

UNIVERSITY OF EDUCATION, WINNEBA

**HIV/AIDS KNOWLEDGE AND SEXUAL BEHAVIOURS AMONG ADOLESCENTS
WITH HEARING IMPAIRMENTS IN SOME SELECTED SPECIAL SCHOOLS IN
GHANA**

BY

Issaka Cecilia Alimatu

(M. Phil- SPECIAL EDUCATION)

AUGUST, 2015

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A Thesis in the Department of Special Education, Faculty of Education, submitted to the School of Graduate Studies, University of Education, Winneba in fulfillment of the requirements for award of the Doctor of Philosophy (Special Education (EHI) degree.

August 2015

DECLARATION

I, Issaka Cecilia Alimatu declare that this Thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE:

DATE:

Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis as laid down by the University of Education, Winneba.

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Thanks to God; the giver of life and wisdom

DEDICATION

To the loving memory of my late parents
Issaka Keliou and Ayishetu Issaka
for giving me an earlier foundation in Education.



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LIST OF ACRONYMS

ABC	Abstinence, Be faithful and Condom usage
ACHR	African Charter on Human Rights
APA	American Psychological Association
ASL	American Sign Language
AIDs	Acquired Immune Deficiency Syndrome
CD4	Antigens known as CD4 and T cells which when destroyed by HIV makes the defense mechanism in the body weak
CRPD	Convention on the Rights of Persons with Disabilities
CRC	Convention on: the Rights of the Child
DPOD	Disabled People Organizations Denmark
DAD	Danish Association of the Physically Disabled
DAB	Danish Association of the Blind.
dB	Decibel(s) Unit of measuring sound in hearing
GES	Ghana Education Service
GSPD	Ghana Society of the Physically Disabled
GFD	Ghana Federation of the Disabled,
GAD	Ghana Association of the Blind
HIV	Human Immunodeficiency Virus
H I	A person with hearing impairment
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICCPR	International Covenant on Civil and Political Rights

KATH	Komfo Anokye Teaching Hospital
MTC	Mother to Child (Transmission of HIV)
NGO	Non Governmental Organization
PWD	Persons with Disabilities
PTA	Pure Tone Average
SPSS	Statistical Package for Social Scientists
Students	Persons with hearing impairment who attend special schools in Ghana
SSA	Sub-Saharan Africa
STI	Sexually Transmitted Infections
SIV:	Simian immunodeficiency virus
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UDHR	Universal Declaration of Human Rights
UDHR	Universal Declaration of Human Rights
UDHR	Universal Declaration of Human Rights
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

ABSTRACT

The central aim of this sequential explanatory mixed method research aimed at exploring HIV/AIDS knowledge and sexual behaviours of adolescents with hearing impairments (HI) in some selected special schools in Ghana. This study mixed method designs was employed to achieve the aim. Self-constructed questionnaires were administered to three hundred and ten (N=310) adolescents from four (4) special schools in four regions of Ghana. Self-structured questionnaire, which made up of HIV/AIDS Knowledge and sexual behaviour scales, were used in gathering quantitative data. In collecting qualitative data, interviews were used. SPSS software version 17.0 was used to summarize quantitative data. Main data analytic strategies used in the study included frequency distribution tables, Measures of central tendency (mean) and dispersion (standard deviation), t-test and correlations. Open, axial and selective coding systems were used to analyze qualitative data. Results showed that although adolescent with HI were aware of HIV/AIDS, they had no knowledge of HIV/AIDS; most of them were engaged in sexual behaviours that placed them at high risk of contracting HIV. In addition, study disclosed that risky sexual behaviours could be predicted from adolescent with HI lack of knowledge of HIV/AIDS. There was a statistical significant difference between female and male adolescents' knowledge of HIV/AIDS as well as their risky sexual behaviours. Findings have significant implications on adolescents with HI as well as educational programming in Ghana. It is recommended that GES should develop policies and programmes that support collaboration among stakeholders. At family and community level, adequate information should be provided for adolescents with HI. This will help fill the HIV/AIDS information gap between adolescent with HI and their hearing counterpart. Finally, at the school level, curriculum designers should include appropriate HIV/AIDS education programmes in their programme planning.

