by Li et al., (2017) on the relationships between school-based sexuality education, sexual knowledge, and sexual behaviours-a study of 18,000 Chinese college students also revealed some interesting results. The study aimed to measure the knowledge level of sexual and reproductive health, and how such knowledge is associated with the sexual behaviours and reproductive health outcomes of the 18,000 students. An Internet-based questionnaire survey was used to elicit the needed information from 130

colleges that were selected from eastern, central, and western parts of China with a good balance of geographic distributions. Multivariate linear regression and logistic regression were applied to explore the relationship between students' SRH knowledge, sexual behaviours, and reproductive health outcomes, such as sexual intercourse (penetrative sex by vaginal or anal), unprotected sex, pregnancy, and abortion. Results revealed that a sample of 17,966 Chinese college students with a mean age of 20.2, 60.4% female eventually entered the analysis. Only 55.6% of the respondents self-reported having received sexuality education before, and they scored significantly higher (2.33/4.00) in the SRH knowledge quiz than those who had not (1.75/4.00).

Treacy, Taylor, and Abernathy (2018), did a literature review on sexual health education for individuals with disabilities. The purpose of the literature review was to examine sexual health education for individuals with disabilities; focusing on risks to persons with disabilities, current barriers to education, and available resources. Based on their review, it was found that there were differences in the knowledge level of adolescents who are disabled, being it hearing and or visual impairment. The reason was that individuals with visual impairment tend to stay at the house due to fear of criticism and stigmatization, thus the little that gets the courage to enroll particularly in the higher levels of education possess more knowledge than those who do not, an adolescent or an adult.

Schmidt, Brown, and Darragh (2019), also did a scoping review of sexual health education interventions for adolescents and young adults with intellectual or developmental disabilities. The purpose of the scoping review

was to identify the extent and nature of sexual health education interventions among individuals with I/DD ages 15–24 years. Six studies were included in the review. They investigated sexual health interventions for individuals with autism spectrum disorder and mild I/DD, covered a wide range of topics (e.g. puberty, healthy relationships), included multiple learning activities (e.g. illustrations, activity-based learning), and measured behaviour and sexual health knowledge outcomes. On the aspect of knowledge difference, it was just in line with the reviewed literature which seems to draw the line in the knowledge difference and gap between educated individuals with visual impairment and those that are not well educated.

A study conducted by Obasi et al., (2019) on the sexual and reproductive health of adolescents in schools for persons with disabilities revealed some interesting findings. The study sought to access the SRH services among adolescents with disabilities in four Special Needs Schools in Ghana. The study adopted a cross-sectional study design with a quantitative approach to data collection. A structured and pretested questionnaire was used to collect data from adolescents with disabilities from selected schools in Ghana. Both descriptive and inferential statistics were performed using the chi-square test and multivariate logistic regression. Results from the study indicated that the majority (67.1%) of respondents had good knowledge of SRH. Factors that were significantly associated with knowledge level were age ($p=0.026$), religion ($p=0.034$), sources of information ($p<0.001$), and guardians ($p=0.049$). The results from above indicate that a difference in knowledge level will exist if some of the students have more information that

comes from their level of education, and thus, those with a high level of education will have more knowledge than others.

Kyilleh, Tabong, and Konlaan (2018), investigated adolescents' reproductive health knowledge, choices, and factors affecting reproductive health choices. This study explored adolescents' reproductive health knowledge and choices, the type of choices they make, and the factors that affect these choices. This qualitative study adopted a narrative approach to qualitative inquiry. Eight focus group discussions (N = 80) were conducted among both in-school and out-of-school adolescents aged 10–19 years. The discussions were stratified by sex and studentship. In addition, nine in-depth interviews were conducted with various stakeholders in reproductive health services and community opinion leaders. Both the focus group discussions and in-depth interviews were recorded, transcribed, and analysed using NVivo 11. Thematic analysis was employed in analysing data. The study found that knowledge of reproductive health choices was low among respondents with the majority of them relying on their peers for information on sexual and reproductive health. Having a sexual partner(s) and engaging in premarital sex were common and viewed as normal. Adolescents engaged in unprotected sexual practices as a way of testing their fertility, assurance of love, bait for marriage, and livelihood. Inserting herbs into the vagina, drinking concoctions and boiled pawpaw leaves were identified as local methods employed by adolescents to induce abortion.

Finlay et al. (2020), worked on sexual and reproductive health knowledge among adolescents in eight sites across sub-Saharan Africa. The purpose of the study was to examine knowledge of menstruation, HIV, and

STIs other than HIV across eight sites in SSA to develop effective programmatic interventions enabling adolescents to achieve positive SRH as their transition to adulthood. The study used data from eight Health and Demographic Surveillance Sites across sub-Saharan Africa, from an adolescent-specific survey that included 7116 males and females aged 10–19 years old. They provided pooled and site-specific estimates from multiple analytic models examining how year-specific age, school attendance, and work correlate with knowledge of menstruation, HIV knowledge, and knowledge of sexually transmitted infections (STIs) other than HIV. Many adolescents lack knowledge of menstruation (37.3%, 95% CI 31.8, 43.1 do not know of menstruation) and STIs other than HIV (55.9%, 95% CI 50.4, 61.3 do not know of other STIs). In multivariate analysis, older age, being in school and wealth are significant positive correlates of STI knowledge. Older adolescent age, female sex, and being in school are significant positive correlates of knowledge of menstruation. Knowledge of HIV is high (89.7%, 95% CI 8.3, 12.7 know of HIV) and relatively similar across adolescent age, sex, wealth, school, and work attendance. The study concluded that knowledge of HIV is widespread among adolescents in these communities in sub-Saharan Africa, but knowledge of other dimensions of sexual and reproductive health, menstruation and other STIs in this study is lacking especially for early adolescents (10- to 14-year-olds). The spread of more comprehensive sexual and reproductive health information is needed within these and similar communities in SSA to help adolescents gain insight on how to make their own decisions towards positive adolescent sexual and reproductive health and protect them from risks.

Influence of demographic characteristics on sexual health

Baruwa and Amoateng (2019), explored socio-demographic factors associated with early sexual experience among South African female youth. The researchers posited that early sexual experiences affect the sexual and reproductive health of young persons because they put them at risk of risky sexual behaviours including multiple sexual partners and inconsistent condom use. As a consequence, early sexual experiences increase the risk of unintended pregnancies and STIs, including HIV/AIDS. Their study, therefore, aimed to fill the gap by assessing the socio-demographic factors that are associated with early sexual experience among South African female youth using the 2016 South Africa Demographic and Health Survey (SADHS). Results showed that female youth with secondary (HR: 0.69, CI: 0.61-0.77) and higher (HR: 0.47, CI: 0.41-0.54) education had a lower hazard risk of early sexual experience compared to those who had no education and primary education. Female youth between the ages of 25-34 (HR: 0.70, CI: 0.65-0.74) had hazard lower risk of early sexual experience compared to those from a poor wealth index. Belonging to the "other" population group reduced the hazard risk of early sexual experience among female youth compared to those belonging to the African population group (HR: 0.87, CI: 0.77-0.98).

Watsi and Tarkang (2020), explored demographic determinants of risky sexual behaviours among senior high school students in the Hohoe municipality, Ghana. The researchers opined that Senior High School (SHS) students fall within the age group (15-24 years) hardest hit by HIV/AIDS. Since about 90% of HIV transmission in sub-Saharan Africa (SSA) is through heterosexual intercourse, they assumed that these students engage in risky

sexual behaviours. Hohoe municipality has one of the highest HIV prevalence in Ghana (3.4%). A descriptive cross-sectional design was employed in the study. A pretested structured questionnaire was used to collect data from a multistage sample of 270 SHS students who consented to participate in January 2019. Descriptive and inferential statistics were performed using the Stata version 14.0 software program at the 0.05 level of significance of 270 respondents, 112 (41.5%) were engaged in risky sexual behaviours. Single students were 82% less likely to engage in risky sexual behaviours than their married counterparts (p=0.032) and Muslims were 89% less likely to engage in risky sexual behaviours than Christians (p=0.032). The findings of the study showed that religion and marital status were the two socio-demographic characteristics that were significantly associated with risky sexual behaviour.

Furthermore, Penhollow, Young, and Denny (2005), explored the impact of religiosity on the sexual behaviours of college students. The purpose of the study was to determine if the frequency of religious attendance and perceived degree of religiosity could distinguish between those students who have and have not participated in selected sexual behaviours. Data were collected from a convenience sample of undergraduate students (n = 408) at a southeastern University. Students voluntarily completed a questionnaire in a regular classroom setting. The questionnaire elicited information regarding the frequency of attendance at religious services, perceived strength of religious feelings, perception of God's view of sex, and participation in the following sexual behaviours: sexual intercourse (ever, last year and last month), giving oral sex (ever and last month), receiving oral sex (ever and last month), and anal sex (ever). Data were analysed using both univariate analysis (chi-square

and analysis of variance) and logistic regression. Results indicated that religiosity variables, especially the frequency of religious attendance and religious feelings, were significant predictors of sexual behaviour. Results should be considered by those working with college students in the area of human sexuality.

Odimegwu (2005), investigated the influence of religion on adolescent sexual attitudes and behaviour among Nigerian university students. The study posited that religion plays a significant role in the life of individuals in any society. Its role as a moral builder has been variously acknowledged. Their study examined the role of religion in adolescent sexual attitudes and behaviour in Nigeria. The study was conducted in two national universities in Nigeria with a student population of more than 40,000. The institutions were located in the eastern and western parts of the country. Data for the study were collected from a representative sample of students' resident in the universities. A total of 1,870 students were successfully interviewed but because of the age restriction for adolescents, information from 1,153 campus-based adolescents aged 10-24 years was analysed. The logistic regression model was used to do the analysis both at the adjusted and unadjusted levels. The findings were consistent with existing literature. There was a strong relationship between religiosity and adolescent sexual attitudes and behaviour, although religious commitment was seen to be more important than religious affiliation in affecting adolescent sexual attitudes and behaviours.

Sexual health needs of female adolescents with visual impairment

Some studies have tried to establish the sexual health needs of female adolescents with disabilities specifically visual impairment. Arbeit, Fisher,

Macapagal, and Mustanski (2016) did a study on the topic, of bisexual invisibility and the sexual health needs of adolescent girls. The purpose of the study was to analyse bisexual female youth perspectives on their experiences accessing sexual health information and services provided by a doctor, nurse, or counsellor. A mixed method study design was employed in their study where data from bisexual female youth were collected through an online questionnaire and asynchronous online focus groups addressing lesbian, gay, bisexual, and transgender health and HIV prevention. Data were analysed with descriptive statistics and thematic analysis. Results from the study revealed that school-based sexual health education was limited by a restrictive focus on abstinence and condoms and the exclusion of STI risk information relevant to sex between women. Even though the focus was not on the sexual health needs of adolescents, it was paramount in the study since it was the backbone for concluding the barriers subject to bisexual healthcare and they indicated that the sexual needs of those adolescents were many.

Again, Burke, Kébé, Flink, van Reeuwijk, and le May (2017), did a qualitative study to explore the barriers and enablers for young persons with disabilities to access sexual and reproductive health (SHR) services in Senegal. The study aimed to explore the SRH vulnerabilities and expressed needs for young persons with disabilities, their experiences of accessing SRH services, and what access challenges they face. Male and female peer researchers conducted 17 focus group discussions and 50 interviews with young women and men with disabilities between 18 and 24 years with a physical, visual, or hearing impairment in Dakar, Thies, and Kaolack in Senegal. Results showed that young persons with disabilities reported very

low knowledge about, and use of, SRH services including contraception and gynaecological consultations, but demonstrated a need for them, and were reliant on others to accompany them to service providers, impeding their access to confidential services. Multiple cases of rape were revealed, particularly among women with hearing impairments. They concluded that SRH policies and interventions for young persons with disabilities should be based on an understanding of the intersection of youth, disability, and gender, and thus urgent and targeted action is needed to improve provider attitudes and capacity to respond to the needs of young persons with disabilities and to address the burden of sexual violence.

Furthermore, Baines, Emerson, Robertson, and Hatton (2018), studied sexual activity and sexual health among young adults with and without mild/moderate intellectual disability. The main objective was to provide answers to the widespread concern about the sexual 'vulnerability' of young people with intellectual disabilities, but little evidence relating to sexual activity and sexual health. The paper described a secondary analysis of the nationally representative longitudinal Next Steps study (formerly the Longitudinal Survey of Young People in England), investigating sexual activity and sexual health amongst young people with mild/moderate intellectual disabilities. The analysis investigated family socioeconomic position, young person's socioeconomic position, household composition, area deprivation, peer victimization, friendships, sexual activity, unsafe sex, STIs, pregnancy outcomes, and parenting. Results showed that most young people with mild/moderate intellectual disabilities have had sexual intercourse by age 19/20, although young women were less likely to have sex before 16 than their

peers and both men and women with intellectual disabilities were more likely to have unsafe sex 50% or more of the time than their peers. They concluded that most young people with mild/moderate intellectual disabilities have sex and are more likely to have unsafe sex than their peers. Education and health services need to operate on the assumption that most young people with mild/moderate intellectual disabilities will have sex.

Another study by Panjalipour, Bostani Khalesi, and Mirhaghjoo (2018), investigated Iranian female adolescents' reproductive health needs. It was a systemic review and the aim was to review female adolescents' reproductive health needs (RHN). They performed the systematic review using the Scopus, PubMed, Google Scholar and Science Direct databases as well as Magiran for English articles written by Iranian authors using the keywords "Female Adolescent", "Reproductive Health", "Reproductive Health Needs" and "Iran". Results indicated that 148 references were identified, yet upon further review, only 25 quantitative and qualitative studies met the inclusion criteria. All of the Iranian studies that investigated the RHN of female adolescents entered the study. In 16 studies, an assessment was conducted using a questionnaire, and 9 studies used semi-structured interviews. The results were divided into 3 general groups of needs, including special educational needs, comprehensive counseling, and adolescent-friendly services. They concluded that findings from the study stipulate that most adolescents have an unmet need for reproductive health services and services are not friendly. Therefore, it is suggested that future efforts should be directed toward need-based interventions to improve adolescent reproductive health.

In a study by Stanojević, Neimeyer, and Piatt (2021) on the complexities of sexual health among adolescents living with autism spectrum disorder (ASD), they described the relationship and how inadequate sexual socialization often leads to socially "inappropriate" sexual behaviours of adolescents with ASD. They found that sexual health goes beyond the physical component and relies on emotional and social skillsets that directly influence appropriate sexual behaviours and connection with others thus the concept of appropriate psychosexual norms is quite important and can be adopted by exposing adolescents with ASD to social environments that form healthy interactions with others. The sexual behaviour of adolescents with ASD is often observed from a problem-based perspective rather than a strength-based approach. Also, there was a lack of evidence-based sexual education curriculums geared towards the needs of adolescents with ASD which bring closer together the dynamic relationship between sexual socialization and sexual behaviour. In their study they considered adolescents with ASD which leaves population gap in which this current seeks to fill by investigating adolescents with visual impairments' sexual health needs.

Shirpak et al. (2008), did a qualitative assessment of the sex education needs of married Iranian women. The study asserted that despite a comprehensive reproductive health program there is little sex education available in Iran. The article presented the results of a study conducted to identify the content area for a proposed sex education programme for married Iranian women. Twenty-one married female clients (23–45 years) and 18 reproductive health providers, recruited from urban health clinics in Tehran using non-probability sampling, participated in four focus group discussions.

Sexual health information needs related to the reproductive tract and sexually transmitted infections, the ‘‘acceptability’’ of certain sexual practices such as oral and anal intercourse, and the sexual response cycles and physiology of men and women. Women’s sexual concerns related to communication, incompatibility of sexual interests and desire, and their ability to maintain a strong marriage. Two themes cut across women’s responses to all questions: modesty and maintaining a strong marriage. Results contributed to the design of a sex education programme that addressed the specific information needs and concerns of Iranian women. Their study made use of women from Iran; however, this current study seeks to investigate the sexual health needs of visually impaired adolescents.

Influence of socio-cultural norms on the sexual health of female adolescents with visual impairment

Roudsari, Javadnoori, Hasanpour, Hazavehei, and Taghipour (2013) conducted a study on socio-cultural challenges to sexual health education for female adolescents in Iran. The study was a qualitative one and the objective was to address socio-cultural challenges to sexual health education for female adolescents in Iran. Qualitative data from female adolescents (14-18 years of age), mothers, teachers, authorities in the health and educational organizations, health care providers, and clergies were collected from Mashhad and Ahvaz through focus group discussions and individual in-depth interviews. The data were analysed using conventional qualitative content analysis with MAXqda software. Results indicated that the main socio-cultural challenges to sexual health education for adolescents in Iran were affected by taboos surrounding sexuality. The emergent categories were denial of premarital sex, social

concern about the negative impacts of sexual education, perceived stigma and embarrassment, reluctance to discuss sexual issues in public, sexual discussion as a socio-cultural taboo, lack of advocacy and legal support, intergenerational gap, religious uncertainties, and imitating non-Islamic patterns of education. They concluded that cultural resistances are more important than religious prohibitions, and affect the nature and content of sexual health education. However, despite the existence of salient socio-cultural doubtful issues about sexual health education for adolescents, the emerging challenges are manageable to some extent. Hence, it is hoped that the acceptability of sexual health education for adolescents could be promoted by overcoming the cultural taboos and barriers as major obstacles.

Afroz, Gele and Thorsen (2021), investigated the culture clash of female Somali adolescents and sexual and reproductive health services in Oslo, Norway. Culture influences an individual's perception of health needs. The influence of culture also applies to Somali individuals' perception of their sexual and reproductive health (SRH) and uptake of related services. An understanding of female Somali adolescents' SRH needs is vital to achieving inclusive health coverage. No research has, however, been conducted to explore the SRH needs of this population group in Oslo; hence, this qualitative study aimed to minimise the knowledge gap. Fourteen young women aged 16-20 years were recruited using the snowball technique with purposive sampling. In-depth interviews using a semi-structured interview guide were used to collect data, and thematic analysis was applied. Participants perceived SRH as a very private matter and open discussion of SRH was extremely limited owing to certain Somali cultural beliefs and values. As the participants

intend to practice chastity before marriage, they believed that existing SRH services were largely irrelevant and inappropriate. Where they felt the need to access SRH services, participants wished to do so in a way they considered culturally appropriate. Somali culture markedly influences individuals' perceptions of SRH services. It is recommended to modify existing SRH services by increasing confidentiality and anonymity to take into account the cultural requirements of female Somali adolescents.

Again, Metusela et al. (2017) did a study with the heading, "In my culture, we don't know anything about that": Sexual and reproductive health of migrant and refugee women. The goal of the research was to examine constructions and experiences of sexual and reproductive health (SRH) of non-English-speaking migrant and refugee women, across a range of cultural groups in Sydney, Australia, Vancouver, and Canada. The study employed the qualitative study design. A total of 169 women from Afghanistan, Iraq, Somalia, South Sudan, Sudan, India, Sri Lanka, and South America participated in the study. A total of 84 individual interviews and 16 focus groups which comprised 85 participants were conducted. Thematic analysis was used to analyse the data. Three themes were identified and they were, women's assessments of inadequate knowledge of sexual and reproductive health and preventative screening practices, barriers to sexual and reproductive health, and negative sexual and reproductive health outcomes. Across all cultural groups, many women had inadequate knowledge of SRH, due to taboos associated with constructions and experiences of menstruation and sexuality. That has implications for migrant and refugee women's ability to access SRH education and information, including contraception, and sexual

health screening, making them vulnerable to SRH difficulties, such as sexually transmissible infections and unplanned pregnancies. They concluded that it will be essential for researchers and health service providers to understand socio-cultural constraints which may impede SRH knowledge and behaviour of recent migrant and refugee women, to provide culturally safe SRH education and services that are accessible to all women at resettlement irrespective of ethnicity or migration category.

Last but not least, Coast, Jones, Francoise, Yadete, Isimbi, Gezahegne and Lunin (2019) conducted a study on adolescent sexual and reproductive health in Ethiopia and Rwanda: a qualitative exploration of the role of social norms. The study aimed to address the dearth of evidence on early adolescent understandings and experiences of sexual and reproductive health (SRH) in Ethiopia and Rwanda, drawing on a multisite qualitative research study with ten (10) to (12) year old and fourteen (14) to (15) year old male and female adolescents and a range of adult participants. The study was informed by a conceptual framework that draws on Amartya Sen's capability approach, which calls for investments in a broad set of assets that expand individuals' capacity to "be" and to "do." Using SRH as a focal lens, the article considered the role played by gendered social norms in adolescents' experiences of SRH-related understandings and experiences. Three key interrelated gender themes emerge from their thematic analyses of qualitative evidence generated by the multimethod approach and those were, puberty transitions, sexuality, and victim blaming. In the analyses, they paid attention to diversity (for example, age, gender, and place of residence) among adolescents within and across the two focal countries and considered how discriminatory gendered social norms

play a role in hindering the effective uptake of expanding health services. They concluded by emphasizing the need for program designers and implementers to address the role of underlying social norms in a more strategic and context-specific way to help young people navigate their sexual and reproductive lives.

Influence of degree of impairment (partially sighted or total blindness) on the sexual health of female adolescents with visual impairment

There is limited literature on female adolescents' visual impairment with regards to the subject of the degree of impairment on sexual health, however, Sorokowska, Oleszkiewicz, and Sorokowski (2018), explored compensatory effect on mate selection. Importance of auditory, olfactory, and tactile cues in partner choice among blind and sighted individuals. The researchers posited that human attractiveness is a potent social variable, and people assess their potential partners based on input from a range of sensory modalities. Among all sensory cues, visual signals are typically considered to be the most important and most salient source of information. However, the researchers were of the view that it was unclear how people without sight assess others. The study explored the relative importance of sensory modalities other than vision (smell, touch, and audition) in the assessment of same- and opposite-sex strangers. The study specifically focused on possible sensory compensation in mate selection, defined as the enhanced importance of modalities other than vision among blind individuals in their choice of potential partners. Data were obtained from a total of 119 participants, of whom 78 were blind people aged between 16 and 65 years (M = 42.4, SD = 12.6; 38 females) and a control sample of 41 sighted people aged

between 20 and 64. Their findings indicated that visual impairment increases the importance of audition in different types of social assessments for both sexes and mate choice for blind men.

Scheller, Matorres, Little, Tompkins, and de Sousa (2021), the role of vision in the emergence of mate preferences. The researchers opinionated that cross-cultural research has repeatedly demonstrated sex differences in the importance of partner characteristics when choosing a mate. Men typically report higher preferences for younger, more physically attractive women, while women typically place more importance on a partner's status and wealth. As the assessment of such partner characteristics often relies on visual cues, this raises the question of whether the visual experience is necessary for sex-specific mate preferences to develop. To shed more light on the emergence of sex differences in mate choice, their study assessed how preferences for attractiveness, resources, and personality factors differ between sighted and blind individuals using an online questionnaire. Their study further investigated the role of social factors and sensory cue selection in these sex differences. Results replicated well-documented findings in the sighted, with men placing more importance on physical attractiveness and women placing more importance on status and resources. However, while physical attractiveness was less important to blind men, blind women considered physical attractiveness as important as sighted women. The importance of a high status and likable personality was not influenced by sightedness. Blind individuals considered auditory cues more important than visual cues, while sighted males showed the opposite pattern. Further, relationship status and indirect social influences were related to preferences.

The findings shed light on the availability of visual information for the emergence of sex differences in mate preference.

Cornell Kärnekull (2018), explored auditory and olfactory abilities in blind and sighted individuals. The researcher was of the view that blind individuals face various challenges in everyday life because of the lack of visual input. However, since they need to rely on the non-visual senses for everyday tasks, for instance, when navigating the environment, the question has been raised as to whether perceptual and cognitive abilities in these senses may be enhanced. This question has mainly been addressed for auditory and tactile abilities, whereas there is considerably less research into the chemical senses, such as olfaction. However, to determine whether blindness has general effects, different senses and types of tasks should be studied, preferably in the same study. Blindness did not influence the reminiscence bumps (i.e., memory peaks in certain age intervals) or have any clear impact on the number of retrieved sound-or odor-evoked memories. Taken together, the present findings indicate that blindness has no general influence across tasks or sensory modalities. Rather, specific auditory abilities, such as episodic memory, may be enhanced in blind individuals, although such effects may depend on both the onset age of blindness and the length of the retention interval. In conclusion, for most perceptual and cognitive abilities examined, performance seemed unaffected by blindness.

Academic experience among female adolescents with visual impairment.