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

This sequential explanatory mixed method study is about HIV/AIDS knowledge and sexual behaviours of adolescent with hearing impairments (HI). In Ghana, sex related issues are more often not discussed openly irrespective of people's educational or socio-economic background. This is largely due to traditional norms which mostly forbid open discussion of sexual issues especially among youngsters. Thus, discussions on sexual promiscuity among the youth are subjects nearly every parent would probably avoid rather than engaged in. However, the issue is real and avoiding discourses on it only puts the youth at risk of contracting the dreadful HIV/AIDS disease which is known to be transmitted mostly through sex.

The Acquired Immune Deficiency Syndrome (AIDS) epidemic has been one of the most devastating health issues in human history. The disease continues to ravage all categories of people, including the deaf, throughout the world (Fiona, 2009). Acquired immune deficiency syndrome (AIDS) resulting from HIV infection is the leading cause of death among young adults, particularly in sub-Saharan Africa (SSA) (Aderemi, 2011). The UNAIDS (2008), reported that an estimated 33 million people live with HIV globally, with 2.7 million newly infections and 2 million deaths in 2007. So far, HIV has claimed at least 25 million lives worldwide and is thus a great threat to development. (UNAIDS, 2008; WHO, 2008) Reported that In 2007, sub-Saharan Africa (SSA) was home to two thirds of the world's HIV population. Moreover, over two thirds of the new infections and over three quarters of global HIV-related deaths occurred in sub-Saharan Africa (WHO, 2008). Although recent reports state that HIV

infection is either stabilizing or declining in most of the sub-Saharan African countries, its prevalence is still high and unacceptable (UNAIDS, 2008). As such, it might take a very long time for the region to recover from the poverty, loss of human potential, and threat to cultural values HIV imparts. The HIV epidemic is unpredictable and people the world over must be prepared in terms of knowledge and awareness to tackle whatever surprises the epidemic may have in store.

The first case of AIDS in Ghana was diagnosed in 1986 and by 2004, approximately 400,000 Ghanaians were estimated to be HIV positive and this number is expected to reach 500,000 by 2015. HIV prevalence rates have increased from 2.6 percent in 2000, to 3.6 percent in 2003, and 3.1 percent in 2004 (National AIDS/STI Control Programme, GHS, 2005). Within this general pattern are considerable variations by geographic regions, gender, age, occupation, and to some degree, urban-rural residence. According to the 2003 sentinel surveillance report based on clients of antenatal clinics, prevalence rates in the country's ten regions varied from 2 percent in the Upper West Region to around 4 percent in Greater Accra, to almost 7 percent in the Eastern Region. These regional data remains very similar to the 2004 Sentinel Survey. These pockets of high rates indicate that "severe epidemics, by Ghana standards, are raging in various non-contagious parts of the country" (Ghana AIDS Commission, 2002).

According to Pennington (2007), heterosexual sex (80.0%) is the main mode of transmitting HIV infection. Factors contributing to this include lack of access to sexual health and HIV/AIDS information, among other things. HIV infection affects the health, productivity and income of the masses. It is likely to predominantly impact on the vulnerable populations - people with

disability (PWD), the poor, women and children (Aderemi, 2011). A global mail survey on HIV/AIDS and disability indicates that HIV/AIDS is a significant and almost wholly unrecognized problem among disabled populations worldwide (World Bank and Yale University 2004).

People with disability constitute the world's largest minority group (United Nations, 2006). About 650 million people are estimated to be living with various forms of disability worldwide, and 80.0% live in developing nations (Groce, Trasi and Yousafzai, 2006). In addition, if one assumes that 10.0% of any population has some form of disability, Ghana, with a population of 25 million, would have 2.5 million citizens living with one form of disability or another. This group often lacks access to basic infrastructure, particularly in Ghana, where the issue of disability remains largely charity-orientated rather than being orientated around human rights (Lang & Upah, 2008). There are currently no functional legal instruments to further the course of PWD in the country, despite Ghana being a signatory to international legal instruments regarding the rights of this group. Therefore, Ghanaians with disability are discriminated against in all spheres of life, including HIV-related services. More often than not, such services are not accessible to PWD as a result of socio-attitudinal and physical barriers placed in their way by the non-disabled.

Regarding the hearing impaired and HIV/AIDS, a study conducted in 2004 to determine the level of awareness of HIV/AIDS among hearing impaired teenagers in the Savelugu-Nanton District of the Northern Region, revealed that the teenagers who participated in the study had general idea about HIV/AIDS. However, the study indicates that the teenagers hearing impaired

demonstrated sufficient gaps in the knowledge of how the disease is transmitted, its impact, prevention and attitudes that lead to its transmission (Amenyaku, 2004). A similarly study in 2011 in the Northern Volta of Ghana also shows that, as many as forty-eight percent (48%) of respondents regarded the disease as a myth or curse (Tilibe, 2011)

In the absence of a cure and/or vaccine, the best approach to HIV is to focus on prevention. However, preventative measures that are presently available do not target persons with hearing impairment despite their vulnerability to HIV infection. The hearing impaired persons experience a double burden in relation to the increased risk of HIV/AIDS, infection and a reduced access to prevention, treatment and care services (Aderemi, 2011). Like any individual, the hearing impaired person has a right to good life and good health. Even though health services are available for all persons, their accessibility may depend upon factors, such as one's ability to pay for the cost, proximity and, of course, ability to communicate one's needs effectively. However, the hearing impaired persons may not be able to express themselves when it comes to accessing certain basic needs with some professionals, such as medical practitioners and other professional in other filed of discipline because of communication barriers (Ellen, 2003).

Even though sign language has been the medium of communication amongst the deaf in most countries, in Ghana, it is relatively quite new and something which is much more restricted to only special schools for the deaf. This accounts for the reason why the use of sign language is not well known in Ghanaian communities (Naso, 2008). In effect, there are relatively few sign language interpreters for the deaf at public places and only few who can understand sign language. The use of sign language was mentioned in the Ghana Disability Act/ law, and one

would have thought that after the passage of the Disability Bill in 2006, structures would have been put in place to meet the communicational needs of persons with hearing impairment and to facilitate the learning of sign language by non-disabled persons since it is the only means of interacting with the deaf. However, nothing of that sought has been done (Disability act).

The hearing impaired persons, a vulnerable group whose major mode of communication in Ghana is sign language, have often been sidelined when it comes to issues regarding HIV and AIDS education campaigns. For instance, Sleek (1998) has argued that most often information is not made accessible or disseminated in an appropriate way to suit the hearing impaired. She/he argues that written materials are often incomprehensible to this group, because sign language is structurally and grammatically different from that of the English language. The author further argues that the average deaf person reads a fourth or fifth-grade level.

Similarly, Ellen (2003) notes that literacy rate for disabled individuals were as low as 3% globally. Quiet apart from that, they are not able to actively acquire information from listening to the news from the radio/television and so will forfeit a lot of HIV prevention messages that their hearing counterparts may benefit from (Marcus, 1995). Marcus reveals that about 1700 deaf Americans have died from AIDS and about 300 new cases diagnosed each year. In addition to this, about 25,000 deaf people are said to be living with the diseases as indicated by experts attending a 1993 conference on AIDS.

There is the view that all stakeholders, especially those undertaking HIV/AIDS activities, need to strengthen their awareness interventions. If this major area of focus under the Ghana National

HIV/AIDS Strategic Framework is neglected, HIV/AIDS will rob employees of the labour force, providers and caregivers of families and teachers in communities. It has also been suggested that AIDS will continue to pressurize health sector resources needed to treat other health problems. The Ghana National HIV/AIDS strategic Framework II (2006-2010) represents a coordinated national response to address HIV/AIDS in the country. The strategy document is a comprehensive multi-sectoral plan through which all sectors, public and private partners, non-governmental organizations and donor institutions can collaborate on the prevention, care and treatment of HIV/AIDS (National HIV/AIDS Strategic Framework II, 2006-2010.) This policy document has identified seven thematic areas of focus as follows:

- Policy, Advocacy and Enabling Environment
- Prevention and Behavioral Change
- Coordination and Management of the Communication Decentralized Response
- Mitigating the Social, Cultural legal and Economic Impacts
- Monitoring and Evaluation, surveillance and Research
- Resource Mobilization and Funding Arrangement.