Mamah, Deku, Darling, and Avoke (2011), investigated university teachers' perception of the inclusion of the visually impaired in Ghanaian universities. Their study was undertaken to examine the university teachers'

perception of including students with Visual Impairment (VI) in the public universities of Ghana. The sample consisted of 110 teachers from the University of Cape Coast (UCC), the University of Education, Winneba, (UEW), and the University of Ghana (UG). Data were collected through a questionnaire developed by the researchers (Cronbach's coefficient Alpha of .76). One research question and two hypotheses were formulated to guide the study. The data were analyzed employing descriptive statistics, t-tests, and ANOVA. The results showed that teachers' perceptions toward the inclusion of students with the visually impaired were favourable. Gender differences were noted showing that female teachers' perceptions were more positive than the males. Teachers in the three universities also differed in their perception toward the inclusion of students with VI.

Asamoah, Ofori-Dua, Cudjoe, Abdullah, and Nyarko (2018), explored inclusive education: Perception of visually impaired students, students without disabilities, and teachers in Ghana. The purpose of this study was to investigate the perception of visually impaired students, their peers without disabilities, and teachers about inclusive education, focusing on a second-cycle educational institution in the Eastern region of Ghana implementing inclusive education for the visually impaired. They collected data from 23 visually impaired students, 27 students without disabilities, and 19 teachers in the inclusive school. Data were collected through semi-structured in-depth interviews. A phenomenological approach was employed, reporting findings from participants' own words. The study findings revealed that visually impaired students and some teachers supported inclusion while some students without disabilities disliked the practice. Some teachers indicated that the idea

of inclusive education is a good way to ensure equal educational opportunities. The study concluded that Ghanaian teachers in inclusive schools should be equipped with training to teach students with disabilities.

Kpodoe, Ampratwum, Ntoaduro, and Yeboah (2019), examined the experiences of students with visual impairment in higher education in Ghana: The perspective on inclusive education. The study employed the cross-sectional descriptive survey design using a semi-structured questionnaire for data collection to provide answers to the research questions. The study population included all students with visual impairment across the three Public Universities namely; University of Ghana, University of Cape, and University of Education, Winneba. In all, 87 students with visual impairment were purposively selected to participate in the study. The study revealed that students with visual impairment in these three public universities experience several attitudinal challenges from teachers, resource persons, and fellow students which affect their academic achievement. Also, students with visual impairments in Ghana's public universities are constantly challenged by classroom instructional strategies, and it is difficult for them to access course outlines and textbooks, among other relevant facilities in advance. It was recommended that the Special Education Division of the Ministry of Education in conjunction with the Resource Persons in the various universities should organize periodic in-service training programmes for university teachers who teach in inclusive public universities to adequately equip them in handling the visually impaired.

Temesgen (2018), explored the school challenges of students with visual disabilities. The purpose of the study was to identify challenges that

students with visual disabilities faced in the primary schools of Weldeya town in Ethiopia. Principals, students with visual disabilities, and teachers were invited to take part in the study. With this, a phenomenological design was used to investigate the experience of participants regarding the school challenges of students with visual impairment. The researcher used a semi-structured interview, focused group discussion, and observation checklist to gather data. Then, the data were analyzed thematically which were pretested in relation to research questions. Through the discussion, environmental inaccessibility, inflexibility of financial guidelines in schools, and lack of training among teachers were identified as major school challenges for the education of students with visual impairment.

Omede (2015), worked on the challenges of educating the visually impaired and quality assurance in tertiary institutions of learning in Nigeria. The paper focused on the challenges in educating the visually impaired and modalities for ensuring quality assurance in tertiary institutions of learning in Nigeria. It examined the global challenges in the higher educational system and made it clear that the visually impaired are those with visual problems be it partial, low vision, or total blindness, as such need higher education to be liberated from the shackles of pity and sympathy. The paper found that the educational needs of the visually impaired include computer applications, optical aids, braille writing materials, issues of mobility, funding, library resources, personnel availability, and physical infrastructural facilities. Recommendations were proffered to tackle the issues and challenges identified.

Amin, Sarnon, Akhir, Zakaria, and Badri (2021), researched the main challenges of students with visual impairment at higher education institutions. The researchers posited that everyone has the right to get access to education, including people with visual impairments. The article explored how students with visual impairment experience their life at a higher education institution in Malaysia. This study used a qualitative approach, that is, a case study design. The data collection method used in-depth interviews that involved five students with visual impairment; four males and one female. The findings showed that students with visual impairment experience five main challenges in higher education regarding finances, public stigma, accessibility, peer-to-peer acceptance, and difficulties in learning at the university. The study concluded that higher education providers may use this study's outcomes to improve their support and facilities for students with visual impairments effectively.

Agesa (2014), explored the challenges faced by learners with visual impairments in inclusive settings in Trans-Nzoia County. The study investigated the challenges faced by learners with visual impairments in an inclusive setting, in Trans-Nzoia County Kenya. The study used a descriptive survey design to explore the challenges that face learners with visual impairment in the County. The target population included one hundred and eighty-four learners with visual impairments, twenty classroom teachers, and six itinerant teachers out of whom an accessible sample population of one hundred and ten was derived. Both qualitative and quantitative data collection procedures were employed through the use of questionnaires, interviews, and documentary analysis. The study found that most learners with visual

impairments performed poorly in academics due to the lack of implementation in the visually impaired school which calls for a differentiated curriculum as per the laid down policy on Special Needs Education, which is attributed to social, economic, and partly cultural factors. The nature of the differences in the needs of learners with visual impairments calls for more teachers in special needs education so that at least each regular school has one. Parents of learners with visual impairments and the community should also be sensitized on their education.

Influence of sexual health of female adolescents with visual impairment on academic experience

Limited literature exists in the context of sexual health and academic experience of female adolescents with visual impairment, however, there was related literature in that regard. For instance, McDaniels and Fleming (2016) did a study on sexuality education and intellectual disability. The purpose of the research was to examine the current status and effectiveness of sexual education curricula for individuals with intellectual disability. Articles that were deemed appropriate, based on the thorough review of the effects of ineffective sexual education and a review of current options, were analyzed. The final sample included 92 articles. The results demonstrated that, as a result of inadequate sexual education, individuals with intellectual disability are at a greater risk of sexual abuse, sexually transmitted infections, and misinformation. A thorough examination of the available literature resulted in the conclusion that formal, individualized, and specific sexual education for individuals with intellectual disabilities is lacking and thus affects those individuals' academic experience. They concluded and recommended that

considering the paucity of published data and the absence of appropriate, population-specific, and empirically validated sexual education content for individuals with intellectual disabilities, changes to the current approach are strongly indicated. The study recommended further studies on intellectual disability but not visually impaired female adolescents, and creates a gap to be filled by this current study.

Also, Schaafsma, Kok, Stoffelen, and Curfs (2017), conducted a study on the topic; people with intellectual disabilities talk about sexuality: implications for the development of sex education. The study aimed to assess the perspectives of people with intellectual disabilities on several sexuality-related topics. Semi-structured interviews were held with 20 people with intellectual disabilities covering topics such as sex education, relationships, sex, social media, parenthood, and support. They reported frequency of sex education received by the participants was low. Their knowledge regarding sex education was mainly limited to topics such as safe sex, contraception, and sexually transmitted infections and tends to be superficial which per the study went on to affect their academic experience. They concluded and recommended that findings from both this study and the literature show that there seems to be a need for high-quality sex education and thus to increase the effectiveness of a sex education programme, it will be advisable that a theory-and evidence-based framework, such as intervention mapping, is used for its development.

Murray (2019), conducted a study to develop and deliver a sexual health education programme for adolescents with developmental disabilities and to identify the reactions and perceptions of students, teachers, and parents

involved in the programme. Using an interprofessional collaborative community development model, they developed and delivered a sexual health programme to young people aged 16–21 years with developmental disabilities in five Saskatchewan, Canada high schools. The project adapted, modified and administered the Canadian Red Cross RespectED questionnaires to all participants following the Programme to allow for the identification and implementation of best practices concerning the project's future operation. Data collected from the feedback and comments were summarised, and major concepts were identified. The information gathered identified meaningful educational experiences for students, their parents and teachers. Project findings reinforce the importance of sexual health education for people with developmental disabilities to increase opportunities for healthy sexual relationships and intimacy, promote positive sexual identities, and decrease the risk of sexual victimisation.

Furthermore, menstrual period is a critical time in the life of female adolescents which also forms part of sexual health. It influences different daily life aspects, including physical status, academic performance, mood, diet, exercise, and sleep patterns. Khamdan et al., (2014), explored the impact of the menstrual period on physical condition, and academic performance. A self –administered questionnaire was developed for this study. It included the following variables: socio-demographic characteristics, menstrual history, academic performance, and habits (sleeping, appetite, exercise, mood, and social relationships) during the menstrual period. The results of the study showed that the mean age at menarche of the study population was 12.7 ± 1.5 years. The majority (90.7%) of the students experienced symptoms during

their menstrual period, with the commonest five being abdominal cramps (90.7%), backache (82.7%), tiredness (80.4%), pelvic pain (74.0%), and bloating (65.2%). Pain was reported as the most common cause of exercise discontinuation during menstruation (42.86%). The menstrual period affected their amount of sleep (73.3%), sleep quality (60%), diet (73.8%) and exercise (60.7%). Academic performance was affected as well; study time (76.0%), concentration (65.8%), group activities (58.1%), examination performance (51.8%), and attendance (40.8%). The study concluded that the menstrual cycle has different effects on female medical students' physical conditions, academic performance, and habits.

Summary of Empirical Review

In conclusion, all the studies reviewed above provide knowledge and information about the respective objectives of this study yet there are some minor inconsistencies. The most prevalent of those inconsistencies is the fact that some of the studies do not provide vivid answers to the various objectives because they are not the major motive for the conduction of the research, thus they provide minute information about the objectives of this research. Again, in as much as the results obtained in the various articles are consistent and significant, the consistency and significance level are small and thus make it difficult for us to confidently conclude that the results will play a very big role in this current research. Furthermore, there is some adage of biases in conducting research, in the sense that some authors tend to shed some light on the major concepts in their various studies which make it difficult to confirm what they are trying to find. Not only this, but also, the most worrisome of all the drawbacks in these studies is the fact that the majority or more than ninety

percent (90%) of them were conducted in Europe, Asia, America, and so on with little of them being conducted in Africa, specifically Ghana to be precise. In view of this, it will be very difficult to relate and or apply their findings in our part of the world, because we all live on different continents and thus possess different cultures, traditions, beliefs, norms, and laws which make it very difficult to generalize their findings in Africa and specifically Ghana to be precise. Thus, it will be very significant to conduct research in our region, specifically Ghana, which will go a long way to fill the gap in the literature and also provide us with the relevant information that we need to make our conclusions and help in implementing policies on the subject in question.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents the methods used for the study. It includes the research philosophical basis for the mixed methods design employed in the study, the research design, the study area, the population for the study, the sample and sampling procedure used, and the research instrument used for the data collection and analysis procedures employed.

Research Paradigm

The arguments over research paradigms have a long history, with the 1980s being particularly intense. Some have argued that the fight for the primacy of one paradigm over another is pointless because each paradigm is unique offering its advantages (Sparkes, 1992). In the paradigm debate or so-called "paradigm war," Creswell and Clark (2017), distinguished many schools of thought. These are positivism, interpretivism, and pragmatism (Cronje, 2014; Creswell & Clark, 2017). As a philosophy, positivism subscribes to the belief that only accurate knowledge acquired through experience, observation (use of the senses), and measurement is reliable. In positivism, the researcher's role in a study is limited in an objective way to data collection, analysis, and interpretation (Aliyu, Bello, Kasim & Martin, 2014). Research findings from positivist studies can generally be observed, quantified, and generalised (Ishtiaq, 2019).

Interpretivism could also be said to be a philosophical dimension that implies that the social domain cannot be investigated using the scientific method of inquiry applied to nature and that a unique epistemology is required

to examine the social realm. Newman (2014), defines interpretivism as a systematic examination of socially meaningful action by objectively observing people in their natural setting to recognise and interpret how people build and maintain their social environments. Central to the interpretive paradigm is the belief that researchers' ideas and vocabulary in their work influence their understanding of the social world they are researching, examining, and defining (Spector-Mersel, 2010). Thus, the interpretivist paradigm guides the qualitative field of inquiry. Instead of obtaining an objective viewpoint, interpretivism seeks meaning in individuals engaging in social interactions and subjective experiences.

Pragmatism is a relatively novel research paradigm that has received much attention from researchers across various disciplines and fields of inquiry. As a paradigm, pragmatism argues that it is possible to combine both positivism and interpretivism into one paradigm (Saunders, Lewis & Thornhill, 2012). From the explanation of the paradigms of positivism, interpretivism, and pragmatism, the paradigm of pragmatism is selected for this study because the researcher seeks to explore the sexual health and academic experience among adolescents with visual impairment by gathering data quantitatively and qualitatively. Brannen (2005), opines that the philosophical basis for a research approach chosen for a study largely depends on the assumptions of the researcher. This study employed pragmatist philosophy because of the nature of the study. The pragmatics philosophy of research recognises that there are many ways of interpreting the world and undertaking research, that no single point of view can ever give the whole picture, and that there may be different perspectives (Saunders, Lewis, &

Thornhill, 2012). The study of sexual health and academic experience among adolescents with visual impairment requires different research approaches. The pragmatic philosophy is considered the best philosophy for this study because the pragmatic perspective emphasises what works, using diverse approaches, giving priority to the importance of the research issue and question, and assessing both objective and subjective knowledge (Morgan, 2007).

Research Design

Research design is the conceptual structure within which research is conducted; it is a model for data collection, measurement, and analysis. As such, the design provides an overview of what the researcher will do by writing the hypothesis and its operational consequences for the final analysis of the data (Kothari, 2012). Thus, a research design is required because it enables the seamless navigation of the different research activities, making research as effective as possible and delivering optimum knowledge with limited effort, time, and resources.

This study made use of an embedded mixed-method design. Embedded mixed method design is described by Klassen, Creswell, Plano Clark, Smith, and Meissner (2012), as the researcher combining the collection and analysis of both quantitative and qualitative data within a traditional quantitative research design or qualitative research design. In an embedded mixed-method design, the researcher collects and analyses both quantitative and qualitative data to examine a case. The embedded mixed method design works on the principle that one data set provides a supportive, secondary role in a study based primarily on the other data type (Plano Clark & Creswell, 2015).

Furthermore, the embedded mixed method design posits that it is used when each research question seeks to elicit separate data and does not aim at integrating the different data sets at any point (Plano Clark & Creswell). I had seven different research questions which elicited both qualitative and quantitative data, with qualitative data dominating the quantitative dimension. Five of the research questions elicited qualitative data whilst two research questions gathered quantitative data.

The mixed method design was used in this study because by mixing both quantitative and qualitative methods, it offered the best opportunity for answering many important and complex research questions (Johnson, Onwuegbuzie, Tucker, & Icenogle, 2014). Also, the reason behind using mixed methods design stems from the fact that neither quantitative nor qualitative methods are sufficient, by themselves, to capture the trends and details of the issues being studied (Ivankova, Creswell, & Stick, 2006).

Mixed method research has a brief history as a distinct methodological movement, dating back to the early 1980s, and has been dubbed a "silent" revolution because of its focus on reconciling disputes between qualitative and quantitative methodological approaches (Tashakkori & Teddlie 2003). The mixed method is a new field that is generating a lot of controversy across a lot of disciplines. It's especially popular in the fields of applied social research and evaluation (Bazeley, 2003). Tashakkori and Teddlie (2003), acknowledge the impacts of the paradigmatic wars' residue, but they are optimistic about the signs of progress employing mixed methods. Mixed method analysis is a class of research designs in which a researcher blends or incorporates quantitative and qualitative research techniques, methods, approaches, concepts, or

expressions into a single study for scope and depth of comprehension and corroboration (Creswell & Clark, 2017).

Mixed method research designs have been popular in social science studies for many other benefits, including the ability to harness the strengths of a range of approaches, to provide richer insights into phenomena of interest that cannot be completely understood by quantitative or qualitative methods alone, to answer research concerns that call for real-life conceptual interpretation, multi-level perspectives, and cultural influences (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Dickinson, 2008; Venkatesh, Brown, & Bala, 2013; Venkatesh, Brown, & Sullivan, 2016). For example, Venkatesh et al. (2013) suggest that a mixed-method research approach is particularly useful when researchers want to get a holistic understanding of a phenomenon for which extant research is fragmented, inconclusive, and equivocal.

Justification for using mixed methods

The tenet of this entire study was such that one methodological approach would not have presented an insightful, adequate, and comprehensive outcome. Since the study sought to explore sexual health and academic experience among adolescents with visual impairment in Ghana, I posited that data from both qualitative and quantitative sources would provide or lead to a better understanding of the research problem than depending on only one approach (Creswell, 2018). I, therefore, employed the mixed method design. It seems reasonable to conclude that some issues are best captured by adopting multiple models and employing different methodological approaches.

Study Area

The study setting in research refers to the physical and social environment where the research is conducted. It is an important aspect of research methodology and can have a significant impact on the results of the study. The study setting in research can vary depending on the type of study and research question being investigated.

Okuapemman Senior High School is a coeducational first-cycle school in Akropong, Eastern Region, Ghana. This school is mixed. It is also one of the institutions that accept students with disabilities. The school was founded in 1957 by barrister Charles Opoku Acheampong, who had previously studied in Edward Akufo-Addo's legal offices. Past Students acquire the name ‘’Adehye’’ as a result of its establishment in a historic and royal area. The school was later handed to the government of Ghana after the demise of the founder. The school runs both a day and boarding system with the majority of the students in the boarding house. There are 6 houses in all with 3 for the ladies and 3 for the gentlemen. The school’s colours are brown and white with brown signifying mother earth and nature and white depicting purity. The school has on these grounds trained a lot of diligent men and women in godliness, good character, and responsible. Programmes offered in the school include Agriculture, Business, General Arts, Science, Home Economics, and Visual Arts. The school practices an inclusive system that enables visually impaired students to have access to education. Visually impaired students are given the opportunity to participate in activities and share facilities with the other students. The school strongly stands by its principle of not segregating students on any grounds. It is on this ground the school was selected for the

study since the participants, that is, female adolescents with visual impairment were in the school.

Adidome Senior High School was founded on 1st October 1985 by a group of old pupils of Adidome E. P. Schools under the leadership of the late Rev E. K. Titiati with seven (7) teachers and fifty-seven (57) students. At the time it was founded, it was called Mafi Community Day Secondary School. It had its first site at the defunct Rockshell Work Camp near the Adidome–Sogakope Junction. It was registered as a private secondary school on 7th August 1987 and was awarded a certificate "B" by the Ghana Education Service (GES). Through an inspection by GES in 1989, the school was given partial absorption into the public school system. It fully became a government-assisted school in January 1991. The school was upgraded to a Model School status 2005/2006 academic year with the resultant effects being expansion in infrastructural facilities and student enrolments with the consequent staff increase. In 2022, the student population stood at 2,340 with 113 teachers and 52 non-teaching staff. The school serves as a District Science Resource Centre for the Central Tongu District. It has been offering inclusive education since 2008. It, therefore, educates visually impaired and sighted students together. On the basis of the school having a visually impaired unit it made it conducive to select this school where the participants could be found.

Methodist Senior High was established in 1984 as a private secondary vocational school by the Wesley Methodist Church to enrol the teeming teenage girls roaming the streets of the twin city in mainstream secondary education. Wenhci Methodist Senior High School has visually impaired units which serve as a point of reference for the study participants.

Wa Senior High Technical School is a coeducational second-cycle institution at Wa in the Upper West Region of Ghana. The school which was formerly called Wa Secondary Technical, houses both day (non-boarding) and boarding students at its premises and is precisely located at Konta opposite the Ghana Water Company. In the 1950s, the school was founded as a neighbourhood middle day school. Progressively, the institution changed its name to a junior secondary school in 1978, and in 1982 it became a community secondary technical school. On March 30, 1983, it received official approval to operate as a community day secondary technical school. The school's name was changed to Wa Senior High Technical School in 2004 after the adoption of the educational reforms. The school has a visually impaired unit where participants for this study could easily be selected.

Finally, Sirigu Integrated Senior High School was opened in January 2000 by the Kassena-Nankana District Assembly with help and approval from the GES to meet the secondary school needs of the numerous graduates of the ten junior secondary schools in the region. The first Acting Headmaster, Mr. Atignongo James A., was appointed to lead the opening of the Sirigu Integrated Senior High School in January 2000 after being transferred from Navrongo Secondary School. On January 7, 2000, the school received its official opening with sixty students and six teachers on staff. His Excellency Prof. John Atta-Mills, then the Vice President of the Fourth Republic of Ghana, laid the foundation stone for the school on February 12, 2000. Programmes offered include General Arts, General Science, Agriculture Science, Visual Arts, Business, and Technical. The school has a unit that

caters for the visually impaired where female adolescents with visual impairment were in their numbers and formed part of the study participants.

The Qualitative Approach

Qualitative researchers are interested in understanding the meaning people have constructed, that is, how people make sense of their world and the experiences they have in the world (Merriam, 2009). According to Friesen (2010), the qualitative research approach relies on first-hand accounts and tries to describe what it sees in rich detail. Braun and Clarke (2013), explained that the qualitative approach allows the researcher to get inside the person and understand the issues from within. As such, the study delved into assessing the sexual health and academic experience of female adolescents with visual impairment, specifically, variables such as sexual health needs, the connection between sexual health and the academic experience of female adolescents with visual impairment, and cultural norms, may best be explored qualitatively. The subject of interest, that is sexual health needs, and sociocultural norms are more latent variables that are inherent and sensitive and therefore require that they are explored qualitatively (phenomenology). The participants are allowed to narrate or tell their views about the issue of sexual health. The qualitative study allows for semi-structured interviews to be conducted so that in-depth data could be elicited from the participants. The qualitative aspect of the study focused on research questions 3 to 7 (See page 15).

The Quantitative Approach

The quantitative research method deals with the quantification and analysis of variables to produce information. It includes the use and study of computational data using complex mathematical methods to address questions

such as who, how many, when, where, and how much (Leedy & Ormrod 2014). In expatiating the concept, Aliaga and Gunderson (2002) defined quantitative research methods as an explanation of a problem or phenomenon by obtaining data in numerical form and analysing them with the assistance of statistical methods, in particular statistics. In addition, Williams (2011), points out that quantitative research begins with the detection of a problem, the generation of hypotheses or research questions, the examination of relevant literature, and the quantitative analysis of evidence. Similarly, Creswell (2003) and Williams (2011), noted that quantitative research uses research techniques, such as experiments and polls, and gathers data on a predetermined instrument that yields statistical data. The anonymous nature of quantitative research makes it useful for data collection because participants of a study are more likely to share an honest perspective when there is assurance that their responses will not be used against them in the future. Quantitative data was generated from research questions one and two, that is, the knowledge level of female adolescents with visual impairment on sexual health as well as the demographic characteristics of participants' influence on sexual health.

Population

A research population is generally a large collection of individuals or objects that is the focus of a scientific query. According to Newman (2014), the population is the unit being sampled, the geographical location, and the temporary boundaries. It can be a person, an organisation, a written document, or a social action. In general, all individuals in a study population have a common essential characteristic. Fundamentally, the research population is

split into two: the target population and the accessible population. The target population defines the unit to which the generalisation of the study conclusions will be made (Cohen, Manion & Morrison, 2011). In this study, the population was all the students in the five Inclusive Senior Schools. By contrast, the accessible population in a study connotes the population to which the researchers can apply the study's conclusions. In this regard, FAVI who were readily available, willing and consented to participate in the study. It is from the accessible population that the sample for the study was obtained. The target population for the study were all female adolescents who were visually impaired in the five Inclusive Senior Schools. According to the Population and Housing Census (PHC) conducted in 2021, 8% (2,098,138) of the population have a varying degree of difficulty in performing activities and is higher among females 8.8% (184,636) than males 6.7% (140,575). Difficulty in seeing or visual impairment 4.0% (83,926) has the highest prevalence among all six domains with communicating having the lowest (1.0%). Four regions accounted for more than half (53.6%) of the population 5 years and older with difficulty in performing an activity. They were; Ashanti (17.3%), Greater Accra (13.5%), Eastern (12.0%), and Central (10.8%). However, the focus of this study is on female adolescent with visual impairment who currently in school.

Sample and Sampling Procedure

A sample is simply a subset of the population. The concept of sample arises from the inability of researchers to test all the individuals in a given population (Taherdoost, 2016). The sample must be representative of the population from which it is drawn and it must have a good size to warrant

statistical analysis. The main function of the sample is to allow the researchers to conduct the study on individuals from the population so that the results of their study can be used to derive conclusions that will apply to the entire population (Haque, 2010; Taherdoost, 2016). Research requires that if the entire population cannot be studied, some members of the accessible population are selected and studied; and generalisations and inferences are made about the population. This subset is known as a sample and it is carefully chosen from the accessible population. The technique for selecting the sample is the sampling procedure (Cohen et al., 2011). Different sampling procedures exist (Creswell, 2018); however, they are grouped into two basic methods namely: probability and non-probability techniques. Probability sampling involves random selection allowing you to make strong statistical inferences about the whole group. Non-probability sampling on the other hand is based on convenience, or other criteria, allowing you to easily collect data.

In the qualitative approach, the purposive sampling technique which is a non-probability sampling technique was employed in selecting the participants. Purposive sampling is the type of sampling in which the researcher uses his/her judgement regarding the selection of participants from whom required information will be collected (Amin, 2005). The selection of the participants was purposively done to ensure that rich information about the sexual health and academic experience among female adolescents with visual impairment was obtained and to get a deeper understanding of the phenomenon. I perceived that there was a need to get respondents who would provide relevant information about their sexual and academic needs and therefore deemed it appropriate to fall on the target population. Even though

there is not any unanimity or oneness on the number of participants or respondents of sample size that is said to be adequate for a qualitative study, nonetheless, some renowned researchers give support to sample size adequacy for qualitative studies, whilst others argue in favour of data saturation (Mwita, 2022; Saunders et al., 2018). For instance, Morse and Chung (2003), propose 30 to 50 respondents to warrant reliable findings. Creswell (2002), recommends 15 to 20 in grounded theory studies. In this study, there was no pre-determined sample size for the qualitative approach because I wanted to gather the data until saturation was attained.

Saturation phenomenon was employed in the qualitative data collection procedure. This was achieved by interviewing the participants, listening to the audio recordings, transcription, and reading of the data generated daily until I got to the 14th participant when he realised no new information was been generated, and hence saturation had been attained. Saturation phenomena emanated from grounded theory where no predetermined sample size is known, however, the more and more participants are being interviewed it reaches a point where no new information is generated (Cooney, 2010). Saturation is used in qualitative research as a criterion for stopping data collection and/or analysis (Aiken, Dillaway & Mevs-Korff, 2015). Even though it emanates from grounded theory (Glaser & Strauss 1967), it now commands acceptance in a variety of qualitative research approaches. Indeed, saturation is frequently proposed as a necessary methodological component in such work. According to Fusch and Ness (2015), failure to reach saturation has an impact on the quality of the research conducted (Birks & Mills, 2015). Morse (2015), notes that saturation is the most frequently touted guarantee of

qualitative rigour offered by authors; whilst, Guest, Bunce, and Johnson (2006) refer to it as the *gold standard* by which purposive sample sizes are determined. Despite the above assertion, Strauss and Corbin (1998) argue that saturation should be concerned with reaching a point where additional data collection becomes 'counter-productive,' and where the 'new' does not necessarily add anything to the overall story or theory. Decisions about when additional data collection is unnecessary are frequently based on the researcher's perception of what they are hearing during interviews, and this decision can thus be made before coding and category development (Saunders et al., 2018).

On the other hand, the quantitative approach used the census method or the complete enumeration survey method where every one item or population for the study is selected for the data collection (Baffour & Valente, 2012; Brown, Abbott, & Smith, 2011). In this study, the entire female adolescents with a visual impairment from the five Inclusive Senior High Schools totalling 71 responded to the questionnaire. Female adolescents with visual impairment of age 10 and above who had an understanding of issues about sexual health and its related matters participated in the study.

Table 1: List of selected Senior High Schools

Name of Schools	**Number of FAVI**
Okuapemman SHS	24
Adidome SHS	11
Wenchi Methodist SHS	14
Wa SHS	10
Sirigu Integrated SHS	12
Total	**71**

Sources: Field data (2021).

Qualitative Data Collection Instrument

Qualitative data was gathered using a semi-structured interview guide (See Appendix B). When there is a need to obtain in-depth information on people's opinions, emotions, perspectives, and feelings, interviews are an effective process (Easwaramoorthy & Fataneh, 2006). Interviews are beneficial where the focus of investigation applies to challenges involving difficult questions and significant probing (McGrath, Palmgren, & Liljedahl, 2019). In reference to this, the researcher believed that issues bothering sexual health are treated with some circumspection in our part of the world, and this makes it difficult to talk about. This, therefore, requires an in-depth interview to be conducted to unravel the myths surrounding this issue, especially when it involves visually impaired individuals. Easwaramoorthy and Fataneh (2006), opine that face-to-face interview is appropriate when the target group can communicate orally more than they can communicate by written or telephone communications (for example, youth, elderly, or disabled people). To a larger extent, it would be more appropriate to use interviews when gathering data from the visually impaired as compared to other modes of data collection. In developing the semi-structured interview guide, literature on sexual health needs, academic experience, and socio-cultural norms were thoroughly reviewed. With the help of Google Scholar, and Harzing's Publish or Perish search engines, empirical literature was reviewed to aid the instrument development. The semi-structured interview guide consisted of five sections. Section A consisted of questions that elicited information on the sexual health needs of FAVI, likewise, Section B, gathered data on the effect of sociocultural norms on the sexual health of FAVI, furthermore, Section C

elicited information on the effects of sexual health on the academic experience of FAVI, Section D elicited information on the degree of impairment and sexual health, and finally, Section E elicited data on academic experience.

Quantitative Data Collection Instrument

The quantitative data collection was done with a self-developed questionnaire. A questionnaire is a research instrument consisting of a series of statements to gather information from respondents (Dell-Kuster et al., 2014; Roever, 2015). Questionnaires should always have a specific meaning relating to the study objectives, and it should be clear from the start how the results can be used (Dell-Kuster et al., 2014). A questionnaire provides a relatively cheap, quick, and efficient way of obtaining large amounts of information from a large sample of people (Kull, Ramsay & Williams, 2016). The questionnaire allows for the collection of quantitative data systematically, such that the data are internally reliable and coherent for interpretation (Nielsen, Kent, Hestbaek, Vach, & Kongsted, 2017). Despite the numerous advantages, questionnaire-based research has, it has been criticised for several reasons. Some researchers have criticised its superficiality and provision of a relatively 'thin' description of target phenomena (Dell-Kuster et al., 2014). Nevertheless, structured questionnaires were developed as the main data collection instrument for the quantitative approach. The subject of interest, that is, the knowledge level of sexual health is more of a latent variable and therefore cannot be seen or observed. That is, the sensitive nature of the subject and its related matters in our cultural setting for instance makes it more appropriate to use a questionnaire to elicit information from the participants. The questionnaire

also allowed a large number of adolescents to communicate their level of knowledge of sexual health.

Items generation is a key component of questionnaire development. Methods for the generation of items can be classified as deductive, inductive, or a combination of the two. Deductive methods involve item generation based on an in-depth and substantial literature review and pre-existing scales (Hinkins, 1995). Consequently, inductive methods rely on item development on qualitative information regarding a construct obtained from opinions collected from the target population. For example, focus groups, interviews, expert panels, and qualitative exploratory research methodologies (Kapuscinski & Masters, 2010). In this study, I employed the deductive method where I did an extensive literature review to assist in developing the quantitative data collection instrument (questionnaire). The questionnaire had two parts. The first section elicited information on the demographic data of the respondents (that is, age, class, programme of study, degree of impairment, and religious background), and the second section had statements on the knowledge level of adolescents on sexual health. Data generated from this section was used to answer research question one and two. Three respond categories format with 1= Yes, 0= No, 0= Not sure was used. (See Appendices A).

Pilot-testing of Data Collection Instrument

A pilot-testing of the scales was done at the Blind Unit of Ghana National College in Cape Coast to fine-tune the data collection instruments and appropriateness of the items for the main study. A pilot-testing is the first step of the entire research protocol and is often a smaller sample-sized study

assisting in planning and modification of the main study (Arnold, Burns, Adhikari, Kho, Meade & Cook, 2009; Thabane, et al 2010). However, some researchers believe that during a pilot-testing, you conduct the research study in its entirety (Eldridge et al., 2016; Lancaster, Dodd, & Williamson, 2004). Researchers become enlightened about the shortfalls of the procedures involved in the main study through the pilot-testing. This aids in the selection of the research method most suitable for answering the research question in the main trial. The school was chosen because the population had similar characteristics (i.e., Female adolescents with visual impairment, sex, class, and programme of study) as that of the selected schools for the main study. These participants' responses helped the researcher to fine-tune the data collection instruments for the actual study.

Reliability of Quantitative Instrument

Reliability is a measure of the consistency of measured values obtained in repeated measurements under the same conditions with the same measuring instrument (Lower, Newman & Anderson-Butcher, 2017). Reliability is not only a feature of the measuring instrument; it is also a feature of the measuring instrument's results. According to literature, the measuring instrument's reliability and validity are two essential features (Lower et al., 2017). A study conducted with a measuring instrument that lacks one or both of these features will not produce useful results. As a result, the measuring instrument used in the study must be both valid and reliable. The reliability estimate using Cronbach's Alpa (α) was .57, which is acceptable according to (Field, 2018). According to Kimberlin and Winterstein (2008), as cited in Ntim and Fombad (2021), Cronbach's alpha is the most commonly used method of measuring an

instrument's internal consistency. It was considered the best reliability tool because the author wanted to estimate the internal consistency of the instrument. Generally, Cronbach's alpha has a correlation coefficient ranging from -1 to +1. Thus, the closer the reliability coefficient to value 1 means the more reliable the test, while the closer the reliability coefficient value is to 0, the less reliable the test is.

To further strengthen the reliability of the instrument, item analysis was conducted. Whenever the items are poor, they lower the reliability coefficient. According to Bichi, Embong, and Mamat (2015), item analysis is a quantitative approach that helps to improve the quality of achievement tests. Accordingly, to ensure proper interpretation of the assessment results, the use of item analysis helped to identify problem items (that is, items that were too difficult and too easy, items that had zero and negative discrimination indices). Items with a coefficient above .70 were regarded as too easy whereas items of .30 were too difficult. These poor items were deleted (items 10, 11, 12, 14, 16, 17,18) to improve upon the quality of the assessment results. Hence, out of 29 items, data based on 22 items qualified for the analysis.

Validity of Qualitative Instrument

Validity is a key concept in research that hinges on how the data obtained are deemed accurate and honest. According to Johnson and Onwuegbuzie (2004) cited in Ntim and Fombad (2021), validity can be defined as the appropriateness of the interpretation, inferences, and actions made based on a test score. The validity is about ensuring the test measures what it intends to measure, especially for the particular group of people and context. Berg and Coetzee (2014), also emphasised that validity is the degree

to which the findings of the study accurately represent what happens in the real solution. Validity in quantitative research is more concerned with the accuracy of the measurements. Furthermore, it measures the truthfulness of the research results (Kothari, 2012). In this study, validity was used to test how well the instrument calculates its content to establish truthfulness. To ensure validity, the data collection instruments (questionnaire and semi-structured interview guide) were vetted by my supervisors, and a former Ph.D. student of the Population and Health Department of the University of Cape Coast for review since the study had to do with issues of sexual health. According to Gay, Mills and Airasian (2009), as cited in Vanderpuye (2013), validity can be determined by expert judgement.

Qualitative Data Collection Procedure

The study was carried out when the researcher obtained an Introductory Letter from the Department of Education and Psychology Studies as well as an Ethical Clearance from the Ethical Review Board (see Appendix C and D). Participating Schools were also contacted and permission was sought and duly granted. Based on ethical principles, the objective of the study was explained explicitly to the Heads of Schools and Departments where the actual participants for the study were. They were excited by the study and even requested that the findings of the study be sent to them upon completion.

The qualitative data was collected between the month of November and December 2021. With the aid of audio tape, interviews were conducted and recorded. In interviews, the researcher needs to record as much detail as possible (Krueger & Casey, 2002). In order to capture detailed sets of information during interviews, permission was sought and an audio recording

device was used to enhance the accuracy of the data collected. The data was collected primarily through interviews to explore sexual health and academic experience among female adolescents with visual impairment. The interviews were conducted in the English Language. They were done on the schools' premises. Where necessary, the researcher asked follow-up questions as a form of probing questions to elicit more detailed information and allowed the interviewees to clarify their responses (Burnell, 2007; Warren, 2001). Each interview session lasted between 15 to 20 minutes. Breakwell, Hammond, Fife-Schaw, and Smith (2006) pointed out that spending an equal amount of interview time with interviewees ensures consistency which contributes to the trustworthiness of the study. At the end of each interview session, the researcher played back the audio recordings for participants to ascertain the accuracy and authenticity of the information provided, and this process ensured the trustworthiness of the data. The participants confirmed that the content of the audio that was played back to them reflected what they said during the interview session.

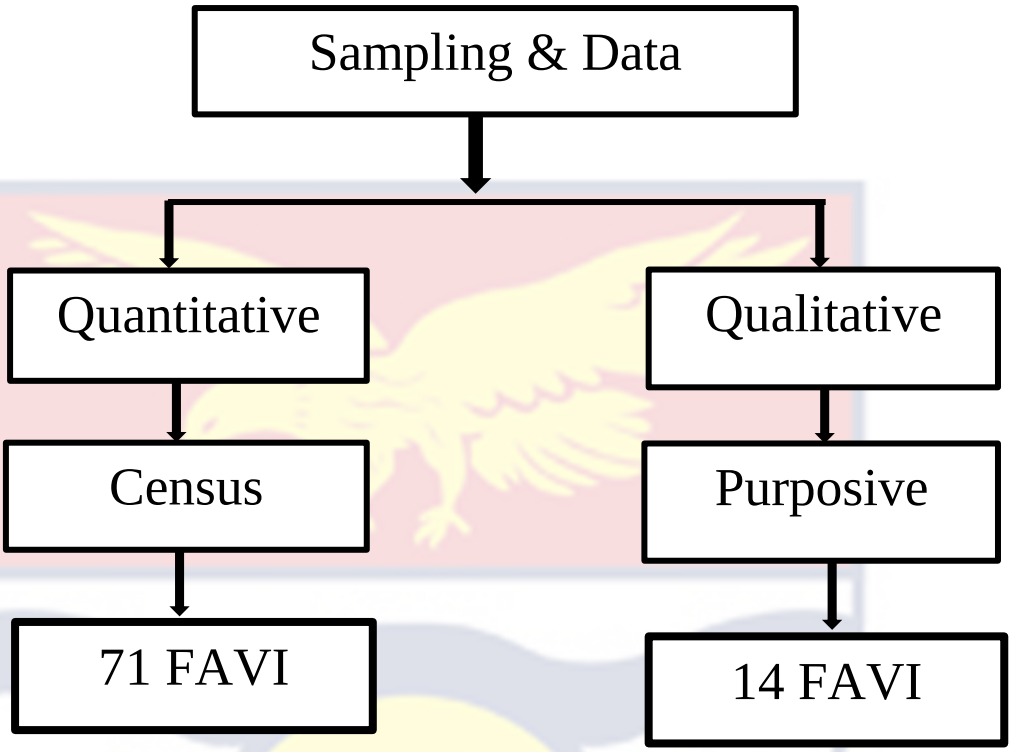
Quantitative data collection procedure

With the help of a trained field assistant, the quantitative data were collected within two weeks period. The research assistant was a first-degree holder in Bachelor of Education Social Sciences. I organised a two-day training session for the research assistant after he was hired. The training covered the research's goals, objectives, and rationale, as well as the sampling procedures for the study, the introduction and administration of the survey questionnaires, the pre-testing of the survey instruments to ensure that they

could be easily translated from English into the vernacular where necessary, and the field visit timetable.

After informed consent from the sample respondents was sought, together with the field assistant, we administered the questionnaire to the various schools of the participants. The data collection process employed an interviewer-administered questionnaire approach. An interviewer-administered questionnaire is completed in the presence of an interviewer. The interviewer may also verbally ask some or all the questions. Interviewer-administered questionnaire usually collects data from relatively uneducated, illiterate, and disabled individuals (Dias et al. 2009; Cook et al., 2003). Wu, Revicki, Jacobson, and Malitz (1997), and Mulhern et al. (2013) added that an interview-administered questionnaire is available to accommodate the preferences of physical impediments or literacy of the participants. In this case, the researcher and trained field assistant read out the items on the questionnaire for them to respond. Each questionnaire took approximately, 15 to 20 minutes to be completed. In all, 71 questionnaires were administered across the five Inclusive Senior High Schools. Amedahe and Asamoah-Gyimah (2014), asserted that the return rate to guarantee generalization should be at least 5% to 20% of the population size, in this case, there was a 100% return rate. All the 71 questionnaires were used in doing the analysis because they were all completely filled by the participants.

Figure 1: A flowchart showing a summary of sampling and data collection



Trustworthiness of the Qualitative data

The researcher must establish confidence in the findings of the research work for his/her readers (Lincoln & Guba, 1985). Qualitative researchers should establish that the research study's findings are credible, transferable, confirmable, and dependable. The trustworthiness of the qualitative study makes it valid and reliable. There are various ways to achieve trustworthiness in qualitative research: disclosure, auditability, interviewer corroboration, peer debriefing, prolonged engagement, negative case analysis, member check, confirmability, bracketing, etc are some of how researchers can achieve/ensure trustworthiness in qualitative research. In this study, the following means were employed to achieve Credibility, Transferability, Dependability, and Confirmability.

Credibility

Credibility in qualitative research means the confidence of the data. There are several ways in ensuring this in qualitative research. One way of ensuring or achieving credibility is through triangulation. That is using several or multiple sources of information or procedures from the field to repeatedly establish identifiable patterns. In this study, I employed both qualitative and quantitative data to ensure triangulation thereby helping to achieve credibility. Prolonged engagement was another strategy used to ensure credibility. The lead researcher and field research assistant were familiar with the cultural and social backgrounds of the study participants (Munea, Alene, Debelew, & Sibhat, 2022). Since the field research assistant had stayed or lived with some of the participants for quite a long time, he understood their culture, and it helped us in the way data was collected. Another way of achieving credibility in qualitative research is by peer debriefing. According to Lincoln and Guba (1985) debriefing is a process of exposing oneself to a disinterested peer in a way paralleling an analytical session and exploring an aspect of the study that might otherwise remain only implicit within the researchers' mind. Peer debriefing helps check to overemphasize and under-emphasize points in the study. Overemphasized point makes the research boring and monotonous. Peer debriefing helps examine under-emphasized points; there might be some points in your research that need more elaboration and examples to highlight. In this study, I, together with the field research assistant and another former Ph.D. candidate constantly discussed the progress of the work and shared information obtained among ourselves. From time to time, the report concerning the progress of the research was relayed to the supervisors, at least

once a month, and discussions were done on the way forward. Since my research work mainly had to do with sexual health, peers from the Department of Population and Health of the University of Cape Coast vetted the data collection instrument and made their inputs and recommendations.

Member checking as a method for examining the credibility of results was conducted. In this regard, participants receive data or results back to verify accuracy and fit with their experiences. In view of this, a sample of the transcribed data was brailed for the students to validity the responses they gave to the questions they were asked.

Dependability

When it comes to reliability, positivists use techniques to demonstrate that if the work were repeated in the same context, with the same methods, and with the same participants, similar results would be obtained. However, as Fidel (1993) and Abrams (2010), point out, the changing nature of the phenomena studied by qualitative researchers makes such provisions in their work problematic. Florio-Ruane (1991), emphasises how the investigator's observations are linked to the study's situation, arguing that published descriptions are static and frozen in the 'ethnographic present'. Lincoln and Guba (1985), emphasise the close relationship between credibility and dependability, arguing that in practise, demonstrating the former goes a long way toward ensuring the latter. This may be achieved through the use of “overlapping methods”, such as focus groups and individual interviews.

To address issues of dependability, the process within the study should be described in detail, thereby making it possible for future researchers to repeat the work, if not necessarily to gain the same result. This level of detail

also allows readers to assess the extent to which proper research practises were followed. In view of this, the research method employed in this current study was reported in detail, from research design through to data collection and analysis as captured in chapter three.

Transferability

The way a qualitative study's findings are transferable is called transferability (Mansour, 2013). Transferability provides the opportunity to compare several studies very effectively within one study which helps to provide a deeper, more complete understanding of the phenomenon (Willig, 2008). During the transferability phase, the study can be tailored to a specific setting. The researcher must provide detailed data for reviewers to grasp the study and evaluate its findings. Other researchers might also be able to contribute to the study (Morse, 2015). Transferability or applicability is a criterion of fittingness, showing that findings could be applied to other contexts and settings depending on the degree of similarity between the original situations to which it was transferred (Butina, 2015). This was ensured by the researcher's presentation of reports that provided sufficient details to other readers for assessment. That is a detailed description of study participants including demographic characteristics, a description of study setting as well as the phenomenon of interest so that the findings can be transferred across similar settings.

Confirmability

Confirmability indicates the degree to which the research findings can be confirmed (Bryman, 2006). The researcher records changes to the project and describes them, and in confirmability, the process validates them by

reviewing them with others. The researcher also ensures the validity of the findings by evaluating the data collection and analysis processes (Bryman, 2006). Furthermore, the confirmability of data (neutrality) is the degree of neutrality of the data, as well as the extent to which it is shaped by the respondents' opinions and perspectives (Bryman, 2006). Confirmability is concerned with establishing that data and interpretations of the findings are not figments of imagination, but clearly derived from the data. Therefore, data were checked and rechecked throughout data collection and analysis, all conclusions drawn are grounded in data. I ensured confirmability by transparently describing the vivid research steps taken from the start of a research project to the development and reporting of the findings.

Data Processing and Analysis Procedure

Data analysis in essence is a set of procedures or methods that can be applied to data that has been gathered to arrive at one or more sets of results (Ali & Bhaskar, 2016; Moon, 2019). In the view of Bryman (2006), qualitative data analysis is a rigorous process involving working with the data, organising data into manageable units, categorizing, comparing, and searching for patterns. It is a difficult task because qualitative research usually generates voluminous data as the researcher is found with many transcripts of verbatim accounts of what transpired in the interview questions (Babbie, 2010).

Thematic analysis was used in the study. Thematic analysis can be used to identify trends within and across data about participants' experiences, beliefs and perceptions, and habits and practices; an 'experiential' study that tries to explain what participants say, feel, and do (Kiger & Varpio, 2020). Thematic analysis can be used to analyse large and small data sets – from case

study research with 1 to 2 participants (Cedervall & Åberg, 2010) to large interview studies with 60 or more participants (Mooney-Somers, Perz, & Ussher, 2008)–and homogenous and heterogeneous samples. Virtually, any data type can be analysed, from widely used qualitative techniques such as interviews and focus groups, to emerging methods such as qualitative surveys and story completion (Braun & Clarke, 2013). Thematic analysis can be used for both inductive (data-driven) and deductive (theory-driven) analyses, and to capture both manifest (explicit) and latent (underlying) meaning. For instance, in the analysis of wisdom and knowledge, courage, humanity, justice, temperance, and transcendence, as core virtues of positive psychology, Holm used a theory-driven approach to thematically analyse the data. In contrast, Holmqvist and Frisén (2012), used an inductive approach to understand the experiences of adolescents with a positive body image, a virtually unstudied group. However, this study made use of inductive (data-driven) analysis to explore knowledge, socio-cultural norms, age, grade, and knowledge level of sexual health among female adolescents with visual impairment. The thematic analysis involves analysing and reporting patterns within data, and minimally organizing and describing the data set in rich detail (Braun & Clarke, 2006). According to Braun and Clarke, thematic analysis is not linked to any pre-existing theoretical framework and so could be used within different theoretical frameworks. To this effect, the thematic approach to qualitative data analysis by Braun and Clarke, (2006) guided the study. According to Braun and Clarke (2006), thematic analysis is a method for identifying, analysing, and reporting patterns within the data. Thematic analysis by Braun and Clarke (2006) has six phases which have been stated and described;

Familiarising yourself with data

The researcher needs to familiarise himself or herself with the data to the degree that he or she will know the depth and breadth of the information gathered. Immersion typically requires 'repeated reading of data and reading data in an aggressive way-searching for interpretations, patterns, and so on. It is appropriate to read through all the data set at least once before you start coding, as your ideas, and identification of possible patterns will be shaped as you read through. In view of this, the transcribed data was read and re-read so that I became familiar with the content of the data transcribed. Refer to Appendix E (a sample of transcribed data).