In all the above strategies, no provision is made for the deaf in Ghana. Lack of knowledge about HIV/AIDS may contribute to a high incidence of hearing impaired persons being infected. A pilot study in Nigeria by Sangowawa, O. A., Owoage, E., T. & Faseru, B. (2004) to determine the extent of knowledge of the epidemic among deaf children indicated that they have insignificant knowledge of HIV/AIDS. This study further indicated that deaf persons were aware that HIV could be transmitted through semen and blood, they, however, doubted the

possibility of getting infected by a healthy looking partner and even having unprotected sex once with an infected person. The study also indicates that forty seven percent (47%) of the respondents were of the view that HIV/AIDS is curable. This is definitely an indication that the campaign on HIV/AIDS is not going down well with persons who are deaf. Even though there is no available data on the number of hearing impaired Ghanaian infected with the virus, it is generally perceived that there is high incidence of HIV/AIDS amongst the deaf communities.

This revelation may point to the fact that the deep understanding of the threat of HIV/AIDS has not gone down well with deaf persons which can be attributed to lack of effective communication. The study by Sangowawa et al. (2004) further reveals that, up to 40% of the respondents involved in their Study held the view that HIV/AIDS is curable, an issue which resumes the central part of all HIV/AIDS educational programmes. Even though this study was carried out in Nigeria, the problem identified may not be different from that of Ghana regarding the difficulties deaf individuals have in understanding the HIV/AIDS prevention programmes. This may be an indication that the campaign programmes against HIV/AIDS is either not going down well with persons who are hearing impaired or it is misunderstood. Among the hearing impaired people, the statistics often quoted is an assumption; it will be erroneous for one to believe that the prevalence rate and incidence of HIV/AIDS amongst the deaf people will be negligible since no empirical figures are available.

Generally, a lot of resources have already been used in attempting to curb HIV/AIDS. For example, Ghana spends close to \$7 million of USAID annual aid to Ghana on HIV/AIDS activities. Projects that have so far benefited from the fund include HIV/AIDS management and

advocacy programmes. Another \$18 million is made available yearly to Ghana for integrated family health activities (USAID, 2005).

In spite of the fact that the Ghana Aids Commission has spent so much on HIV/AIDS activities, a review of current projects revealed that little is done to support the hearing impaired with vital health information on high priority diseases such as HIV/AIDS, tuberculosis and malaria, for example. The British Council with support from the British High Commission engaged the services of a deaf film making company (Remark!) in the United Kingdom to produce an HIV/AIDS video for young deaf Ghanaians. This has been the first and only of its kind so far. Apart from the fact that it is the only attempt, the problem is that many people erroneously assume that American Sign Language (ASL) and English are closely related and that most ASL users have high English proficiency, but the truth is that ASL has its own grammar and syntax and communicates in concepts (Ghana Aids Commission, 2010). As a result, this HIV prevention material was likely to be culturally inappropriate and linguistically incomprehensible for the deaf and hard of hearing.

Despite the numerous attempts to curb the HIV/AIDS menace, the infection rates remain a threat to development countries. In 2006, for instance, a report by UNAIDS/WHO (2006) showed that about 39.5 million people were said to be living with HIV, 4.9 million new infections, and 2.8 million representing 65% in Sub-Saharan Africa. The report also indicated that, In addition, about 2.9 million people were noted to have died of AIDS related diseases. The prevalent rate of HIV and AIDS in Ghana since its discovery in 1986 has since increased from 1.5% to 3.2 in 2006 as indicated in the 2006 HIV sentinel surveillance report (NACP/GHS, 2007). The current

situation poses serious threat to persons with hearing impairment and serves as a challenge to development. Organizations, academic institutions and donor agencies are encouraged to do more to improve on communication needs and the well being of persons with hearing impairment (Robert, 2006).