Generating initial codes

This phase involves the production of the initial data codes. Codes identify a data feature (semantic or latent) that appears to be of interest to the analyst and refer to the most basic segment or element of raw data or information that can be assessed in a meaningful way concerning the phenomenon (Fereday & Muir-Cochrane, 2006). Coding may rely to some degree on whether the themes are more data-driven or theoretical-driven. In the former, the themes may depend on the data, but in the latter, you may address the data with questions in mind (or the tenets of the theoretical framework) that you want to code around. At the initial stage of the analyses, Nvivo version 12 software was used in generating codes for the analysis. As part of the preliminary analyses, auto-coding was carried out with the help of the software. This was done to make the data manageable. The auto-coding mechanism is largely an open coding approach to data.

Searching for themes (Focused coding)

This phase re-focuses the analysis on the broader level of themes, rather than codes. It involves sorting the different codes into potential themes and collating all the relevant coded data extracts within the identified themes (Braun, Clarke & Hayfield, 2015). Once again, the Nvivo version 12 software guided the generation of the themes, however, the researcher did not solely rely on the themes generated by the Nvivo since such an act will not allow the researcher to immerse himself or herself in the data which defiles a basic principle of knowledge generation in qualitative inquiry.

Reviewing themes

This phase involves two levels of reviewing and refining your themes. Level one involves reviewing the level of the coded data extracts. This means you need to read all the collated extracts for each theme and consider whether they appear to form a coherent pattern (Braun & Clarke, 2006). I reviewed the major themes and sub-themes to ensure that the themes that could not be discussed alone were collapsed and added to similar ones. Through this process, the data was made clear and identifiable distinctions were made between themes. At the end of this phase, I got a fairly good idea of what the different themes were, how they fit together, and the overall story they tell about the data. Through this process, five themes and 28 subthemes were arrived at for the qualitative data analysis. Thus, data from research question three gave me four (4) subthemes; research question four had three themes; research question five (5) had three subthemes; research question six (6) gave six themes, and research question seven (7) had twelve subthemes. In all, I had

28 subthemes for the analysis and reporting. Refer to Appendix F (Coding Scheme).

Defining and naming themes

At this point, you define and further refine the themes that you will present for your analysis, and analyse the data within them (Braun & Clarke, 2006). By 'define and refine' it means identifying the 'essence' of what each theme is about (as well as the themes overall), and determining what aspect of the data each theme captures. It is important not to try and get a theme to do too much, or to be too diverse and complex (Braun & Clarke, 2006). I made sure that the names that were given to the subthemes were catchy and immediately give the reader a sense of what the theme is about.

Producing the report

According to Braun and Clarke (2006), writing the report is an integral part of the analytic process. The goal of writing a thematic analysis, whether for publication or research assignment, or dissertation, is to tell the complex narrative of your data in a way that convinces the reader of the merit and relevance of your analysis (Braun & Clarke, 2006). The study must provide a succinct, descriptive, rational, non-repetitive, and fascinating account of the narrative that the data tell within the framework of the analysis. I wrote the final report after I reviewed themes that made meaningful contributions to answering the research questions. To the best of my ability, I wrote the report devoid of any personal sentiment and observer expectancy effect. I depended on the response that participants gave and I discussed the issues as they were. To identify and refer to participants' interviews; participants were given special labels, FAVI 1, FAVI 2, FAVI 3, etc.

Quantitative data analysis procedure

Research question one consisted of both closed and open-end items. The close-ended items were analysed quantitatively whilst the open-ended were analysed qualitatively. Data collected on research question one that is, the knowledge level of adolescents with visual impairment on sexual health was analysed using mean, standard error of the mean, standard deviation, frequencies and percentages. The scoring of the close-ended items was yes=1, no=0, and not sure=0. "not sure" was assigned zero (0) because it does not depict respondents' certainty about sexual health knowledge or false responses about their sexual health knowledge. It was used to reduce guessing or forcing a participant to pick false responses.

The mean was used as norm reference criterion to group the students in below average (BA) and above average (AA). Using the mean together with its standard error. Mean =6.3239, Standard Error= .26754. Therefore,

6.3239 + .26754 = 6.05636

6.3239- .26754 = 6.59144

The lower bound of the mean was 6.05636 and the upper bound was 6.59144. Therefore, any score below 6.05636 was below average (BA) and any score above 6.59144 was above average (AA). The frequency and percentage were used to describe the number of students who had above average and below average.

Data on research question two were analysed using independent t-test and One way ANOVA. Independent t-test because based on research question two some of the independent variables had two levels (Religious background, class, degree impairment). One-way ANOVA because one of the independent

variables as identified in the research question had three levels (Age). According to Field (2018), to examine the influence of an independent variable that has two or more than two levels on a dependent variable, one has to use an independent t-test or ANOVA respectively.

Ethical Consideration

It is crucial to adhere to ethical procedures to protect the dignity, rights, and welfare of research participants. The philosophy of ethics is rooted in the ancient Greek philosophical inquiry of moral life. It refers to a system of principles that can be applied to make changes in one's perspective of choices and actions (Johnstone, 2019). It is said that ethics is the branch of philosophy that deals with the dynamics of decision-making concerning what is right and wrong. Scientific research work, like all human activities, is governed by the individual, collective and social values. Research ethics include requirements on the workday, the protection of subjects' dignity, and the publication of research information.

To ensure that ethical issues are addressed, ethical clearance was sought from the Institutional Review Board of the University of Cape Coast (See Appendix C). An introductory letter was also issued by the Department of Education and Psychology studies (See Appendix D). A consent form was also developed for the participants to either sign or thumbprint. In this study, since the participants were visually impaired, they were guided by their respective Heads of Department to thumbprint the informed consent (see Appendix G).

To minimise the risk of harm, that is, physical, emotional, psychological, privacy, and anonymity of the respondent, it was necessary to

observe some protocols. In terms of physical harm; since the target population were visually impaired the researcher ensured that the data collection was done in convenient places such as the Assembly halls and other open places on the school premises. Emotional and psychological states were ensured by minimising the sensitivity aspect of the study. The researcher also assured the participants that the findings of the study were for academic purposes. The participants were also assured that the study would benefit them when the findings of the study are published. It is anticipated that the publication of the findings would help Cooperate organisations, Non-Governmental Organisation, and Civil Societies to know the real state of sexual health and academic experience of FAVI in Ghana. In gathering the qualitative data, participants were duly informed before audio recordings were done. After each interview, the audio recordings were played back to the participants to ascertain if that's truly their voices. The participants were assured that they have every right to withdraw from participating in the study at any time.

Participants were also assured of proper management and storage of the data. The length of time or period you store data depends on the nature of the research project. Most researchers store their data for at least five years after final publication (Wright et al. 2020). I intend to keep the data for five years before it will finally be discarded.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter mainly focused on the results and discussions of findings, however, as a convention, the demographic characteristics of participants were captured first. This study employed both a questionnaire and a semi-structured interview guide to gather the data. In all, 71 questionnaires were administered to the respondents for the quantitative data, however, since the respondents were 71, there was 100% return rate. On the other hand, with the saturation phenomenon, 14 participants were interviewed for the qualitative data.

Background Information of the Respondents

In order to have a broad understanding of the different characteristics of the population being studied it was imperative to capture the demographic characteristics of respondents. The characteristics of the respondents, which are discussed in this chapter include their age range, class, programme of study, degree of impairment, and religious background.

Table 2 presents the analysis of the results of the age range of the 71 respondents.

Table 2: Age range of Respondents

Age-range	N	%
10-14	8	11.3
15-19	20	28.2
20-24	43	60.5
Total	**71**	**100**

Source: Field Data (2021).

The results in Table 2 show that 8 (11.3%) of the respondents (n= 71) were between 10-14 years of age, while those who are between 20-24 years constituted 43 (60.5%) of the total respondents. This shows that the majority of the female adolescents with visual impairment in the five inclusive senior high schools were in the 20-24 age range. This age range according to WHO constitutes the sexually active group.

Table 3 shows the results of the various class of respondents.

Table 3: Class

Class	N	%
Form 1	26	36.6
Form 2	45	63.4
Form 3	-	-
Total	**71**	**100**

Source: Field Data (2021).

Table 3 shows that respondents from form 1 constituted 26 (36.6%) of the total respondents while the respondents from form 2 constituted 45 (63.4%) of the total respondents.

Table 4 presents the results of the programme of study of the respondents.

Table 4: Programme of study

Programme of study	N	%
General Arts	71	100
Business	-	-
Science	-	-
Home economics	-	-
Total	**71**	**100**

Source: Field Data (2021).

Table 4 shows that all 71 (100%) respondents offered General Arts. This implies that students with visual impairment study only General Arts

courses. It seems the other programmes were unfriendly to the visually impaired. Perhaps, it could be attributed to the fact that the other programmes involved computation and actual activities which required the use of vision.

Table 5 presents the analysis of the results of the degree of impairment of the respondents.

Table 5: Degree of impairment

Degree of impairment	**N**	**%**
Partially sighted	31	43.7
Total blindness	40	56.3
Total	**71**	**100**

Source: Field Data (2021).

Table 5 shows that 31(43.7%) of the respondents were partially sighted while 40(56.3%) of the participants were totally blind. The researcher anticipated that one's degree of impairment has dire consequences on access to sexual health and for that matter healthcare in general.

Table 6 shows the religious background of the respondents.

Table 6: Religious background

Religious background	**N**	**%**
Christianity	45	63.4
Islamic	26	36.6
African Traditional	-	-
Others	-	-
Total	**71**	**100**

Source: Field Data (2021).

Table 6 indicates that 45(63.4%) of the respondents were Christians while 26(36.6%) were from the Islamic fraternity. The majority of the respondents who were Christians is a reflection of the larger population and its statistical breakdown of religious bodies in the country.

Preliminary Normality Testing

Before the analysis of the data, the normality assumption, which is fundamental to all parametric assumptions was tested. The Shapiro-Wilk Test was used since it is more appropriate for small sample sizes (< 50 samples), but can also handle sample sizes as large as 2000 (Royston, 1992; Shapiro & Wilk, 1965; Thode, 2002). It has become the preferred test because of its good power properties (Mendes & Pala, 2003). For this reason, the Shapiro-Wilk test was used to assess the normality of the dependent variable across the levels of the independent variable. Details of the results are presented in the tables 7.

Table 7: Results of Normality Test

		Shapiro-Wilk		
	Age range	**Statistic**	**Df**	**Sig.**
Twelve items	10-14	.926	18	.164
	15-19	.949	26	.223
	20-24	.927	27	.059
	Class			
	Form 1	.939	35	.054
	Form 2	.952	36	.124
	Degree of impairment			
	Partially sighted	.938	36	.045
	Totally blindness	.960	35	.230
	Religious background			
	Christianity	.937	47	.014
	Islamic	.945	24	.207

Source: Field Data (2021).

Table 7 shows the Sig. value of the Shapiro-Wilk Test was greater than 0.05. This means that the dependent variable was normal across the levels of the independent variable (that is, the age range 10-14, 15-19, and 20-24). This implies the data is normally distributed.

Furthermore, considering the class of participants, the Sig. value of the Shapiro-Wilk Test was greater than 0.05. This means that the dependent variable was normally distributed across the levels of the independent variable (that is, Form 1 and Form 2). Not all, the degree of impairment showed that the Sig. value of the Shapiro-Wilk Test was greater than 0.05. This means that the dependent variable was normally across the levels of the independent variable (that is, partially sighted and total blindness). It could therefore be said the data is normally distributed.

In addition, the Sig. value of the Shapiro-Wilk Test was less than 0.05 for the Christianity group, however, the Sig. value for the Islamic group was greater than 0.05. This means that the dependent variable was normal for the Islamic group, but not normal for the Christian group. However, the data distribution for the Christianity group could be assumed normal per visual examination of the Q-Q plots. This is because from the plot (see Figure 1), all the scores are closer to the straight line.

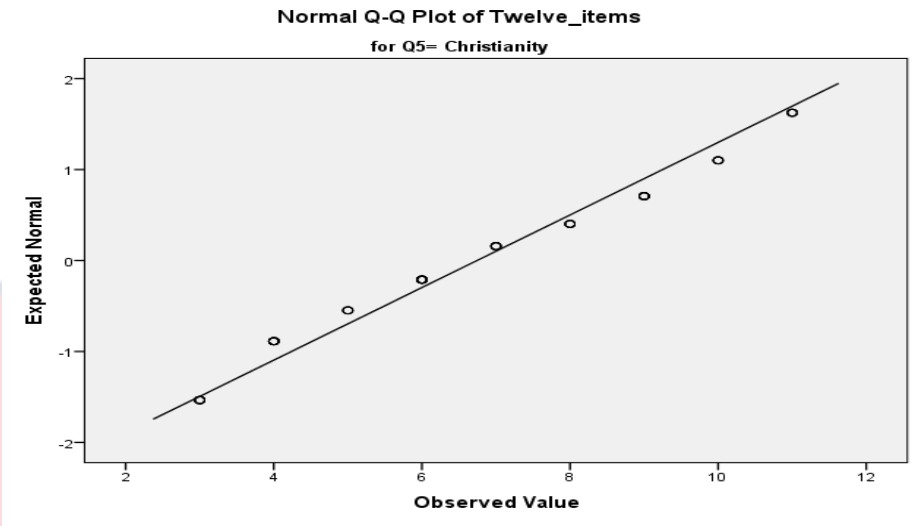


Figure 2: Q-Q Plot for the Christian Group.

Research Question One: What is the knowledge level of female adolescents with visual impairment on sexual health?

Research question 1 sought to find out the level of knowledge of the respondents about sexual health. The respondents were asked to respond where questions were being read to them by responding yes, no, or not sure. The mean of the scores was used as a criterion score to categorise respondents into above average and below average in terms of their level of knowledge of sexual health.

Table 8 depicts the results on the descriptive statistics of level of knowledge of sexual health.

Table 8: Descriptive Statistics of FAVI Knowledge in Sexual Health

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Knowledge of sexual health	71	6.3239	.26754	2.4711

Source: Field Data (2021).

Table 9: Sexual Health Knowledge of FAVI

	Frequency	Percent
Below Average	41	58
Above Average	30	42
Total	**71**	**100.0**

Source: Field Data (2021).

Concerning the knowledge levels of sexual health of the respondents, from Table 9, 41 (58%) of the respondent had scores below average, while 30 (42%) had scores above average. This indicates that the knowledge most of the respondents had on sexual health was below average. Since the scores for the participants on each of the tests were assumed normal, further analysis was conducted using the coefficient of variation (CV) to determine whether the students' knowledge of sexual health was homogeneous or heterogeneous. The achievement of the participants on the knowledge of sexual health instruments could be described as heterogenous computing the coefficient of variation by the formula CV = (SD/M)100**.** All CV values for the distribution of scores above the criteria of 33% mean that the group is heterogeneous, and those below the criteria suggest the group is homogeneous. Thus, the mean of 6.32 and standard deviation of 2.47 gives a CV of 39.08%. Observing the respective mean and standard deviations obtained based on the students' knowledge scores on sexual health, the performance of the students could be described as heterogeneous. This means that the students possess different levels of sexual health knowledge. Since there were different groups there was the need to investigate how their demographic variables (age, class, degree of impairment, religious background) were contributing to such observation.

Analysis of open-ended data of research question one

To further understand what could be the possible reasons accounting for the below-average level of sexual health knowledge among female adolescents with visual impairment, further analysis was done with the data generated from the open-ended questions. The open-ended questions were analysed qualitatively after the responses from the participants were coded, and themes generated. Five themes were derived for analysis and discussion. The participants were labelled as Participant 1, Participant 2, and others.

Knowledge about sexual health

The participants were asked about their understanding of sexual health. A series of explanations were given. However, the majority of the participants were of the view that sexual health meant having sexual intercourse. A participant had this to say…*sexual health to me means a man and woman having sexual intercourse. It is through this that babies are born* (**Participant 1**). Another participant was of a similar view when she said…*sexual health is about having an affair with a man. What I mean is sleeping together, and having sexual intercourse* (**Participant 2**). Departing from these submissions by some participants, a participant was of the view that *sexual health is being free from sexually related diseases such as HIV/AIDS, Gonorrhoea, Syphilis, and Chlamydia (***Participant 4)**.

The understanding of sexual health appeared to be limited only to mean having sexual intercourse and being free from sexually transmitted diseases. The definition of sexual health as understood by the respondents was limited to having sexual intercourse, however, the meaning of sexual health goes

beyond sexual intercourse as understood by female adolescents with visual impairment.

Knowledge of causes of sexually transmitted diseases

Concerning their views on sexual health knowledge, it emerged that they had different perspectives on various understanding of the causes of sexually transmitted diseases. A participant opined that; *having unprotected sexual intercourse can lead to sexually transmitted diseases*. Another participant said; *if you have sexual intercourse with an infected person, you can get sexually transmitted diseases* (**Participant 3**). Even though the participants knew about sexually transmitted diseases it was limited. By implication participants' knowledge of the causes of STDs was limited to sexual intercourse.

Knowledge on masturbation

Participants shared their knowledge about masturbation. A participant had this to say; *on religious grounds, masturbation is not a good act. It's evil for anyone to indulge in masturbation. I think it's evil* (**Participant 2**). Another participant said *with masturbation you will not get an orgasm. I know orgasm is what one gets when you have sexual intercourse with a male partner* (**Participant 4**). *It can also lead to sickness (health) and could result from engaging in masturbation* (**Participant 6**). Again, the information given by the participants was skewed towards only the negative effect which to some extent could be regarded as limited knowledge about masturbation. This could intend affect the sexual health knowledge as portrayed in the first part (quantitative data) of the results.

Teenage pregnancy prevention

One of the themes was the prevention of teenage pregnancy. Various views were given by the participants amongst them is; *Teenage pregnancy can be prevented through abstinence from sexual intercourse. It is the best method that as female students we can stay without getting pregnant* (**Participant 3**). Another, participant reiterated that… *without sexual intercourse, there would be no teenage pregnancy* (**Participant 9**).

Free from sexual coercion

On when and under what circumstances sexual acts take place, they shared their views on how and when sexual intercourse should occur. A participant said; that *a person should not be forced or coerced into sexual acts in any form* (**Participant 8).** Another participant added: *you agree to have sexual intercourse when you want it. Sexual intercourse should be by choice and not by force. It must be agreed upon before you can have an affair with anyone* (**Participant 7**).

From the above, it may be said that FAVI knew about sexual health. They knew about sexual health (sexual intercourse), causes of sexually transmitted diseases, masturbation, teenage pregnancy prevention, and ways of avoiding sexual coercion. However, their knowledge was limited, looking at the superficial understanding of the concept of sexual health when they were asked to give the meaning of the concept of sexual health. This buttresses the results of the close-ended part of research question one which revealed below-average knowledge of sexual health.

Research Question Two: What is the influence of demographic characteristics (age, class, degree of impairment, and religious background) on sexual health knowledge?

Age Range and Sexual health knowledge

Further analysis was done to ascertain the influence of the demographic characteristics of participants on sexual health knowledge. For instance, I wanted to know how the age range of participants influenced sexual health knowledge. That is, to find out if FAVI growth in terms of chronological age determined how much knowledge she possesses. ANOVA was used to determine the age range of participants and how it influences sexual health knowledge. The ANOVA was used because the age range was categorised into three (ie. 10-14, 15-19, and 20-24).

Table 10: ANOVA results for Age range

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	91.415	2	45.708	9.085	.000
Within Groups	342.134	68	5.031		
Total	433.549	70			

Source: Field Data (2021).

The results from Table 10 showed that there was a statistically significant difference among age groups (10-14, 15-19, and 20-24) and sexual health knowledge as determined by one-way ANOVA $F(2,68) = 9.085$, $p = .000$). This means that participants knowledge of sexual health was dependent on their age groups. There was the need to run a post hoc analysis using Tukey due to the significant nature of the results.

The post hoc analysis results are presented in Table 11;

Table 11: Post-hoc Analysis for Age groups

(I) Age range	(J) Age range	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
10-14	15-19	-1.65812*	.68778	.048	-3.3061	-.0101
	20-24	-2.90741*	.68255	.000	-4.5428	-1.2720
15-19	10-14	1.65812*	.68778	.048	.0101	3.3061
	20-24	-1.24929	.61633	.113	-2.7261	.2275
20-24	10-14	2.90741*	.68255	.000	1.2720	4.5428
	15-19	1.24929	.61633	.113	-.2275	2.7261

Source: Field Data (2021).

The results in Table 11 show that the sexual health knowledge level of FAVI within the age group 10-14 was statistically significant from those within the age group 15-19, and 20-24. That is, a participant within the age range of 10-14 possessed a low level of sexual health knowledge as compared to participants within the age range of 15-19, or 20-24. Moreover, the sexual health knowledge of those within the age group 15-19 was not statistically significant from those within the age group 20-24. This means that the sexual health knowledge of participants within the age range of 15-19 was the same as the sexual health knowledge of participants within the age range of 20-24.

Table 12: Summary statistics for the t-test

		N	Mean	Std Deviation	Std. Error mean
Religion	Christianity	47	6.7447	2.50624	.36557
	Islamic	24	5.5000	2.28416	.46625
Class	Form 1	35	6.2000	2.57591	.43541
	Form 2	36	6.4444	2.43128	.40521
Degree of impairment	Partially sighted	36	6.3611	2.57630	.42938
	Total blindness	35	6.2857	2.43228	.41113

Source: Field Data (2021).

Table 12 is an independent t-test that was conducted to test the mean difference between the respondents' mean score on knowledge of sexual health and the standard score.

Religious background and sexual health knowledge

Pertaining to the influence of a religious group that is whether Christianity or Islam on the sexual health knowledge of female adolescents with visual impairment, an independent t-test was used to analyse the data in order to establish the influence.

Table13: Level of sexual health knowledge across religious background

			Religious Background Equal variance assumed	Equal variance not assumed
Levene's Test for Equality of Variance	f		.785	
	Sig		.379	
t-test for Equality of Means	T		2.038	2.101
	Df		69	50.440
	Sig.(2-tailed)		.045	.041
	Mean Difference		1.24468	1.24468
	Std. Error Difference		.61077	.59248
	95%Confidence Interval of the Difference	Lower	.05813	.05727
		Upper	.64187	.64273

Source: Field Data (2021).

The results in Table 13 indicate that the religious background (Islamic and Christianity) of participants had a statistically significant difference in sexual health knowledge, as shown by the Independent t-test, t(69)=2.038, p=0.045.

That is, those within the Christian group possessed a high level of sexual health knowledge as compared to those within the Islamic group.

Class of participants and sexual health knowledge

I sought for information on the influence of FAVI class (forms 1 and 2) on sexual health knowledge. That is to know whether someone in Form 1 class possessed a higher level of sexual health knowledge than someone in Form 2 class and vice-versa. An Independent t-test was used to analyse the data gathered on this demographic variable.

Table 14: Level of sexual health knowledge across class of participants

		Class of participants	
		Equal variance assumed	Equal variance not assumed
Levene's Test for Equality of Variance	f	.357	
	Sig	.552	
t-test for Equality of Means	T	-.411	-.411
	Df	69	68.491
	Sig.(2-tailed)	.682	. 682
	Mean Difference	-.24444	-.24444
	Std. Error Difference	.59430	.59479
	95% Confidence Interval	-1.43004	-1.43118
	Lower of the Difference	.94115	.94229
	Upper		

Source: Field Data (2021)

The results from Table 14 found that the class of participants (form 1, and form 2) had no statistically significant difference in their sexual health knowledge as shown by the Independent t-test; t(69)= -.411, p=0.552 on Table

14. This means a participant in Form 2 does not have more sexual health knowledge than a participant in Form 1 and vice versa.

Degree of impairment and sexual health knowledge

Similarly, I explored the influence of FAVI's degree of impairment (partially sighted and total blindness) on sexual health knowledge. That is, I wanted to know if a FAVI is partially sighted, would she have more sexual health knowledge than the one who is totally blind and vice-versa. Again, the Independent t-test was used in analysing the data that was gathered.

Table 15: Level of sexual health knowledge across degree of impairment

		Religious Background	
		Equal variance assumed	Equal variance not assumed
Levene's Test for Equality of Variance	f	.195	
	Sig	.660	
t-test for Equality of Means	T	.127	.127
	Df	69	68.942
	Sig.(2-tailed)	.900	. 899
	Mean Difference	.07540	.07540
	Std. Error Difference	.59496	.59447
95% Confidence Interval	Lower	-1.11152	-1.11056
	Upper	1.26231	1.26135

Source: Field Data (2021).

From Table 15, the results showed that the degree of impairment (partially sighted and total blindness) had no statistically significant difference in sexual health knowledge, $t(69)=.127$, $p=0.660$ as depicted on Table 15. This implies a participant who is partially sighted is not more knowledgeable in sexual health than a participant who is totally blind and vice-versa.

Research Question Three: What are the sexual health needs of female adolescents with visual impairment?

The objective of the study was to ascertain the sexual health needs of female adolescents with visual impairment. In this regard, I explored the specific sexual health needs of female adolescents who are visually impaired. Specifically, information on how they kept themselves safe from contracting sexually transmitted infections if the Special Schools did organise a forum on how to manage themselves during menstruation, and how effective School Counsellors were in educating them on the developmental changes. If they needed information on how to prevent sexually transmitted diseases, did they require School Counsellors to educate them on developmental changes as a group? Did they have a need pertaining to how they should keep themselves clean during and after menstruation?

Nvivo software was used to generate the themes for the analysis. In all, six themes were generated. These were: Need for school counsellors; avoiding sexually transmitted diseases; menstrual needs; menstrual kits; contracting diseases; and school girls. However, some of the themes were similar and were therefore collapsed to form a single theme. This, therefore, gave three themes; school counsellors, the need for menstrual kits, and contracting diseases.

Need for School Counsellors

Issues bothering on sexual health for visually impaired adolescents to some extent could be assisted by school counsellors. Analysis of the transcripts reviewed the critical role of school counsellors to adolescents with visual impairment.

A participant had this to say about the school counsellors:

> *… I learned if you have an issue you will have to go to them and talk to them. That is why maybe they do not tell us things that are about sexual health and academic progress* (**FAVI 6**).

Another participant reiterated the significant role that school counsellors play in providing information about sexual health. She affirmed earlier submission that they have school counsellors and that they have been giving them education on their needs that center on academic and sexual health.

> *Yes, yes, they do. Awwww they have been saying we should keep ourselves well so that we will get a good husband to marry in the future why because when you engage yourself in those acts, you might get pregnant and you will give birth and you will not be able to continue your education so we need to keep ourselves* (**FAVI 8**).

A participant said that since she came to the school, she has never seen nor had any contact with any school counsellor for assistance.

> *Sir, since I came to school here, no. I do not even know we have counsellors here. It is our teachers we know. They are always with us here on campus. If there is anything you need, they are those we mostly contact* (**FAVI 12**).

Avoiding Sexually Transmitted Diseases (STDs)

It emerged that issues about what could lead to one contracting STDs and possible means through which they are protected were mentioned by participants.

A participant shared her view on how to avoid STIs….

> *…using condoms will prevent you from contracting STIs and condoms are the only thing I know. I heard it in the house from my friends. Now I know that if you want to have sex with a man you have to tell the man to protect himself because you can get pregnant and if he is having HIV or something it will not be easy for you to get it* (**FAVI 4**).

In a similar vein, another participant's verbatim statement is as follows;

> *They say to avoid sexually transmitted diseases; we must avoid sleeping with men. So, we also do not go in for men sleeping with us. Mostly I do hear that we should stay away from men that is the only way to stay safe from sexually transmitted diseases* (**FAVI 5**).

In response to whether they are given information on how to protect themselves from contracting sexually transmitted diseases, a participant had this to say:

> *Sir, anytime I go home my parents will advise me to stay away not to get those diseases, and anytime I am coming to school too they advise me. It has to help me because how they talk to you, yourself you feel like if I do this, this and that will happen to you. Like in advising you, they put some sort of fear in you so even when you are doing that and you think of what they told you, you will not do it* (**FAVI 14**).

The use of condoms, and abstinence from sexual intercourse with men ensured FAVI were prevented from contracting HIV/AIDS, and unwanted pregnancy. This was narrated by the participants of the study.

Menstrual needs

To effectively manage menstruation, female adolescents require access to several menstrual health. A participant narrated that a girls' club in her school organized a forum to discuss issues that bother on menstruation. Excerpts from her comments are captured below:

> *We have a girls' club so when we meet Wednesdays, we discuss we ladies, how to dress when we menstruate, and how to keep ourselves so that we will not stain ourselves a lot. The girl's club is a club that is instituted by the school. Sometimes they do invite those nurses at the hospital to come and talk to us* (**FAV1 2**).

A participant said she has been fed enough information on menstruation in that she is very aware that once she is in her menstrual period, she cannot have sexual intercourse with any man.

> *Sir during our menstruation period, you cannot go and take a guy to have sex or do something with that guy. You must take care of yourself after your menstruation period then you can go and have a date with the guy or something like that. Yes please, these are what they tell us during such forums* (**FAVI 3**).

It came out from the participants that one needed to change her menstrual pads regularly to avoid being contaminated or soiled by the flow of blood. One of

the participants said that washed-under wares should be dried in an open place to avoid germs.

A participant had this to say:

> *Yes, they tell us that some people flow too much and others too do not flow much so if you know that you flow much then you need to have gotten enough pad to change as and when you are full. And during this period, you have to regularly wash your things and dry them where there is sunshine so that germs will die or you can even iron them* (**FAVI 4).**

It could be deduced from the narrative that sanitary pads were mostly used to control the flow of blood. One had to wash down more frequently to avoid being soiled. Overall, it could be inferred from the excerpts that participants need School Counsellors, information on contracting sexually transmitted diseases, and menstrual kits.

Research Question Four: What are the effects of socio-cultural norms on sexual health of female adolescents with visual impairment?

Culture plays a key role in determining one's sexual preference and the general issues surrounding sexual health. Sexual behaviours as well as access to sexual health and reproductive health services are influenced significantly by socio-cultural factors. The link between sociocultural factors and sexual health is well-recognised in the global literature but has received little attention (Kwankye et al., 2021). Insight into these factors from the perspective of female adolescents with visual impairment will go a long way to unravel their side of the influence of culture on sexual health. I therefore,

explored from the participants their perspectives on sociocultural norms on sexual health.

The analysis was done under three subthemes namely: family values; religious beliefs; and traditional beliefs/customs.

Family values

Family is said to be the first agent of socialization, which is the process of internalising the norms and ideologies of society in to younger generation. In exploring the possible sociocultural norms that influence sexual health, the participants were of the view that their families had a role to play in determining and educating them on issues about sexual health. A participant was of the view that even though in some situation, an adolescent female may present their boyfriend to their family, however, in her case, the family does not encourage that act. The verbatim statement of the participant is below…

> *…my family experience will not allow you to even think about taking your boyfriend home as compared to other families in Europe. You can't walk in with your boyfriend, even in my condition, my family will expect me to study and not to engage in anything sex* (**FAVI14**).

A participant corroborated an earlier assertion made about family values' influence on sexual health.

> *Family values influence sexual health rightly. I cannot even go out; you may have friends but you don't have the right to take a boyfriend or girlfriend. They will tell you that even if you have a girlfriend or a boyfriend you can't go further to have sexual intercourse with the person* (**FAVI 12**).

Another participant said her family values have influenced her sexual health. Also, the family served as a check on her life. She was been monitored on whatever she does, and to a large extent influenced her sexual health.

> *I can say it has influenced my sexual health because we the girls of the family mostly watch around, we don't just get out anyhow, we are always indoors and even before you will get out you have to go for permission, and you are given time to return. The only excuse you can make is when it rains* (**FAV I0**).

A participant was of the view that issues about sexual matters were not been discussed at their home. To her, her parents were of the view that issues related to sexual intercourse are not to be discussed with children. However, she indicated that not having that discussion has prevented her from trying anything related to sexual intercourse. Below is a verbatim quote from the participant…

> *...actually, we never talked about sexual things in the presence of children, if they will talk about that then children will not be among them. So, you too don't have any right to mention something about private organ parts. Sir it has affected us positively, sir for you not to be hearing those conversations, you will not try to engage yourself in such them. Sir you will not even try to do some of these things. Sometimes some of our parents' attitudes show us to also go and try and practice what they are talking about. Sir is not good though to talk to us*

about sex but they need to have a way to advise us to not involve in such things (**FAVI 6**).

Family values upheld by the parents of the participants greatly influenced their sexual health. Participants could not freely decide when to have a boyfriend with the fear of their parents' influence and perception of having a partner at their stage. Sociocultural factors such as family values play a significant role in the sexual health of FAVI.

Religious beliefs

Religious beliefs emerged as an influencing factor from the sociocultural factors on the sexual health of female adolescents with visual impairment. A participant recounted her experience from her religious perspective. She said in her religion, a woman would have to move to her husband's house while in her menses or prime age so that the husband can take care of her and finally get to marry her. This has served as a guide on her involvement and decisions on matters related to sexual health. A verbatim quotation is below:

In our religion they said, a woman must be in her husband's house before she starts her menses. So, you must leave your parent's house to your husband's house prematurely so that your husband will take care of you until you are mature for marriage and he marries you (**FAVI 4**).

A participant was of the view that her church's teachings on issues about sexual matters have influenced her positively. For instance, unwanted pregnancy, premarital sex, and masturbation have been condemned through

her church's teachings, and that has influenced her perception of sexual health. Her verbatim is below:

> *The church has been telling us to wait for the right time to come; is the best. They have been saying that if you use a condom, it protects you from getting pregnant, or STI diseases. They say premarital sex is not good. Like when you are young, you cannot have sex and if you are caught, they will call you and disgrace you. Masturbation is not good at all. I worship at Believers' worship Centre* (**FAVI 8**).

Even though the desire for sexual intercourse is biological at a certain stage of growth, another participant said that in her religion it amounts to sin to have sexual intercourse before marriage and that the mere thought of having sexual intercourse is sinful. Her verbatim statement in support of this is presented below:

> *As for my religion, it is a sin to have sexual intercourse before marriage. According to our belief if you even sit down and think of it you have done it and it is a great sin. So, you don't have the right to think about sex if you are not married. It is not advisable to watch those things because they say that the more you look at those things the more your concentration will be and where your concentration is, is how you act. So, watching pornographic move while you are not married will make you involve yourself in fornication* (**FAVI 7**).

To corroborate the earlier submission on the effect of religious influence on sexual health, a participant said her religion teaches that her body is a temple of God, hence sacred and cannot be used as a sexual intercourse medium. Excerpts from the participant are stated below:

> *The church tells us that our body is a temple of God so if you engage in premarital sex, it makes you like... I am a Christian. When you are a youth and you are not at the marriage age, you cannot engage in sex. This happens on Saturday when we have gone for a meeting and during the meeting, we talk about topics like this. They said to use condoms, practicing masturbation, and watching pornography is a sin. They said is a sin because using something like a condom is a form of abortion* (**FAVI 11**).

The words of a female adolescent with visual impairment suggest that in her religion, rigorous rituals are performed by a man or woman who has sexual intercourse before marriage. That is, special bathing and some recitations are made by such an individual. They believe it is a form of cleansing for such individual who engages in sexual activity before marriage.

> *Immediately you have sexual intercourse with a man or you have the thought of sexual intercourse, there are some rituals that you must do before you can pray so due to that... the ritual is some sort of bathing but it is a special form of bathing and the bathing is done by you the individual. This bathing is special because you must recite some words before you bathe, unlike normal bathing. Because of this thing we don't even*

> *think of going into any sexual affairs. This belief has influenced me both negatively and positively. Negatively, I cannot interact well with my male friends* **(FAVI 12**).

It could be seen from the narrations of the participants that religion had had positive influence on their sexual health. It prevented some of them from engaging in an illicit sexual affair which could have resulted in contracting STIs and having teenage pregnancies.

Traditional Beliefs/Customs

Tradition describes a group's beliefs and behaviours that are passed down from one generation to another. Traditional beliefs and practices across various societies especially in Africa play significant roles in one's sexual health and rights (Warria, 2018). Traditional beliefs and practices include sexual slavery, virginity testing, amongst others. Traditional practices are said to be a product of social norms which aim to uphold cultural ideas. As it emerged as a theme, the influence of traditional beliefs and practices were analysed.

> *Sir, in our culture, after your first menstruation; they will perform some rituals for you so they will continuously be telling you that you should not involve yourself in sexual intercourse. The ritual is about boiling an egg for you and praying for you after your first menstruation. We call the ritual 'Gbetowowo' by the Ewes but the Akans call it 'Bragoro'*(**FAVI 1**).

Another participant indicated that:

> *Sir, I am an Ashanti. My parents will stop taking care of me especially if I go and have an affair with a guy. They will say that because they want you to achieve your goal. White people have the freedom to show their boyfriends and girlfriends to their parents. Sir, what I know is that they can do whatever they want to do but, in my tradition, it is not acceptable* (**FAVI10**).

Another participant said that in her tradition, issues pertaining to sexual health are not discussed among children so it becomes an issue when they grow up.

> *In my tradition, if you are a kid, they do not educate us on issues bothering sex. Even if you are a child, you will not be willing to listen to it. So sometimes this does affect us because, by the time that you will be an adult, we will not know anything about sexual health* (**FAVI 6**).

From the above, it could be deduced that family values, religious beliefs, and traditional beliefs play significant roles in influencing the sexual health of female adolescents with visual impairment. Family values, such as open communication and trust, can create a supportive environment that fosters positive sexual health behaviours. Religious beliefs and traditional beliefs may create a barrier to open communication about sexual health, leading to negative outcomes such as shame and stigma. These beliefs may also restrict access to sexual health education and services, increasing the risk of sexually transmitted infections and unintended pregnancies. Therefore, it is essential for the society and educators to understand the cultural and social influences

on the sexual health of female adolescents with visual impairment. By addressing the underlying cultural and social factors that influence sexual health, healthcare providers and educators can better support female adolescents with visual impairment in making informed decisions about their sexual health. This can be achieved by providing culturally sensitive sexual health education, promoting open communication, and addressing any cultural or religious barriers that may exist. Overall, addressing the cultural and social factors that influence sexual health is critical in promoting positive sexual health outcomes for female adolescents with visual impairment.

Research Question Five: To what extent does the degree of impairment influence the sexual health of female adolescents with visual impairment?

The research question 5 aimed at eliciting data on how female adolescents' degree of visual impairment influences their sexual health. That is the research sought to explore how female visually impaired adolescents appreciate the physical beauty of the opposite sex, and how they express their likes towards them. The analysis was done under the following subthemes; expression of sexual feelings, appreciation of beauty, and sense of equality.

Expression of sexual feelings

Participants pointed out how they express their sexual feelings towards their counterparts, and even how they discuss their sexual urges with their parents or peers. Excerpts from participants are captured below:

> *… sometimes if I call my Daddy, I will tell him that today I feel like having sex and he will tell me to let's pray. Sometimes, the edge comes in three days or one week it will not stop. If I call my mum about the same thing. We*

> *sometime will pray but the sexual edge will not stop. But if I am in the house, I know how to control it. I just go to the bathroom to take a shower and sleep that is all* (**FAVI 11**).

A participant said that she can express her sexual feelings in that her condition does not necessarily make her different from others.

> *I can express my sexual feelings towards the opposite sex. Because of what I have been taught and what my parents have taught me I am well motivated to express my feelings. I am not deprived because if you are visually impaired does not mean you should be deprived of something.no.* (**FAVI 14**).

However, a participant acknowledged that even though she freely can express her sexual feelings, in the Ghanaian culture, a woman is not supposed to express her sexual feelings to the opposite sex. As a result, one's sexual right is curtailed by the basic philosophy of the Ghanaian tradition. A participant had this to say…*I can say or express my feelings. But you know in Ghana, a woman does not approach a guy she is interested in. So, I can say how I feel but wouldn't approach a guy* (**FAVI 9**).

Another participant said she can't express her sexual feelings towards the opposite sex because the boy or male counterpart may look down on her or think she is cheap.

> *Sir please I have not been having such feelings within myself. So, I don't see why I must go and tell somebody how I feel. The guy might even look down on me. He might even insult me and take me as cheap. I would not do that* (**FAVI 12**).

In addition to the suggestions made by earlier participants on the issue of expressing sexual feelings, a participant had this to say…

> *I cannot express my sexual feelings towards the opposite sex. I do not think it is necessary to do that. In our part of the world, society does not entertain a lady expressing her feelings toward a guy. It has never occurred to me to do that though* (**FAVI 6**).

The statements above show there were dissenting views on expression of sexual feelings. However, a greater number of the participants could express their sexual feelings to their parents and other but not the male students.

Appreciation of beauty

Concerning appreciation of one's beauty, it came to the fore from the data that the participants had their way of appreciating and determining their beauty. In their own words, participants had this to say:

> *I will hear from a person that this person is beautiful and I try to get closer to the person maybe if the person is the same sex with me then I try to feel the person and see how the body is. If the person is of a different sex, then that one I will not touch and feel him* (**FAVI 7**).

A participant's means of expressing or appreciating one's beauty was captured as:

> *…so sometimes we use the voice to determine whether the person is beautiful or not beautiful. The stature can also tell.*

> *I might not see you but I can use my hands to feel you. But the voice does a lot* (**FAVI 3**).

To corroborate the use of the voice in identifying whether one is beautiful or not, a participant said… *You get to appreciate one's beauty when you hold the person's hand or listen to the person's voice. And sometimes, we hear from other colleagues. With the voice, we look at the romantic nature of the voice* (**FAV1 9**).

In contrast to earlier submission, a participant said she is not interested in one's beauty because it was deceptive.

> *For me, I do not believe in appearance but rather in the inside or the attitude of the person. I don't want to depend on physical beauty much. Mostly that becomes deceptive. I am interested in what is people not their appearance* (**FAVI 8**).

Sense of equality

Regarding their conditions, that is being either partially sighted or totally blind, the research aimed at finding out if these participants (FAVI) felt any different as humans among their peers or friends, or colleagues. The majority of the participants said they did not feel any different from the rest despite their condition. They were not stigmatized on the grounds of their impairment. Some of the participants expressed how they feel among their peers. The feelings were as a result of various issues. For example, a FAVI had this to say:

> *I do not feel different from my colleagues because we are all human beings and what a friend is having, I am also having.*

> *What they can do, I can also do the same. Sometimes if I see somebody who is sighted let's take it like we are all here and I go and knock I feel like … first I use to ask myself why God too didn't give me the eyes but rather made me blind so that one… I can say that I always depend on the sight of others. Apart from that, I do not feel different* (**FAVI 1**).

FAVI 4 supported what FAVI 1 had said by saying that…

> *…because I am capable of doing everything as them is just the eye that cannot see all my other parts are working. I don't feel different at all. I don't feel different because I can do everything they can do.*

A participant echoed the specific activities that she can do likewise with her colleagues. She says whatever her friends can do she is also able to do. For example, FAVI 6 pointed out that: *I do not feel different though is not all the things that that sight can do `and I will be able to do. They can sweep, I can sweep; they can walk, I can also walk, what they have, I also have.*

Some participants were of the view that they only felt different when they are in class. This arises as a result of their inability to read and write as their sighted classmates and friends. However, in their choice of partner or deciding whom they would like to go out with they were not segregated on those grounds. This could be attributed to perhaps the confidence they have built.

> *... I felt different because when we go to the class and the teacher writes something on the board, I cannot see and the thought that comes to mind is the teacher is insulting me. Sometimes too, when you go for a program and someone is*

> *performing on the stage you cannot see the person so you don't go for programs or being in a crowd* (**FAVI 11**).

FAVI 12 confirmed the fact that they feel different when they are in the classroom setting.

> *Yes, maybe a little different when we are in a class like this, when we meet in Literature class as an example; when is time for us to read the stories, usually we don't even read we just sit down and they will be reading and we will be listening. We don't have anything to go through while they are reading. So, I feel different from them because they have an advantage over us. I feel discriminated against because so far as they have been able to provide them with a textbook, they should have done something for us so that we too can read in the class* (**FAVI 12**).

It could be deduced from the above that majority of the participants were of the view their impairment did not make them different. However, in the classroom setting, they were a little disadvantaged as a result of a lack of available resources. This probably explains why the participants were able to express their sexual feelings, and appreciation of beauty, as well as having a sense of equality among their peers.

Research Question Six: What are the academic experiences of female adolescents with visual impairment?

This research question sought to explore FAVI's academic experiences. Three major themes were generated from the data to guide the analysis. These are

classroom experiences, ways of facilitating learning, challenges in academic pursuit. In all, twelve (12) sub-themes emerged for the analysis.

Classroom experiences

There were mixed feelings when the participants were asked about their classroom experiences in the school. Five themes emerged under the classroom experience of FAVI. These are cordial relationships with teachers, delay in receiving feedback, difficulty in seeing from the board, delay in test taking, and stigmatization.

Cordial relationship with teachers

Participants indicated that some of the teachers were approachable and engaged them in the lessons. The students' said teachers were friendly to them and it made them feel comfortable. Excerpts from participants are captured below;

…some of the teachers like the visually impaired and as a result engage us during lessons by asking us questions. If we are able to answer them, they are happy because someone with no sight is answering their questions (**FAVI 3**).

Our relationship with some of the teachers is cool. Some of them are friendly to the extent of asking how well we feel as students with visual impairment each time they come into the classroom (**FAVI 4**).

Delay in receiving feedback

Participants narrated their experience of not receiving their examination results on time due to some of the teachers lack of special training to handle or teach students with visually impairment. One of the participants said…

> *…teachers who teach us are not special education teachers as in they don't know the braille, so when we write tests, exercises,*

> *and exams it becomes difficult for them to mark so normally we receive our papers very late as compared to our sighted colleagues* (**FAVI 1**).

It could be said that by recognizing the specific challenges faced by students with visual impairment and taking proactive steps to address them, the delay in receiving feedback can be reduced, to facilitate a more inclusive and supportive learning environment.

Difficulty in seeing from the board

In sharing their experiences, some of the participants were of the view that when notes are written on the board, they find it difficult to see. They would have preferred if the teachers had dictated the notes to help them write instead of writing on the board. A participant echoed this in her statement below:

I have a low vision so it is difficult seeing from the board but listening to I'm okay, I can hear whatever the teachers are saying (**FAVI 3**).

Delay in taking test

One of the challenges that participants appeared to experience in their academic work had to with delay in taking a test. As evidence, FAVI 4 reported that...

> *...when there is a test and it has to do with the whole class where everyone is involved, they will ask the regular students, thus the sighted ones to write their first, and then later they will find time for us to do ours which the teachers don't do and it affects us.*

Stigmatization

Stigmatization appeared to be a key concern for participants. Evidence of this is the comments participants shared in this regard. Excerpts from participants are captured below…*our sighted peers stigmatize us a lot because is a few of them who will like to come close and help us* (**FAVI 5**).

Some of them think visual impairment is contagious if they get closer to us so some of them hardly associate with us (**FAVI 2**).

Another participant supported the earlier submissions as…

> *The classroom sitting arrangement alone is enough to tell how they stigmatize us. Sometimes, the teachers make sure the visually impaired are paired with sighted peers during class but as soon as the teacher leaves the class, the sighted students move to a different place whilst we the visually impaired sit in a different group* (**FAVI 3**).

In summary, stigmatization had a dire consequence on FAVI stay in the classroom. It would be imperative to educate or sensitized sighted peers on the need to accept each other's difference for diversity and learning.

Ways of facilitating learning

This main theme explored the various strategies that FAVI used in their daily academic life to facilitate learning. Three sub-themes emerged for analysis. They are as follows: the use of recorders; having sighted peers read out notes; and library resources.

Use of recorders

The majority of the participants were of the view that they used recorders to record information in the classroom. A participant said:

> *Audio recorders help in taking notes, in some instances, some teachers will tell you not to write some of the things they say, but for us, everything from the beginning of the lesson to the end is captured, this helps when writing exams in an objectives part or something, so normally it's helpful* (**FAVI 2**).

Another participant indicated the following;

> *...I record the class session and put my earpiece inside whenever I'm coming to learn and I will listen to whatever the teacher taught. When you are about to record you let the teacher be aware that you are coming to record him/her, so the teacher is aware you are recording. Sometimes we even use our laptops to record, we send it to the class fully charged then we record* (**FAVI 2**).

Having sighted peers read out notes

Some of the FAVI described how some of their sighted peers read the notes to them. They were of the view that during their free period/leisure, their "readers'' read their notes to them, and that helped them in their studying.

...we have "readers'' who come in the evening during prep hours so they are selected among the students then they come and read for us and they will be sitting closer to us (**FAVI 1**).

> *Normally the "readers'' are from the same course, general arts because we offer general arts so that we can learn the same electives but if you pick let's say visual arts students since our electives are not the same, we will not benefit.* (**FAV1 5**).

Group discussions

Some participants asserted that joining group discussions helped a lot in their academic pursuits. In an instance where both the sighted and FAVIs come together, it facilitated FAVI's learning. A participant's narration is captured below:

> *Yes, especially during exams time because some of us don't have the past question on our laptops so they bring their laptops then maybe a group of 8 will just be sitting around the table and one sighted person will be reading and we will be answering questions* (**FAVI 2**).

...they also have different books we do not have so they will bring them. During the group discussions, these different books that will be brought by our friends help us to compare the different books we have (**FAVI 3**).

Our group discussion also helps us to better understand some of the topics that we may not have understood during normal class hours (**FAVI 4**).

Library resources

One of the ways of facilitating learning among FAVI was relying on assistive devices and library resources such as braille, audiobooks, screen readers, and magnifiers for individuals with visual impairments. Participants shared their experiences with regard to the use of the library.

> *Hmm, as for library resources we as the visually impaired only know of this resource center. The visually impaired don't have the braille books in the school library so even if you go there what are you going there to do? Unless you go with your*

"reader" who is also going who also wants to learn, to help you to read (**FAVI 4**).

In a similar vein, a participant corroborated the earlier assertion by stating that:

As for the school's main library, we don't go there. There is no book in Braille in the library for us. You can only go there if your "reader" is with you so she or he can read a storybook or something else for you. The only place we know as visually impaired is our resource center we are having this conversation (**FAVI 3**).

Challenges in academic pursuit

This had to do with the difficulty that FAVI faced in their academic pursuit. They included disturbances during teaching and learning, some books were not available in braille, computers were not user-friendly.

Disturbances during teaching and learning

Some of the participants shared their experiences on the challenges they face in the classroom setting. They recounted their experience with sighted students in the classroom,

...sometimes when the teacher is dictating notes for us to write, we use braille and all those braille embossers sometimes disturb us a lot. It makes noise when being used (**FAV1 1**).

Another participant added:

...our colleagues will be making noise that we are disturbing with the sound from the braille, they cannot hear, this makes it difficult to hear what the teacher is dictating and we have to stop for them to write (**FAVI 4**).

Some books are not available in braille

It was further revealed that not all the books necessary for learning were in braille format and this hampered their learning.

No, we don't have any braille textbooks here, many of the books are in hard copies and print so what we do is those having computers, we just take the soft copy then we use those ones but for braille no! (**FAVI 8**).

> *Some are in the form of audio……yes and for those that are not in the audio, we have software on the computer, thus the Non-Visual Desktop Access (N.V.D.A), so any textbook that is on the computer, it reads to our hearing* (**FAVI 4**).

Computers are not user-friendly

The issue of computers came up. Some of the participants reported that they had challenges with the software. A participant noted the following:

> *Inaccessible software such as Non-Visual Desktop Access (N.V.D.A), and Job Access with Speech (JAWS), make the use of computers difficult for individuals with visual impairment. These are software we use on our computers, which helps us to read on the screen* (**FAV1 3**).

Another participant said:

…using some of the computers is challenging because sometimes when using them the N.V.D.A can turn off at any time, and some computers are spoilt so there are not enough, is not enough for us all to be using it (**FAVI 5**).

FAVI faced significant challenges in their pursuit of academic success, as highlighted by the participants' narratives. Despite their strong desire for academic achievement, they encountered multiple obstacles along the way.

Research Question Seven: To what extent does sexual health affect female adolescents with visual impairments on academic experience?

This section presents an analysis of the effect of sexual health on the academic experience of female adolescents with visual impairment. It was discovered that to a large extent, issues of menstruation had a great impact on their academics. Analysis was done using six themes. These are challenges during menstruation; class attendance, level of concentration, classmates, and male teachers.

Challenges during menstruation

Several challenges confront FAVI during their menstrual period which have the potential of affecting their academic experience. The ability to go to the classroom or even be among their classmates could be affected as result of experiencing menstrual difficulties. For instance, during menstrual period, FAVI experience excruciating pains which make it difficult to stay in the classroom or even concentrate on what is being taught. Various experiences were shared by the participants.

> *The only thing is sometimes the abdominal pains. The pain is sometimes too difficult. You don't feel like doing anything during that period. So, when it comes, I am mostly in pain and don't want to go to classes so I miss classes which sometimes makes me feel bad. For me, the only challenge is pain. My challenge is the pain that is associated with it* (**FAVI 10**).

Pain is one of the commonest experiences during menstruation as FAVI recounted how the pains affected her ability to go the classroom.

Another challenge that posed potential treat to FAVI academic experience had to do with the issue of sanitary pad. Sanitary pads are a very important aspect of toiletries needed during menstruation as said by the participants, however, the narration pointed to the fact that access to pads was a challenge sometimes. A FAVI who does not get sanitary pad during her menstrual period is likely not to attend class for the fear of her school uniforms being soiled by blood. A participant had this to say:

> *We bring pads from the house to school and when it finishes, we get some from our friends. When it becomes critical, it is not about the type of pad you want but about what you get from your friend. Our parents provide our pads, but the school does not supply them. I don't think the school has what it takes to give us sanitary pads. Unless someone donates to the school that is where they can help us with some if not then that is all* (**FAVI 13**).

Further to the challenges encountered during menstruation as said by the participants of this study was the fact that they sometimes get their school uniforms soiled and because they are unable to see it.

> *…but the difficult part is when you stain yourself how would you know? Unless somebody tells you. If you don't change regularly, it will spoil your dress if it is over-soaked. At times you may get a scent that everybody sitting beside you will know that this girl is menstruating and people will not like to get close to you* (**FAVI4**).

Another participant added that…

> *...your dress is soiled because is not every time that you are going to see as a visually impaired. There has been an instance when somebody had to prompt me that my dress is soiled. I felt bad because maybe are a lot of people who have seen it* (**FAVI 6**).

Another challenge that was mentioned by the participant was the fact that during menstruation they are unable to socialize with other people. This mindset hinders or prevent FAVI from going to the classroom during their menstrual period for the fear being ridiculed by their peers. Participant 14 had this to say…

> *As an adolescent girl, if you are menstruating, some people like to stigmatize you. They don't want you to come closer to them. They will say you are impure* (**FAVI 14**).

Evidently from the above, female adolescents were confronted by several factors including lack of sanitary pads, and getting their uniforms soiled.

Class attendance

Going to class during the menstrual period was a difficult moment for female adolescents because of the emotional and psychological difficulty associated with menstruation. A verbatim quote from a participant is below;

> *It affects class attendance. I mostly prefer not to have attended classes. It makes me feel uncomfortable. You are afraid that your school uniform will get destroyed when you are not properly dressed. In our condition, it makes it worse because you wouldn't even know whether you have*

> *destroyed the uniform or not. When you destroy yourself and you are told you will find it difficult to go home* (**FAVI10**).

A participant admitted that even though it was difficult going through that period she had to endure it.

> *I am able to attend class, even though it is challenging sometimes but I manage to go to the classroom. That is the reason why we are here. Some of the teachers especially the male teachers would not understand what we are going through that time* (**FAVI 14**).

By implication menstruation soiled school uniforms and made them feel uncomfortable among their peers in the classroom. Not going to class or missing classes could have some effects in their academic performance or experience.

Level of concentration

Teachers always expect their students to have concentrate in class as the closer the students' attention is, the higher the learning outcome and knowledge gained. This is to say that various factors could influence students' level of concentration in class. They recounted how their level of concentration was affected during their menstrual period. Excerpts are captured below:

> *I will go to class and I will be sleeping. I mostly sleep in class and listen to what is being discussed. The pain will not allow you to concentrate on what is going on* (**FAVI 14**).

A participant reported that she cannot concentrate on two things at the same time. That is to say, the pain from menstruation does not make her pay

attention to the class teachings going on. **A FAVI 7** had this to say: *My concentration will not be there because two things cannot go together. I cannot be thinking of the pains from menstruation and at the same time concentrate on what is being said by the teacher.*

A participant was of the view that she cannot even eat let alone concentrate on what is being taught in the class…

> *During menstruation, you will feel pains so when you are in class you will not be able to concentrate. Even when you go to prep, you cannot concentrate and learn. Sometimes you will not have the appetite to eat so you will become weak to read. Sometimes you will be feeling sleepy while in class so you have to put your head on the table while a lesson is ongoing* (**FAVI12**).

Another participant said:

> *For concentration, No! because of the pain that you will be going through you cannot concentrate in class or you will be thinking if I get up will there be any sign in my dress that I will not see it?* (**FAVI 1**).

For a student to perform well academically and to also demonstrate understanding of concepts being taught in class, it will require that the student pays attention to what teachers say in class. However, participants reported that their level of concentration was affected during menstruation.

Classmate

Classmates had their share of the impact of the female adolescents' state of sexual health (menstrual period) effect. That is the relationship with friends

be it their sighted friends or their colleague visually impaired was significantly affected. This is because during their menstrual period, FAVI becomes bored and isolate themselves from their peers. In some instances, FAVI refused to talk to their classmates. A FAVI had this to say:

> *Sir maybe during that time you will not feel like even playing with anybody. Like you will be bored. So, when you are bored with your colleague, they may not understand that this is what is happening to you and that is why you are like that and they will get angry because of that. So, the time it will be ok for you and you also play with them, they will use it to ask you when I was playing with you, you decided not to mind me* (**FAVI 13**).
>
> *Some people keep it to themselves and pretend all is well. Others too will voice out that this is what they are going through. Some people will get angry if only you do not tell the person; the person may not know that this is what you are going through. A friend will say that sometimes you behave a certain way* (**FAVI 6**).

A comment from a participant suggested that out of frustration and pain during her menstrual period, she ended up being at loggerheads with her colleagues in the class.

> *When it gets to that time, I will be at loggerheads with you because you will come and disturb me so will just tell you today, I am not in the mood so do not come. But I am not*

> *going to tell you the actual reason but I will just tell you I am sick* (**FAVI 7**).

The excessive pains that some FAVI go through during their menstrual periods irritated and angered them and therefore, they did not want to have anything to do with their colleagues.

> *Your walks and mood will change. You will be weak so if someone talks to you, you will not be in the mood to respond well. So, your friends will think you are showing them attitude. The pain can last for four or seven days. Some too have theirs after or before menstruation* (**FAVI 10**).

Another challenge that FAVI had to confront with was how they related to their peers. The menstrual period comes with its mood swings which sometimes make them irritated to be with. During such periods FAVI friends who do not understand their state or condition easily get peeved as reiterated.

Male teachers

Again, participants shared the experiences they had with male teachers during their menstrual period. They were of the view that their male teachers had some difficulty understanding them during their menstrual period. A participant shared her view that she refuses to answer questions when she is asked to respond to a question from the teacher….

> *Sometimes, teachers get angry if they call us to answer a question and we are sitting down. We sit down because during that period you feel like you have soiled your dress when you stand up* (**FAVI 13**).

Another participant said:

> *The teacher may be teaching and will ask a question or you put your head on the table; he will tell you to wake up maybe you will not mind him and he/she may get angry that you didn't answer the question or you have frowned your face so you don't respect* (**FAVI 4**).

Yet another FAVI said:

> *The teachers you know do not mingle with them. Sir during that time we do not feel happy so when they talk to you and you do not talk, they will say this person you don't respect and this and that. Yes, it is the male teachers who do that but the female teachers understand the situation so they do not have any problem* (**FAVI 3**).

A participant confirmed the earlier submission on the issue of male teachers not cooperating or understanding the female adolescents.

> *Some male teachers do not know. Some of them too if I tell them about it, they will take it outside and they will be saying it. They will come to the class and say 'you this girl every day you say you are menstruating'. So, we can't tell the male teachers. But the female teachers do understand so they don't disturb us but the male teachers don't feel what we are feeling* (**FAVI 2**).

An excerpt from female adolescent shows her comparison of male and female teachers on the grounds of who understands them better in their moment of experiencing menstrual crumps…

Sir yes, the female teachers understand us better than the male teachers because they say experience is the best teacher so the female teachers have passed through the same thing before so they understand (**FAVI 11**).

From the interviews, it may be said that sexual health influenced female adolescents' academic experiences. In this regard, it was observed that the menstrual cycle of these individuals played a major role in determining or influencing academic experience. Issues such as class attendance, level of concentration, and relationship with classmates and class teachers were all influenced. The words of the participants further showed the challenges faced during menstruation (stigmatization, lack of sanitary pads, soiled uniforms, lack of socialization, severe pains, and lack of personal support were acknowledged by the participants), and ways of ensuring personal hygiene during menstruation affected the academic experience of female adolescents with visual impairment. Male teachers not understanding female adolescents during their menstrual period also became an issue of concern.

Discussion

This section of the study sought to discuss in detail the results of the analysis. The order of how the discussion was done is outlined below:

1. Level of knowledge of sexual health among female adolescents with visual impairment
2. Influence of demographic characteristics on sexual health knowledge.
3. Sexual health needs of female adolescents with visual impairment
4. Influence of socio-economic norms on sexual health of female adolescents with visual impairment

5. Degree of impairment on sexual health of female adolescents with visual impairment
6. Academic experiences among female adolescents with visual impairment.
7. Influence of sexual health on the academic experience of female adolescents with visual impairment.

Knowledge level of sexual health of female Adolescents with Visual Impairment

The purpose of this particular objective was to explore the level of knowledge of sexual health among female adolescents with visual impairment. Both qualitative and quantitative data were generated to answer the research question. The results revealed that female adolescents with visual impairment had a below-average 41 (58%) level of knowledge of sexual health from the quantitative data. The finding from the qualitative data revealed that the knowledge participants had about sexual health was limited to sexual intercourse. The superficial knowledge of the concept of sexual health by participants buttresses the results of the quantitative data which revealed below-average knowledge of sexual health. This may imply the need to educate both parents and adolescent girls with visual impairment regarding sexual health. Limited sexual health knowledge can have several implications for PWDs and Special education. For example, there could be an increased risk of sexually transmitted infections (STIs) and unintended pregnancy. Students with limited sexual health knowledge may not understand the importance of using contraceptive and may engage in risky sexual behaviour that increases their risk of STIs and unintended pregnancy (Centers for

Disease Control and Prevention, [CDCP] 2021; Kalmuss, Davidson, Cohall, Laraque, & Cassell, 2003; Ganle et al., 2019).

Limited sexual health knowledge on the part of FAVI may lead to inappropriate decision-making. Without adequate information about sexuality and sexual health, adolescents with special needs may not be able to make informed decisions about their sexual health and well-being (WHO, 2020). This can lead to negative health outcomes and limit their ability to live fulfilling lives (Dorji, Wangmo, Tshering, Tashi, & Wangdi, 2022). Persons with disabilities are often faced with stigma and discrimination, and limited sexual health knowledge can exacerbate these issues (Ocran, 2022; United Nations, 2021). Again, adolescents with limited knowledge of sexual health may be more susceptible to victimization, abuse, and exploitation (National Sexual Violence Resource Center, 2021; Márquez-Flores, Márquez-Hernández & Granados-Gámez, 2016). Adolescents with limited sexual health knowledge may also have difficulty accessing necessary healthcare services, such as gynaecological exams, contraception, and STI testing (Dorji et al., 2022; Planned Parenthood, 2021). This implies special education programs need to provide comprehensive sexual health education that is inclusive and accessible to all students, regardless of their ability level (American Academy of Paediatrics, 2020). This can help ensure that students have the knowledge and skills they need to make informed decisions about their sexual health and well-being, and to live fulfilling lives free from stigma and discrimination.

The finding corroborates extant study findings in the literature (Iqbal, 2021; Kyilleh, Tabong, & Konlaan, 2018). For example, Iqbal (2021), explored the level of knowledge and awareness about sex and reproductive

health among adolescents in Kashmir. The study revealed that more girls than boys had little knowledge about sexual and reproductive health. This is consistent with the findings of the current study where FAVI were found to have less knowledge regarding sexual health.

However, the finding of this current study contradicts the findings of other studies (Cheak-Zamora, 2019; Evcili et al., 2017; Kassa, et al., 2016; Kim et al., 2018; Li, et al., 2017). For instance, Evcili et al., (2017), study reported that adolescents had higher sexual health knowledge as compared with the finding of this current study where the results show below average level of sexual health knowledge. Again, the findings of Li et al., (2017) which measured the knowledge of sexual and reproductive health, and how such knowledge is associated with sexual behaviours and reproductive health outcomes revealed a significantly higher (2.33/4.00) knowledge in the sexual and reproductive health as compared to the below average sexual health knowledge of this current study. The difference in this finding come about probably because of geographical difference. Whilst Li et al., (2017) study was done in developed jurisdictions, the current study was done in developing economy, that is Ghana. Context has the potential of bringing variation in how female adolescents with visual impairment perceive sexual health. In developed countries, issues of sexual health are more openly discussed with adolescents as compared to developing countries such as Ghana where issues surrounding sexual health and it related matters are treated with a lot of caution.

Demographic characteristics (age, class, degree of impairment, and religious background) on sexual health knowledge

The results showed that demographic characteristics in terms of age and religious background influenced the sexual health knowledge of FAVI. However, the class of FAVI (Form 1 and Form 2) and the degree of impairment (partially sightedness and total blindness) did not influence sexual health knowledge of the FAVI. FAVI who were aged 15 and above had more knowledge of sexual health than those between 10 and 14 years. Age can play a significant role in shaping an individual's sexual health. Younger individuals may have less experience and exposure to sexual health information and may be more likely to engage in risky sexual behaviours. On the other hand, older individuals may have had more time to accumulate sexual health knowledge and may be more likely to engage in safer sexual behaviours. Some older individuals may have misconceptions or outdated information about sexual health, which can impact their ability to make informed decisions about their sexual health.

A study by Subbarao and Akhilesh (2017), found that older adults were more likely to have accurate knowledge about sexually transmitted infections (STIs) compared to younger individuals, but that younger individuals were more likely to have up-to-date knowledge about HIV/AIDS. Another study by Nesamoney et al. (2022), found that older individuals were more likely to have accurate knowledge about contraception compared to younger individuals, but that younger individuals were more likely to have accurate knowledge about emergency contraception. This suggests the significant influence that age as a

demographic characteristic have on sexual health knowledge that an individual possess.

The results further showed that Christians possessed more sexual health knowledge as compared to the Islamic group. Sexual health knowledge and attitudes towards sexuality can vary greatly among individuals within a religious group, as well as between different religious groups. For example, some religious communities may place a strong emphasis on sexual abstinence or may hold beliefs that are not in line with contemporary scientific understanding about sexual health. On the other hand, some religious communities may promote open and honest discussions about sexuality and may provide access to comprehensive sexual health education. Moreau, Trussell and Bajos (2013), study found that among religious young adults in the United States, those who held more conservative beliefs about sexuality were less likely to use contraception and more likely to engage in sexual risk behaviours. Another study by Murray, Winfrey, Chatterji, Moreland, Dougherty and Okonofua (2006), found that religious beliefs about contraception and abortion were associated with disparities in contraceptive use among women in Nigeria. The finding further corroborates the work of Watsi and Tarkang (2020), who explored demographic determinants of risky sexual behaviours among senior high school students in the Hohoe municipality, Ghana. The findings of their study revealed that religion and marital status were the two socio-demographic characteristics that were significantly associated with risky sexual behaviour. Likewise in this current finding, religion had a significant influence on sexual health.

Sexual Health Needs of Female Adolescents with Visual Impairment

The objective was to ascertain the sexual health needs of female adolescents with visual impairment. The finding showed that female adolescents with visual impairment had several sexual health needs which included; information on how to avoid sexually transmitted diseases, the need for school counsellors, and the need for information on menstrual hygiene. The finding is in line with a systematic review by Panjalipour et al., (2018), which indicated that most adolescents have an unmet need for sexual and reproductive health services. Therefore, the researchers suggested that future efforts should be directed toward need-based interventions such as the provision of information and appropriate education to improve adolescent sexual reproductive health. Likewise, the study of Renzaho et al., (2017) revealed that due to the lack of appropriate information and education, the sexual health needs of female adolescents were not met. Furthermore, the researchers eluded that owing to the lack of information, adolescents lacked appropriate self-care practices and were unable to engage in sexual practices. This puts them at risk of various forms of abuse, diseases, and sexually transmitted infections. Okereke (2010) findings revealed that, 73% of the respondents stated that they did not know how and where to get appropriate information about their sexual and reproductive health. Gathering from this, the researchers concluded that the only way to help adolescents navigate the issue of sexuality and sexual health is the provision of adequate and appropriate information. This makes sexual health information the most essential sexual health need of adolescents.

The findings from Mesiäislehto, Katsui and Sambaiga (2021), demonstrated that guidance and counselling for students provided ample information that helped address the sexual health needs of adolescents with disabilities. This means the lack of school counsellors have the tendency to affect the well-being of adolescents as revealed by this current study.

From the findings of the current study as well as findings from previous research, it is clear that information and education on sexual health happen to be the most pressing sexual health needs of adolescents with disability (Mesiäislehto et al., 2021; Obasi et al., 2019). The similarities in the research findings can be attributed to the fact that previous research as well as this study purposively focused attention on the sexual health needs of adolescents.

There are several implications for female adolescents with visual impairment not having information on how to avoid sexually transmitted diseases, not having school counsellors as well as not having information on how to observe menstrual hygiene. Lack of sexual health information may lead to sexually transmitted infections and unintended pregnancies which may have a long-lasting impact on the adolescent (Mamilla & Goundla, 2019). According to a report by the World Health Organization (WHO), many young people do not receive comprehensive sexuality education that covers topics such as healthy relationships, consent, and gender and sexual orientation. This can lead to misunderstandings and misconceptions about sexuality, which can have negative consequences for their sexual health and well-being (WHO, 2020). Adolescents are at a higher risk of engaging in risky sexual behaviours, such as unprotected sex and multiple partners, due to a variety of factors,

including a lack of information and access to contraception, peer pressure, and a desire to fit in (Kirby, Laris & Rolleri, 2007). Adolescents are also at a higher risk of contracting STIs and experiencing unintended pregnancy, which can have long-term consequences for their health and well-being (CDC, 2021). Adolescents may face barriers to accessing accurate and comprehensive information about sexuality and reproductive health, as well as services such as contraception and testing for sexually transmitted infections (STIs) (Seme et al., 2021). It is crucial to address the sexual health needs of adolescents by providing them with accurate information, access to services, and a safe and supportive environment to discuss their concerns and questions. This can help to promote healthy sexual behaviour and prevent negative consequences such as STIs and unintended pregnancy. The conclusion from the finding of the study is that adolescent females with visual impairments could be said to be vulnerable due to their unmet sexual health needs. This implies that when setting up adolescent-specific interventions for addressing the sexual health needs of adolescents, disability sensitivity and visual impairment ought to be paid attention to.

Influence of socio-cultural norms on sexual health of female adolescents with visual impairment

The objective of the study was to explore the influence of socio-cultural norms on sexual health among female adolescents with visual impairment. The finding of the objective showed that sexual health was influenced by socio-cultural norms. It could be deduced from the analysis that female adolescents' sexual health was influenced by family values, traditional beliefs and customs, and religious beliefs. Family values on

sexual health may be the beliefs, attitudes, and practices that a family holds regarding sexuality and sexual health. These values are often influenced by cultural, religious, and societal norms, and they can have a significant impact on how family members approach issues related to sexual health, including sexual education, contraception, and relationships. Prominent among family values was the fact that the family sets rules that guide FAVI on issues bothering on sexual-related matters. The FAVI could not do anything contrary to the set rules by their families. The family does not encourage adolescents to engage in boyfriend-girlfriend relationships. In general, families that prioritize sexual health tend to value open communication, honesty, and respect when it comes to discussions about sex and sexuality. They may encourage their children to ask questions and seek out accurate information about sexual health and may provide guidance and support in making healthy choices.

Several literatures have shown the significant influence the socio-cultural norms ie family values, religion and societal norms shape adolescents sexual health. For example, Wamoyi et al., (2015), study revealed that parenting and family structure were found to influence young people's sexual behaviour by influencing children's self-confidence and interactional competence. Further research has shown that parents who talk openly with their children about sex and sexuality are more likely to have children who delay sexual activity and practice safe sex when they do become sexually active (Kohler, Manhart, & Lafferty, 2008), likewise in the current study revealed family involvement in trying to shape the sexual orientation of female adolescents with visual impairment.

Another study found that teens who reported high levels of communication with their parents about sex were more likely to use condoms and other forms of contraception during sexual activity (Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003). On the other hand, families who hold more conservative views on sexuality may be less likely to discuss sexual health with their children or to support the use of contraception. This can put young people at higher risk for unintended pregnancies and STIs. It was therefore imperative for the parental involvement in the affairs of the FAVI sexual health as portrayed by this current study.

In a similar vein, Babalola et al., (2005), findings indicated that parental monitoring and control are important predictors of youth sexual behaviours, emphasising the importance of targeting parents and guardians in efforts to promote responsible sexual behaviour among adolescents. The finding of the study reiterated that it is critical to encourage parent-child communication about sexual issues and to equip parents and guardians to communicate effectively about sexual issues with their children and wards.

Ayikukwei et al. (2007) study discovered that when sexual intercourse is performed as a ritual, it is regarded as a sacred rite. It is associated with most social and cultural activities such as planting, harvesting, weddings, and funerals. The overarching goal of this ritual is to cleanse and sanctify evil spirits. Just as in this study participants reiterated that on religious grounds if an adolescent or an unmarried person engages in sexual intercourse the individual is required to undergo spiritual bathing as a means of cleansing.

This buttresses the religious dimension of the socio-cultural influence on sexual health FAVI.

The finding of this current study corroborates Bronfenbrenner's Social Ecological Model in the sense that intrapersonal factors in the Model such as values and attitudes influence's desire for health. In this study, family values are seen as contributing factor to female adolescents with visual impairment's quest for sexual health. The theory recognises that health experiences are influenced by factors within and beyond the individual. In this study family members influence to a large extent influenced FAVI sexual health decisions. For instance, in this current study family values did not permit them to go wayward in matters of sexual health.

FAVI religious beliefs also influenced their sexual health. This aligns with Social Cognitive Theory which posits that individual's decision to initiate an action is determined or influenced by the individual's beliefs, attitudes, and values. Social Cognitive Theory posits that several factors influence health behaviours such as adopting health lifestyle or even seeking healthcare. Religion made some FAVI shun away from sexual intercourse before marriage, eventhough there is not sufficient evidence to prove whether having sexual intercourse before marriage will lead to successful relationship or otherwise.

Influence of degree of impairment on sexual health of female adolescents with visual impairment

The study explored the influence of degree of impairment in FAVI on sexual health. The finding of the study revealed that FAVI's degree of impairment did not influence their sexual health. This means irrespective of

one's visual impairment; one can freely decide or take a decision bothering on your sexual health without being deterred by their condition. FAVI were able to express their sexual feelings or experience to their counterparts without any fear or shyness. To a larger extent, the majority felt they were not different from their peers even though in some instances they felt different when it came to an academic exercise.

The study further revealed that participants devised a mechanism or their own way of determining one's appearance. For example, FAVI used the male's voice to determine whether he is handsome or not. From the voice, they are able to decide whether they have any likeness for their male counterpart or not. This was also a means to appreciating one's beauty. It could be said, whilst the sighted use their sight to appreciate one's beauty, FAVI used the voice of the individual in question.

A study by Huang, et al., (2021), found that individuals who were blind reported more difficulties with physical touch during sexual activity compared to sighted individuals. This disconfirms the findings of the current study since FAVI did not have any challenge when it came to physical touch, they had devised their mechanism to detect one's appearance. That could possibly mean they had other means of locating any part of the body if they wanted to engage in sexual activity with the opposite partner.

However, the findings of Sorokowska et al., (2018) confirmed the findings of this current study where the degree of impairment of the visually impaired made the use of auditory cues more important than visual cues in their choice of partners. This affirms the point that FAVI used the voice of a

male counterpart to decide their appearance as been handsome and their decision to select them for a relationship.

Cornell Kärnekull (2018), findings indicated that blindness has no general influence on any task assigned to them, however, this contradicts the current findings where FAVI complained of how differently they felt when it came to an academic exercise. This arises because of probably the limited resources in the classroom for the visually impaired (Manitsa & Doikou, 2022).

The finding of the study does not support the theory of Gender and Power (Social Structural theory) propounded by a Socio-Psychologist, Raewgn Connelle in 1987. The sexual division of power of the theory contradicts this current finding in the sense that the theory postulates that females are discriminated against in their right to make decision bothering on their sexuality and sexual health. Women are not given the free will to make decisions as to whether they want to give in to sexual pleasures or not. For instance, they are unable to negotiate the use of condoms during sexual intercourse (Exavery et al. 2012; Noar, Morokoff & Harlow, 2002), however, in this current study FAVI had their own way of deciding who to have relationship without any coersion. In the sexual division of power, men have the power to make decisions that favour them during sexual pleasures while women are regarded as weak and submissive, however, in this current study, FAVI said they were not discriminated against based on their sexuality. They were able to express their sexual feeling towards their opposite partners if they wanted to.

Academic experiences among female adolescents with visual impairment.

The study sought to investigate the academic experiences of female adolescents with visual impairment. The finding revealed that female adolescents with visual impairment classroom experiences' included delay in receiving feedback, inability to see clearly from the board, stigmatization, delay in taking tests, and having some form of cordial relationship with some teachers. The study further revealed the ways of facilitating learning by FAVI. This included the use of electronic audio devices such as recorders, having sighted peers read out notes, joining group discussions, and making use of library resources. The finding also showed the challenges confronting FAVI in their academic pursuit. They included disturbances during teaching and learning, some books not available in braille, as well as some computers not being user-friendly.

Delay in receiving feedback had to do with FAVI not receiving their test papers and class exercise results on the same day and time as their sighted peers. This emerged as the results of their test papers which had to be translated from the braille (i.e. blind) to normal text for teachers to understand the test before marking could be done. Waiting for test paper feedback can cause students to experience increased stress and anxiety as opined by Mashayekh and Hashemi (2011) when their study discovered that delayed test taking and receiving feedback results in frustration and sinking feelings of anxiety. The longer the delay, the more time students have to speculate about their performance, which can heighten anxiety levels (Hanfesa, Tilahun, Dessie, Shumet, & Salelew, 2020). High levels of stress and anxiety can negatively impact students' overall well-being and academic performance.

When students with visual impairment consistently receive their test papers late compared to their sighted peers, it could create inequality and disadvantage. The delay reinforces a sense of exclusion and may lead to a perception of being treated unfairly. de Verdier (2016), in a study on inclusion in and out of the classroom, revealed that a majority of the students with visual impairment were stressed about classroom work. This came about as a result of procedures in the classroom that made students with visual impairment feel excluded. An example is not receiving their test results on time. This can eventually affect students' self-esteem, confidence, and overall educational experience.

Late test paper feedback hampers students' ability to address knowledge gaps promptly. By identifying areas where they struggled or made mistakes, students can seek clarification, additional support, or engage in remedial measures to fill those gaps. Delayed feedback prolongs the process of addressing and rectifying misunderstandings or misconceptions.

When students do not receive timely feedback, it can impact their motivation levels. Without knowing their performance or receiving acknowledgment for their efforts, students may feel less engaged and motivated to continue their academic pursuits. This finding of this current study buttresses Han, Takkaç-Tulgar, and Aybirdi (2019), who assessed factors causing students' demotivation; and found that the major factors that demotivated students were class characteristics and test anxiety; that is the delay in tests and feedback. Timely feedback provides validation and recognition, which can positively influence students' motivation and commitment to their studies.

Delayed test paper feedback limits students' ability to self-assess their work. Without timely feedback, students may struggle to accurately gauge their strengths and weaknesses, inhibiting their ability to take ownership of their learning process. Self-assessment plays a vital role in promoting metacognitive skills and fostering independent learning. Delayed test paper feedback can hinder the learning process. Students may miss the opportunity to review their performance, identify areas of improvement, and reinforce their understanding of the subject matter. Timely feedback is crucial for students to connect their mistakes or misconceptions and make necessary adjustments for future learning.

To mitigate the consequences of delayed test paper feedback, it is essential to implement strategies that ensure equal and timely access to feedback for all students, regardless of their visual impairments. This includes providing accessible formats, utilizing assistive technology, training teachers in inclusive practices, and establishing effective feedback mechanisms that prioritize prompt and equitable delivery of test papers and feedback to all students.

Furthermore, FAVI's academic experience of their inability to see clearly from the board is likely to be an experience on the part of female adolescents who have low vision. This can result in a significant loss of access to important visual information presented by the teacher. This can include notes, diagrams, graphs, or visual aids that are essential for understanding the lesson. As a result, students may miss out on crucial information and struggle to keep up with the rest of the class. FAVI, that is those with low vision may find it challenging to take accurate and comprehensive notes if they cannot see

the content on the board clearly. This can impact their ability to review and study the material independently, leading to gaps in their understanding and knowledge. FAVI who cannot see the board may need to rely on their peers to provide them with verbal explanations or transcriptions of the information. While peer support can be valuable, excessive dependence on others for accessing information can hinder students' independence and self-reliance.

Constantly straining to see the board or markerboard can lead to visual fatigue and eye strain for students with low vision (Coles-Brennan, Sulley & Young, 2019). This can impact their overall comfort, focus, and concentration in the classroom, potentially affecting their academic performance. When students struggle to see the board, they may become disengaged or lose interest in classroom activities. This can result in decreased participation, reduced interaction with the teacher and peers, and an overall diminished learning experience. The inability to see the board can contribute to feelings of frustration, isolation, and low self-esteem among students with low vision. They may feel left behind or different from their sighted peers, which can negatively impact their confidence and overall emotional well-being. Foster a supportive and inclusive classroom environment by promoting awareness and understanding of visual impairments among teachers and peers. Encourage empathy, respect, and collaboration to ensure that students with low vision feel valued and included.

Not all, the stigmatization that was experienced by FAVI came from their sighted peers. In the regular classroom setting where both students with visual impairment are together with sighted peers, there is the tendency for stereotyping and stigmatization as was experienced in this study. Doboch,

Tekle and Kebede (2022), reported that the majority of students with visual impairment faced stigma and discrimination in schools. Peers may have misconceptions about their abilities, treat them differently, or even engage in teasing or bullying behaviour (Doboch et al, 2022; Śmiechowska-Petrovskij, 2017). This can significantly impact the student's self-esteem and overall well-being. Trunk, Russo, and Trammell, (2020), study results revealed that students with impairments reported significantly higher stigma compared to peers without impairments. Amin, Sarnon, Akhir, Zakaria, and Badri (2021), stated that while peer acceptance is generally positive, only a small percentage of peers are able to accept students with disabilities as close friends. Not everyone can be a good friend to these disabled students. Some of their peers find it difficult to accept their fellow students with visual impairment's shortcomings. This aligns with the findings of this current where sighted students stigmatized the students with visual impairment in the regular classroom setting. On the other hand, stigmatization of persons with disabilities in the classroom may not only come from sighted peers but also from teachers. Some teachers' actions are likely to contribute to this menace. Teachers who are not adequately trained in working with students with visual impairment may struggle to provide appropriate accommodations and support. This can further contribute to stigmatization if the student's needs are not adequately addressed or understood. According to Bulat, Hayes, Macon, Tich ánd Abery (2017), teachers, classmates, school administrators, and parents of children without disabilities play a significant role in stigmatizing students with disabilities in school.

Addressing stigmatization requires creating inclusive environments and promoting awareness and understanding of visual impairments. Schools, educators, and society as a whole can play a crucial role in supporting students with visual impairment by providing appropriate accommodations, fostering empathy, and promoting inclusion and acceptance. Additionally, it is essential to celebrate the strengths and abilities of students with visual impairment rather than focusing solely on their challenges.

In addition, FAVI having a cordial relationship with their teachers can have several positive consequences. The cordial relationship emerged as a result of the warm reception that some of the teachers extended to FAVI. A cordial relationship with teachers can lead to increased support for the students. This finding contradicts the finding of Maindi (2018). In his study, Maindi (2018), found that the support teachers were to give the students with visual impairment was not given. According to Anwer (2019) and Nathan (2018), teachers who have a positive rapport with their students are more likely to provide individualized attention, guidance, and resources to help the students succeed academically and personally. When FAVI feel comfortable and supported by their teachers, they are more likely to actively engage in the learning process. They may feel more comfortable asking questions, seeking clarification, and participating in classroom discussions. This increased engagement can positively impact their academic performance. A positive relationship with teachers can contribute to the emotional well-being of visually impaired female adolescents. It creates a sense of belonging, validation, and emotional support. Knowing that they have a trusted adult who cares about their well-being can boost their self-esteem, reduce stress, and

improve their overall mental health. Teachers who understand the unique challenges faced by these students can help ensure that appropriate accommodations and assistive technologies are in place. They can also advocate for accessible materials, resources, and classroom environments that promote inclusion. Teachers can serve as mentors, offering guidance, sharing personal experiences, and providing inspiration. This can help the students develop important life skills, foster career aspirations, and build positive relationships with other adults.

It is important to note that the consequences may vary based on individual experiences and the specific dynamics of the teacher-student relationship. However, overall, a cordial relationship with teachers can have a profound impact on the academic, emotional, and social development of visually impaired female adolescents, providing them with the support and encouragement they need to thrive.

Students with visual impairment in the regular classroom devise several ways of facilitating their learning. Likewise, FAVI in this study also had several means of learning as have discussed below. One of such several ways of learning is the use of audio recorders. The audio recording provides students with visual impairment with a means to capture classroom lectures, discussions, and presentations. This enables them to review the material at their own pace, improving their understanding and retention of information. By using audio recorders, students with visual impairment can become more self-reliant in their learning. They can refer to the recorded audio to fill in any gaps in their notes, reducing their dependence on others for information. Audio recorders allow students with visual impairment to actively participate

in classroom discussions and activities without the worry of missing important details. They can focus on engaging with the class rather than solely relying on note-taking.

The use of audio recorders helped FAVI to record the teaching process for their private study. With the use of electronic audio devices, such as recorders or text-to-speech software, female adolescents with visual impairment are able to listen to readings and notes, thereby ensuring they have access to the same information as their sighted peers. The use of assistive technologies such as audio recorders and text-to-speech has helped students with visual impairment to access the curricula more (Nees & Berry, 2013; Arlinwibowo & Retnawati, 2015). Auditory accommodation in the educational setting have ensured equitable access to educational evaluations for students with visual impairment.

It's crucial to recognize that the consequences of using an audio recorder by students with visual impairment may vary depending on individual circumstances, classroom dynamics, and the support available. Collaborating with educators, students, and support staff to address any challenges that arise can help maximize the benefits and minimize any potential drawbacks.

Having sighted peers read out notes to FAVI was one of the several ways that facilitated their learning. Having visually abled peers read out notes can facilitate better understanding and comprehension for students with visual impairment. Verbalizing the information can also provide additional context, intonation, and emphasis, which may enhance the learning experience. More importantly, it can foster cordial relationships among peers and promote inclusivity. Many studies that have looked at the strategies employed by

students with visual impairment in studies have discovered several strategies including, reading through touch (Khochen-Bagshaw, 2011), reading through the braille and large print (McLaughlin & Kamei-Hannan, 2018), however, it appears this study added to allowing peers to read out notes as a strategy employed by students with visual impairment in the regular classroom setting.

Group discussions also happened to be another way of learning employed FAVI. Group discussions provide an opportunity for students with visual impairment to actively participate in classroom activities and interact with their sighted peers on an equal footing. This fosters a sense of inclusion, promotes social integration, and helps break down barriers between students with and without visual impairments. Rahmat and Jon (2023), asserted that group discussion fosters interaction and learning, provides encouragement and motivation, and fosters respect for other people's ideas. Students with visual impairment bring unique perspectives and insights to group discussions. Their experiences and approaches to problem-solving may differ from their sighted peers, leading to enriched discussions and diverse learning outcomes. The inclusion of students with visual impairment broadens the range of perspectives and promotes a more comprehensive understanding of the topics being discussed. Participating in group discussions with sighted peers helps students with visual impairment develop and refine their communication skills. They learn to express their thoughts, articulate ideas, and engage in meaningful dialogue. This is particularly important for future academic and professional pursuits where effective communication is crucial. Yekyung Lee and Ertmer (2006), buttress the significance of participating in group discussions by saying students who participate in deep reflections on their

ideas during meaningful group discussions can experience cognitive benefits. Learners are prompted to reflect on their own ideas as well as to incorporate new ideas into their existing knowledge by exchanging ideas and taking into account others' perspectives.

It is important for educators to create an inclusive and supportive atmosphere that encourages the active participation of students with visual impairment in group discussions. Providing accessible materials, using inclusive teaching strategies, and promoting collaboration and mutual respect among all students can contribute to a successful and beneficial experience for everyone involved.

Depending on library resources was also one of the means that facilitated FAVI learning. Library resources play a crucial role in supporting students with visual impairments by providing them with equitable access to information, promoting independent learning, and fostering inclusivity. Libraries often offer materials in accessible formats such as braille, large print, and audio formats. These resources allow students with visual impairment to access books, articles, and other educational materials independently and at their own pace. Accessible formats ensure that students with visual impairments can engage with the same content as their sighted peers. Libraries may provide access to assistive technologies that enable students with visual impairment to access and navigate electronic resources. These technologies can include screen readers, magnification software, and refreshable braille displays. By utilizing these tools, students can read and interact with digital texts, online databases, and electronic resources effectively. Libraries may have specialized collections that cater to the needs and interests of students

with visual impairment. These collections may include books on visual impairment, disability studies, adaptive technology guides, and resources on assistive techniques. Rasul and Singh (2010), highlighted that libraries play a significant role in students' academics by not only storing books and journals and offering space for student learning but also providing systematically digitized information. Such collections can empower students with visual impairment by providing them with information. Jamil, Tariq and Jamil (2013), investigated the availability and utilization of existing resources in libraries, and discovered that students mostly visit the library for reading books, preparation of assignments, and consume spare time, this is not different from what FAVI did when they visited the library.

Libraries play a vital role in leveling the playing field for students with visual impairment, enabling them to access information, engage in independent learning, and actively participate in academic pursuits. Through their resources, services, and accessibility initiatives, libraries contribute to the educational success and empowerment of students with visual impairments and resources specifically tailored to their needs.

Challenges confronting FAVI included disturbances during teaching and learning, some books not being available in braille, as well as some computers not being user-friendly. Disturbances during teaching and learning as narrated by FAVI came about as a result of the usage of braille during lessons. The braille makes excessive noise whilst being used. This sometimes frustrates the sighted peers as well as teachers. While braille is an essential tool for students with visual impairments, its implementation in a mainstream classroom setting may present challenges that can impact both the student

using braille and their sighted peers. The sound of embossing machines or the movement of braille materials on desks can be distracting to other students, especially in quiet or focused learning situations. The heightened tactile interaction may also inadvertently disrupt the concentration of neighboring students. Khochen-Bagshaw (2011) and Kimeto (2010), noted some challenges associated with the use of braille as lack of tactual acuity, slow reading, students having negative attitudes towards learning the braille, as well as limited materials for braille writing. This current finding adds to enumerable challenges, that is the disturbances that result from the noise that the braille embosser generates during its usage in the regular classroom.

Another challenge that confronted FAVI in their academic pursuit was the fact that some of their test books were not available in braille format. The limited availability of books in braille or alternative accessible formats can hinder FAVI's access to information. This can lead to a disparity in their ability to study specific subjects or engage with materials that are not readily available in accessible formats. In turn, this may impact their academic performance and overall academic experience. Brazier (2003) and Adetoro (2015), have evidence that the availability of information materials for the use of the visually impaired in advanced countries is grossly inadequate. Likewise, Adetoro (2011), pointed out that even though braille was in a high level of utilization but they were not readily available. Coursebooks that had to be in braille format for easy use by students with visual impairment were not accessible. This posed a huge gap between the students with visual impairment and their sighted peers in the regular classroom as in the case of FAVI in this current study. FAVI have the tendency to be left behind in academics. This

may also hinder the quest to achieve SDG goal 4. That is, ensuring inclusivity and equitable quality education and promoting lifelong learning for all.

Finally, FAVI reiterated that some computers were not user-friendly for them. This challenge arose from computers not having the required software such as JAWS and N.V.D.A. The software facilitates students with visual impairments' access and usability of the computers. This is likely to create additional barriers, making it more challenging for them to operate software, access online resources, and complete digital assignments independently. This increased dependence on others can limit their autonomy and hinder their academic progress. Eligi and Mwantimwa (2017), discovered that insufficient special ICTs to cater for the needs of visually-impaired students including the non-availability of software such as JAWS, inadequate training on the use of special ICTs, and a shortage of ICT experts were difficulties that confronted students with visual impairment. Ampratwum, Offei, and Ntoaduro (2016), investigated barriers to the use of keyboarding skills and Job Access with Speech (JAWS) among students with visual impairment. The findings indicated that challenges limiting the effective use of computer-assistive technology in the school were more personal than external influences. This contradicts this current finding because the challenges that FAVI had with their computers were in relation to computer software such as JAWS not being instore on them for easy use. That is, the difficulty FAVI had was more of a computer-driving challenge and not a personal challenge as posited by Ampratwum et al., (2016).

In conclusion, these challenges faced by FAVI could lead to feelings of exclusion and isolation within the academic environment. When certain

resources, such as books are inaccessible, it can reinforce a sense of being left out or not fully included in the academic community. This can have negative psychological and emotional effects on students with visual impairment, potentially impacting their motivation and engagement in their academic pursuits. Inaccessible computers and technology can impede students with visual impairment ' efficiency and productivity. When interfaces, software, or websites are not designed with accessibility in mind, it may require additional time and effort to navigate, locate information, or complete tasks. This can place students with visual impairment at a disadvantage compared to their sighted peers, affecting their ability to keep up with coursework, assignments, and academic deadlines.

Influence of sexual health on academic experience of female adolescents with visual impairment

The study investigated the influence of sexual health on the academic experience of female adolescents with visual impairment. The finding indicated that sexual health influenced the academic experience of female adolescents with visual impairment. Issues that had significant influence on the academic experience of FAVI included poor relationships with their peers especially their menstrual period, fear of been teased by male teachers during menstruation, low level of concentration, class attendance, and keeping personal hygiene during menstruation. These challenges relatively affect the academic performance of FAVI. A study found that students who reported poor sexual health were more likely to report lower academic performance and lower levels of engagement in academic activities (Kim, Harty, Takahashi & Voisin, 2018). Similarly, a study revealed that students who reported poor

sexual health were more likely to report symptoms of depression and anxiety, which were associated with lower academic performance (Khesht-Masjedi et al., 2019). In addition, students who contract sexually transmitted infections (STIs) may have to miss classes or take time off from school to seek treatment, which can impact their academic performance. Kim et al., (2018) added that students who reported a history of STIs were more likely to report lower academic performance.

Munro, Hunter, Hossain and Keep (2021), study found that girls who experienced menstrual pain had significantly lower academic performance compared to girls who did not experience menstrual pain. Similarly, the study of Kumbeni, Ziba, Apenkwa and Otupiri (2021), discovered that girls who reported menstrual-related absences had lower academic performance compared to girls who did not report such absences. Menstruation is one of the leading causes of high school girls' absenteeism. Research has found that girls miss about five days per month due to menstruation (Miiro et al., 2018). This, again, buttresses the issue of FAVI's inability to go to class during menstruation which also affects their academics. The findings of Khadr et al. (2018) revealed that sexual and reproductive health, coupled with the experience of sexual assault greatly affected the education and academic achievement of the majority of the adolescents. FAVI were restricted from engaging actively in sexual health related matters for fear of contracting STIs and pregnancy which could in the long run affect their academic engagement as portrayed by the Health Belief Model which posits that an individual's health behavours are influenced by perceived susceptibilty to a health condition.

Chapter Summary

The chapter concludes that female adolescents with visual impairment had below-average sexual health knowledge. The triangulation of qualitative and quantitative data gathered and analysed all affirmed that below average sexual health knowledge. The study further revealed the demographic characteristics that is age and religious background had significant influnce on sexual helath knowledge

FAVI had several sexual health needs which include the need for school counsellors, menstrual needs, and information on how to prevent sexually transmitted diseases. Discussions on the menstrual difficulty in schools became paramount in the conversation, and therefore the request for more experienced and knowledgeable individuals (Counsellors), and menstrual kits were asked for by the adolescents who participated in the study. Again, developmental challenges also confronted FAVI as it popped up in their narration and that also warranted the need for Counsellors.

Culture and health are knotted and manifest through the values, norms, and beliefs of the people in society. Khumalo, Taylor, Makusha and Mabaso (2020), asserted that sexual and reproductive health is a cultural construction that requires embracing a set of various cultural values and norms. Other researchers believe that actions and feelings of sexuality in human beings are culturally controlled because sexual behaviours are influenced or governed by sexuality norms (Achen, Rwabukwali & Atekyereza, 2021). The involvement of family values in shaping FAVI could not be over-emphasized. Parenting and family orientation greatly impacted FAVI sexual health as discussed above. Religion as part of socio-cultural norms also played a significant role in

the sexual health of FAVI. Moral issues discussed with adolescents by the various religious bodies (Christianity and Islam) perhaps influenced the sexual health conditions of FAVI positively. As posited by earlier scholars, traditional beliefs and customs play roles in sexual health as narrated in this current study.

The chapter revealed that female adolescents expressed their sexual feelings; they could appreciate the beauty of others, and they also had a sense of equality. A female adolescent with visual impairment outlined that a male's voice could be used to determine whether one is handsome or beautiful. The general perception is that persons with visual impairment are discriminated against on the grounds of choice of partners for life, however, the narrative of this study shows otherwise.

Seemingly, sexual health influenced FAVI's academic experience. Observing personal hygiene during menstruation could not be omitted as an influence on the academics of female students in many dimensions. Class attendance was affected since it prevented them from participating in class activities. Concentration in class, relationship with male teachers, and relationship with a classmate, male teachers also presented another dimension of the effect that sexual health had on the academic experience of FAVI.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The study aimed to investigate the sexual health and academic experience of female adolescents with visual impairment in Ghana. This chapter presents the summary of the study, conclusions, and recommendations and suggestions for further studies.

Summary of the Study

The study investigated the sexual health and academic experience of Female Adolescents in five inclusive senior high schools in Ghana. Specifically, female adolescents who were visually impaired were selected for the study. The five inclusive senior high schools were Okuapemman Senior High School, Adidome Senior High School, Wench Senior High School, Wa Senior High School, and Sirigu Integrated Senior High School. Seven research questions guided the study (See P. 15). Though all female adolescents with visual impairment were eligible populations for the study, only, female adolescents with visual impairment in SHS 1 and 2 were targeted since those in SHS 3 had completed. Embedded mixed method design guided the study.

A purposive sampling technique was used to select the participating schools for the study. A total of 71 female adolescents with visual impairment participated in the study. Interview-administered questionnaire and semi-structured interview guide were used in collecting the data for the study. Pilot testing was done with 11 female adolescents with visual impairment drawn from the Ghana National College in Cape Coast to fine-tune and strengthen the data collection instruments. The actual data collected from the

questionnaire were analysed using descriptive statistics percentages, mean, standard deviation, and inferential statistics such as ANOVA, t-test whilst thematic analysis was used to analyse the data generated with the semi-structured interview guide.

Key Findings

The following findings emanated from the study;

1. The study revealed that female adolescents with visual impairment had below average level of sexual health knowledge.
2. The results showed that demographic characteristics namely; age and religious background influenced the sexual health knowledge of FAVI, however, the class of participants and the degree of impairment did not influence sexual health knowledge of FAVI.
3. The study found that FAVI had sexual health needs including counselling, information on sexually transmitted diseases, and the need for menstrual kits. Schools did not have school counsellors, and those schools that had counsellors did not discuss issues about sexual health. Sanitary pads were one of the most pressing needs of female adolescents with visual impairment.
4. The study showed that sociocultural norms influenced the sexual health of female adolescents with visual impairment. For instance, family values, religious beliefs, and traditional beliefs/customs influenced the sexual health of FAVI. Religion and traditional beliefs, as well as family values, influenced FAVI's decision-making with regards to sexual-related matters such as when and whom to choose as

a life partner, whether or not to engage in sexual intercourse, and at what age.

5. The finding of the study showed that FAVI's degree of impairment (partial or total) did not affect the way they expressed their sexual feelings; their impairment did not affect their ability to appreciate one's beauty. FAVI had a sense of equality in their day-to-today dealings with their peers. They did not feel segregated in whatever they did among their peers, even though, their impairment affected academic work since they had a challenge reading from the board as a result of their impairment.
6. The finding revealed that female adolescents with visual impairment classroom experiences' included delay in receiving feedback, inability to see clearly from the board, stigmatization, delay in taking tests, and having some form of cordial relationship with some teachers. The study further revealed the ways of facilitating learning by FAVI. This included the use of electronic audio devices such as recorders, having sighted peers read out notes, joining group discussions, and making use of library resources. The finding also showed the challenges confronting FAVI in their academic pursuit. They included disturbances during teaching and learning, some books not available in braille, as well as some computers not being user-friendly.
7. The study showed that sexual health affected female's adolescent with visual impairment academic experience. For instance, menstrual periods during schooling days/hours affected their studies. That is their class attendance, level of concentration on academic exercise during

class hours or contact hours, and relationship with male teachers were affected by students' menstrual cycle. This is because male teachers perhaps did not understand the full impulse of menstruation and therefore had a challenge understanding these students in class during their menstrual periods.

Conclusions

Deducing from the study findings it can be concluded that inadequate sexual health knowledge negatively influences the academic experience of female adolescents with visual impairment. Limited knowledge can lead to an increased risk of sexually transmitted infections, unintended pregnancies, and other sexual health issues.

The study can also conclude that as visually impaired adolescents grow older, their understanding and awareness of sexual health tend to increase, likely due to increased exposure to information and experience over time.

Furthermore, the study can conclude that to effectively support the sexual health of female adolescents with visual impairment, there must be a concerted effort to provide comprehensive education, personalized counselling, and practical resources such as menstrual kits. These measures, supported by appropriate policies and inclusive practices, are essential to meeting the sexual health needs of these students and ensuring their well-being.

Moreover, the study concludes that the degree of visual impairment does not influence the way female adolescents with visual impairment express their sexual feelings there is therefore the need for inclusive and comprehensive sexual health education and support systems that cater to all

visually impaired adolescents, ensuring equal access to information, resources, and services regardless of the severity of their impairment.

Final conclusions can be drawn from the findings of the study that the psychological and emotional well-being of female adolescents with visual impairment is likely to be tempered especially in the classroom setting. As a results of feeling isolated, decreased self-esteem, and lack of confidence in their academic abilities.

Recommendations

Based on the conclusions of the study, the following recommendations are made for the practice and policy formulation;

1. Given the below average level of sexual health knowledge among Female Adolescents with Visual Impairment (FAVI), School authorities should as a matter of priority inculcate the teaching of age-appropriate comprehensive sexuality education (CSE) in Senior High Schools curriculum to help educate adolescents (especially FAVI) adequately on sexual health.
2. Since age and religious background influenced sexual health knowledge of FAVI, School Management Committees (SMCs) should give due recognition to demographic characteristics such as age and religious background in any discourse or policy that seeks to address sexual health of FAVI through targeted policy approach.
3. Parents of FAVI should be encouraged to provide adequate menstrual kits or sanitary pads for their wards. The sanitary pads should be adequate enough to last for the entire academic term.

4. The study recommends that school authorities should inculcate into the teaching curriculum issues concerning proper family values, religious beliefs, and traditional norms. This will ensure that FAVI's obtain the needed information necessary for their sexual health and decision making.
5. Since the degree of impairment does not affect sexual expression, the study recommends that inclusive schools should ensure that both partially and totally visually impaired adolescents have equal access to sexual health information and services. Barriers to access, such as lack of accessible educational materials or support services, should be addressed to ensure that all visually impaired adolescents can benefit from sexual health education and resources.
6. One aspect from the findings of the classroom experiences of FAVI was stigmatization, the study, therefore, recommends that school authorities should orient and re-orient learners on the need to embrace differently-abled students such as FAVI and provide conducive academic environment that promotes teaching and learning for all.
7. School authorities should ensure that schools are equipped with accessible and well-maintained menstrual hygiene facilities. This may include having private, clean, and disability-friendly restrooms equipped with necessary menstrual hygiene products (e.g., sanitary pads, and tampons).

Implication for Practice

There should be efforts to demystify the erroneous impression that persons with disabilities are asexual and that they do not need sexual health

education by society. Research (Panchaud et al., 2018) has reiterated that 74% of students never or only sometimes felt safe expressing their sexual feeling in front of others at school, 51% feared being teased. This implies that there should be a safe environment created in school, especially in the classroom that will enable FAVI to freely express themselves without fear. In an instance where FAVI is in a regular classroom, fellow student needs to be sensitised to accommodate them in the classroom during their menstrual period. Research (Panchaud et al., 2018) has it that 80% of teachers are of the view that they would greatly benefit from separate training specifically on sexual and reproductive health education, however, despite this fate, 78% of teachers reported that their pre-service training covered some topics related to sexual health. This probably explains why FAVI had a challenge with male teachers during their menstrual period. Teacher training institutions must include in their curriculum what male teachers should do whenever female adolescents with visual impairment are experiencing their menstrual period.

As part of the services the Guidance and Counsel Units provide, they should help Heads of Schools and other educational authorities including the Directors of education to understand the unique or sexual health needs of FAVI. Teachers should be encouraged to familiarise themselves with the code of ethics; the aspect which highlights issues pertaining to sexual-related matters and be made aware of sanctions that are there for defaulters. Copies should be printed and made available to all teachers.

Schools should collaborate with healthcare providers to ensure the sexual health needs of female adolescents with visual impairment are addressed. This involves providing access to regular check-ups, screenings,

and counselling services. Schools should create an inclusive learning environment that embraces diversity and fosters a sense of belonging among female adolescents with visual impairment. This involves providing access to extracurricular activities, social events, and peer support groups that promote their social-emotional well-being. More importantly, teachers should endeavour to create congenial classroom environments that are supportive and non-threatening for FAVI. Schools should provide appropriate assistive technology, specialized equipment, and instructional support to facilitate their learning and academic success. Female adolescents with visual impairment may face challenges in accessing comprehensive sexual health education due to a lack of accessible materials, resources, and facilities. Therefore, it is essential for schools to provide accessible sexual health education to female adolescents with visual impairment that is tailored to their learning needs.

Promoting the sexual health and academic success of female adolescents with visual impairment requires a multifaceted approach that involves collaboration, inclusivity, and accessibility. Schools play a critical role in supporting these students, and it is the responsibility of heads of schools, teachers, and directors of education to ensure that they have the necessary resources and support to thrive.

Implication for policy

The study has implications for policy formulation and implementation. Article 29 (6) of the 1992 Constitution of Ghana, Articles 31-35 of Disability Act 2006, Act 715, and Sustainable Development Goals 3, 4, 5, 6 and 8, all acknowledged the right of persons with disabilities access to health and health-related services which includes sexual health. It is in this spirit that the

study entreats policymakers and non-governmental agencies to advocate for inclusive policies that address the unique needs of female adolescents with visual impairment. This may be done by providing policies that promote accessibility, inclusion, and equal opportunities in education, employment, and healthcare.

Again, policymakers and non-governmental agencies should develop measures to deal with sexual assault or abuse. Furthermore, policymakers and non-governmental agencies should ensure that female adolescents with visual impairment have access to sexual health services, including contraception and reproductive healthcare. For example, Disability Act 2006, Act 715 stipulates the need to provide healthcare for persons with disability, nevertheless, it is limited to basic or general healthcare but does not capture sexual health and sexual abuse of persons with disabilities. The Act must therefore be revised to include the sexual health needs of persons with disability.

Policymakers and non-governmental agencies should provide training for educators on how to support female adolescents with visual impairment in their academic and sexual health experiences. This training should include information on how to access materials, assistive technology, and adaptive techniques to enable them to learn effectively.

In conclusions, policies and programs should be developed that address the unique needs of female adolescents with visual impairment in their academic and sexual health experiences. This requires collaboration between policymakers, non-governmental agencies, educators, healthcare providers, and advocacy groups to ensure that policies and programs are inclusive, accessible, and effective.

Contribution to knowledge

In recent times, there has been intensified the call to include PWDs in research. One area that has not received so much attention as far as the PWDs are concerned, is the sexual health of female adolescents with visual impairment. To the best of my knowledge, this is one of the few studies that explore the sexual health and academic experience of FAVI. In the spirit of the SDGs, this study is critical as it brings to light the experiences of a vulnerable population which has received very little attention from the academic community. The insight of this study will therefore broaden the discourse on sexual health of adolescents by adding the perspectives of FAVI.

In terms of methodology, this study has added to the growing scientific literature that combines both quantitative and qualitative methods to investigate a critical social phenomenon – in this case sexual health of FAVI. The study has also demonstrated the critical role of qualitative data analyses software (for example, Nvivo which was used in this study) in enhancing trustworthiness of social research that employs qualitative methods of inquiry.

Suggestions for Further Research

One of the major limitations of this work is that the academic performance of female adolescents with visual impairment was not considered. Therefore, it will be insightful for future studies to be conducted on the relationship between sexual health and academic performance of female adolescents with visual impairment in Ghana using either quantitative or qualitative method or both.

Future studies should also explore the sexual health of male adolescents and how that influences their learning experience in school.

Insights from such studies will ensure that no one is left behind in our efforts toward achieving sustainable development goals.

Other researchers can also look at the sexual health of adolescents with various disabilities and their academic experiences. This will enable us to appreciate the sexual health issues among this vulnerable group across various forms of disabilities and how that can be leveraged for better policies toward ensuring that no one is left behind.

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APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL FOUNDATIONS

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

QUESTIONNAIRE FOR FEMALE ADOLESCENT WITH VISUAL IMPAIRMENT

This questionnaire is designed to elicit information on ***sexual health and academic experiences of female adolescents with visual impairment***. Information given is solely for academic purpose. You are assured that no information will be revealed to any third party without your consent. Thank you.

QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

Please, you are required to tick (√) the appropriate responses.

1. Age Range: …
   10-14 [ ]
   15-19 [ ]
   20-24 [ ]
2. What is your class?
   Form 1[ ]
   Form 2[ ]
   Form 3[ ]
3. What is your programme of study?
   General arts [ ]
   Business [ ]
   Science [ ]
   Home economics [ ]
4. Degree of impairment
   Partially sighted [ ]
   Total blindness [ ]
5. Religious background
   Christianity [ ]
   Islamic [ ]
   Traditional [ ]

SECTION B: Knowledge of Sexual Health

6. Does sexual health include a sense of confidence and self-respect?
   - Yes
   - No
   - Not sure

   Give reason for your answer to Question 9

   ……

7. Does sexual health include how you see yourself as able and beautiful?
   - Yes
   - No
   - Not sure

   Give reason for your answer to Question 10

   ……
   ……

8. Does sexual health include a sense of freedom from unwelcome sexual activities (unfriendly touches, kisses, flattering)
   - Yes
   - No
   - Not sure

   Give reason for your answer to Question 11?

   ……..

9. Is sexual health a key part of our identity as human beings?
   - Yes
   - No
   - Not sure

   Give reason for your answer to Question 11?

   ……..

10. Our fundamental human rights to privacy, a family life, and living free from discrimination forms part of sexual health.
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 12?

    ……

11. Can sexual intercourse cause sexually transmitted diseases?
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 10.

    ……

12. Sexually transmitted diseases (STDs) can cause a woman to be unable to have a baby.
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 11.

    ……

13. A girl's hymen (i.e. a thin piece of skin that partially covers the entrance of the vagina) does not tear without sexual intercourse.
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 12

    ……

14. Being sexually attracted to a person of same sex is unnatural (against nature or religion).
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 13

    ……

15. A female who menstruation for the first time can become pregnant after having sex.
    - Yes
    - No
    - Not sure

    Give reason for your answer to Question 14

    ……..

16. Pregnancy can occur if there is sexual intercourse.
    - Yes
    - No
    - Not sure

    If yes, give reason for your answer to Question 15

    ……

17. One may become pregnant even after one act of sexual intercourse.
    - Yes
    - No
    - Not sure

    If yes, give reason for your answer to Question 16

    ……

18. Sexual intercourse before marriage can never lead to pregnancy.
    - Yes
    - No
    - Not sure

    If yes, Give reason for your answer to Question 17

……

19. Having no sex is the best method to prevent pregnancy.
    - Yes
    - No
    - Not sure

If yes, Give reason for your answer to Question 18

……

20. There is nothing wrong with engaging in masturbation.
    - Yes
    - No
    - Not sure

If yes, Give reason for your answer to Question 19

……

21. Does sexual health mean forcing someone into a sexual relationship against his or her wish?
    - Yes
    - No
    - Not sure

If yes, Give reason for your answer to Question 20

……

22. It is acceptable to have a physical relationship with person of same sex.
    - Yes
    - No
    - Not sure

If yes, Give reason for your answer to Question 22

……

23. It is acceptable to have a physical relationship with person of the opposite sex.
    - Yes
    - No
    - Not sure

If yes, Give reason for your answer to Question 23

……

24. Sexual health implies a girl loses her dignity if she has sex before marriage.
    - Yes
    - No
    - Not sure

If yes, what makes you think one loses her dignity if she engages in sex before marriage?

……

25. Talking or discussing about sex or reproduction is a sin.
    - Yes
    - No
    - Not sure

If yes, what makes discussing sex or reproduction a sin?

……

26. Does sexual health imply that adolescent females are impure/dirty during their menses?
    - Yes
    - No
    - Not sure

    If yes, what adolescent females impure or dirty during menses?

……

27. Does sexual health imply that adolescent females have a right to say no to sex?
    - Yes
    - No
    - Not sure

    If yes, what makes you think adolescent females have the right to say no to sex?

……

28. Does sexual health imply that it is okay to force sex on somebody for enjoyment or fun?
    - Yes
    - No
    - Not sure

    If yes, what makes you think it is okay to force sex on somebody for enjoyment?

……

29. Does sexuality affect sexual health?
    - Yes
    - No
    - Not sure

    If yes, how does sexual health affect sexuality?

……

30. Does sexual health mean having the ability to decide one's sexual preference?
    - Yes
    - No
    - Not sure

    If yes, what constitutes one's sexual preference?

……

31. If someone I know were homosexual, I would still be his or her friend.
    - Yes
    - No
    - Not sure

    If yes, why would you want to be friends with someone who is homosexual?

……

APPENDIX B

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL STUDIES

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

INTERVIEW GUIDE FOR FEMALE ADOLESCENT WITH ADOLESCENT IMPAIRMENT

This interview guide is designed to elicit information on ***sexual health and academic experiences of female adolescents with visual impairment***. Information given is solely for academic purpose. You are assured that no information will be revealed to any third party without your consent. Thank you.

Section A:

SEXUAL HEALTH NEEDS OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

1. Do you frequently receive information on how to keep yourself safe from contracting STIs?
2. Does the school organize a forum on how girls can manage themselves during menstruation?
3. Does your school counsellors meet you (i.e. all girls) to educate you on developmental changes of adolescent girls?

SECTION B: EFFECTS OF SOCIO-CULTURAL NORMS ON SEXUAL HEALTH OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

4. Please, tell me about the cultural norms that affect your sexual health i.e. how their tradition affect their sexual health). (Probe for information on the belief system and how they affect their sexual health).
5. How does the cultural norms of your tribe prevent you from getting a lot of information on your sexual health/sexuality (ie. Relationship with opposite sex, menstrual health, physical development)
6. How does your family values influence your sexual health issues?
7. How does your religion beliefs influence your sexual health?

   (Probe: On condom use, premarital sexual, masturbation, watching of pornographic materials.)

(Probe for choice of partner and whether they are able to freely approach a guy they feel attracted to? How and why?)

SECTION C: EFFECTS OF SEXUAL HEALTH ON ACADEMIC EXPERIENCE OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

8. Please, tell me about the effects your sexual health have had on your academic experiences i.e. how does their sexual health has affected their learning process such as class attendance, ability to concentrate on class activities. (Probe for information on how it has affected them emotionally and psychologically).
9. How has your sexual health affected your relationship with the following:
   i. your peers/classmates? Can you give me some examples?

ii. teachers?

10. Are there any other issues about your sexual health that you will like to discuss with me? Please feel free and let us discuss.

SECTION D: ONE'S DEGREE OF VISUAL IMPAIRMENT AND SEXUAL HEALTH

11. How does your partial or total blindness affect the following areas of your life?

i. relationship with colleagues? *Probe further for information on whether they make them feel different.*

ii. sexual health? *Probe further*

iii. sexual feelings towards the opposite sex and vice-versa?

iv. appreciation of one's physical beauty.

Section E: Academic experiences of female adolescents with visual impairment

12.What are your academic experiences regarding, paying attention in class, concentrating on academic work, attending classes? Probe… How do teachers and peers perceive and interact with you as FAVI in this academic setting?

13.How do you cope with the challenges of academic life, such as reading, writing, taking notes, studying, and participating in class?

14.What educational support services are available to you as FAVI in this school?

15.How effective are these support services in meeting your academic needs?

Thanks for the information

APPENDIX D: INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697
Email: depa@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref:

Your Ref:

20th October, 2021

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION
MR. ERIC ABODEY

We introduce to you Mr. Abodey, a student from the University of Cape Coast, Department of Education and Psychology. He is pursuing Doctor of Philosophy Degree in Special Education and he is currently at the thesis stage.

Mr. Abodey is researching on the topic:

"SEXUAL HEALTH AND ACADEMIC EXPERIENCE AMONG FEMALE ADOLESCENT WITH VISUAL IMPAIRMENT IN GHANA."

He has opted to collect data at your section for his Thesis work. We would be most grateful if you could provide him the opportunity and assistance for the study. Any information provided would be treated strictly as confidential.

We sincerely appreciate your co-operation and assistance in this direction.

Thank you.

Yours faithfully,

Ama A. Ocran (Ms.)
Principal Administrative Assistant
For: **HEAD**

Attn: Unit Head

Attn. Asst Head. Aca
Pls assist

28-10-2021

APPENDIX E: SAMPLE OF TRANSCRIBED DATA

SEXUAL HEALTH NEEDS OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

Do you frequently receive information on how to keep yourself safe from contracting STIs?

Sir, anytime I go home my parents will advise me to stay away not to get those diseases and anytime I am coming to school too they advise me. It has help me because how they talk to you, yourself you feel like if I do this, this and that will happen to you. Like in advising you they put some sort of fear in you so even when you are doing that and you think of what they told you, you will not do it.

EFFECTS OF SOCIO-CULTURAL NORMS ON SEXUAL HEALTH OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

How does your family values influence your sexual health issues?

Sir for that one they will tell me that if I become pregnant or I do something that I am not supposed to do in the family, they will not accept me in the family again, if they accept me, they will not take care of me. For them what they always tell me is that you can see they are trying their best to cater for me so if I do anything in which is not acceptable in the family, like I have go against the family rules so that one... Sir they are suffering to take care of you so that one day you will come and take care of them, so let's take it that I didn't complete the school and I became pregnant and I go home they will still take care of me in which I was supposed to finish and cater for them so my burden is still on them like that.

EFFECTS OF SEXUAL HEALTH ON ACADEMIC EXPERIENCE OF FEMALE ADOLESCENTS WITH VISUAL IMPAIRMENT

What are the challenges in managing yourself during menstruation? (*probe further*….how do you get menstrual aids such as pads)

As an adolescent girl, if you are menstruating, some people like i don't know they stigmatize you. They don't want you to come closer to them. They will say you are impure. Even in the house you will not be allowed to cook or fetch water for elders to drink. sir, because if you fetch the water you are going to pollute it because you yourself you are not pure. it is on religious grounds and some people too it is their tradition. sir i can even make a reference to just this year 2021 Ghana Most Beautiful when they were doing something about Nature, a girl called Efua from Eastern Region; she acted on menstruation. When a girl is menstruating, they will walk you inside a room, they will not allow you to come out and you will be there alone in the room until you finish the menstruation but they will be providing you food but you will not come outside. this done because the woman in her menstrual period is seen unclean.

ONE'S DEGREE OF VISUAL IMPAIRMENT AND SEXUAL HEALTH

How does your partial or total blindness affect the following areas of your life: relationship with colleagues?

I do not feel different from my colleagues because we are all human beings and what a friend is having, I am also having. What they are able to do, I can also do same. Sometimes if I see somebody who is sighted let's take it like we all here and I go and knock I feel like … first I use to ask myself why that God too didn't give me the eyes but rather making me a blind so that one… I can say that I always depend on the sight of others. Apart from that, I do not feel different.

APPENDIX F: CODING FRAME

Codes	Key themes
Menstruation, Counsellors	**Sexual health needs (Major Theme)** • Contracting STDs • menstrual needs • contracting diseases • developmental changes,
Family, Culture, Belief	**Socio-cultural Norms (Major Theme)** • family values, • religious beliefs, • traditional beliefs/customs
Feelings, beauty, physical, impairment, blindness, degree, relationship	**Degree of impairment influence (Major Theme)** • expression of sexual feelings • appreciation of one's beauty or physical beauty • Sense of equality
Attendance, menstruation, academic	**Sexual health and academic experience (Major Theme)** • observing personal hygiene during menstruation • challenges during menstruation • class attendance • level of concentration • classmate • male teachers **Academic experience(major theme)** • Cordial relationship with some teachers
Braille Computers Library Readers Audio Recorders Stigmatization Feedback	• Delay in receiving feedback • Difficulty in seeing from the board • Delay in taking test • Stigmatization • Use of audio recording • Having sighted peers read out notes • Group discussion • Library resources • Disturbances during teaching and learning • Some books are not in braille • Computers not user-friendly