1.2 Statement of the problem

In the absence of a cure and/or vaccine, the best approach to HIV is to focus on prevention. However, preventative measures that are presently available in Ghana do not target persons with hearing impairment despite their vulnerability to HIV infection. Comprehensive sexuality education of adolescents is a key component of the global HIV response. All categories of adolescents have the right to appropriate and informative sexuality and HIV prevention education, regardless of whether they have a disability or not.

In Ghana, even though there are quite a number of efforts to educate the public on the dangers of HIV and AIDS, it appears that the mode of communication fails to address the unique needs of persons with hearing impairment. This is because most of the awareness campaign programmes by the government and by Non-Governmental Organizations (NGOs) come mainly through the mass media and through educational materials which persons with hearing impairment often have limited access to, as it is presented either in spoken or written languages. As indicated earlier this communication barrier is also present in medical settings by health care providers as they also do not use or understand sign language. The result is that the typical health education programmes as a means of combating the spread of HIV and AIDS may not meet the needs of the deaf in the various communities in Ghana. Adolescents with hearing impairment, like all

other PWD, have been neglected in the HIV/AIDS outreach programmes due to the misconceptions that they are not sexually active, not likely to use drugs and alcohol, and are less likely to be sexually abused (Groce, 2003), and hence do not need sex education.

Previous studies document shows that adolescents with disability are sexually active, like their peers without disability (Kef & Bos, 2006; Wiegerink, Roebroek, Donkervoort, Stam, & Cohen-Kettenis, 2006), and are over three times more likely to be raped than the non-disabled (Groce, 2000). Furthermore, the belief held in some societies that a man infected with HIV can be cured by having sex with a virgin is making such men have sex with women and girls with disability who are often assumed to be virgins (Groce & Trasi, 2004), thereby exposing them to the risk of contracting HIV. In addition, studies conducted in developing countries suggest that social sanctions and stigma associated with marrying PWD may lead to serial and multiple sexual relationships (Choruma, 2007; Mulindwa, 2003). Considering the seemingly low level of knowledge and possibly higher risky sexual behavior of adolescents with hearing impairment, there is a pressing need to obtain data on the knowledge and sexual behaviors of the deaf, which will help to design and provide them with appropriate and comprehensive sexuality and HIV prevention education to reduce their exposure to HIV infection.

1.3 Research objectives

The central objective of this sequential explanatory research is to appreciate students with hearing impairment knowledge of HIV/AIDSs, their risky sexual behaviors and how they guard themselves against HIV/AIDSs infection. The study also aims at finding out if there exists a significant difference between female and male students' knowledge of HIV/AIDSs; and if

students' risky sexual behaviors could be predicted from their level of knowledge of HIV/AIDS. The overall aim of the study is to suggest guidelines for effective HIV/AIDS educational programming for persons with hearing impairment in Ghana. Specifically, the study aimed at:

1. Determining adolescents with hearing impairment knowledge of HIV/AIDS and how do they construe HIV/AIDS infection.
2. Exploring risky sexual behaviours that place adolescents with hearing impairments at risk of contracting HIV/AIDS.
3. Appreciating phenomenological experiences adolescents with hearing impairment have about their sexual partners' use of strategies/contraceptives (e.g. condom) in protecting themselves against HIV/AIDS.
4. Measuring relationships between adolescents' knowledge of HIV/AIDS; their sexual behaviours, age and level of education.
5. Establishing whether female and male adolescents with hearing impairments' knowledge of HIV/AIDS and their sexual behaviour differ significantly.

1.4 Research Questions and hypothesis

In order to achieve the stated research objectives, sequential explanatory research questions were developed to guide the study:

- 1) What knowledge do adolescents with hearing impairments have about HIV/AIDS, and how do they construe HIV/AIDS infection?
- 2) What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDS, and how do they guard themselves against HIV/AIDS infection?

- 3) What phenomenological experiences do adolescents with hearing impairments have about their partners' sexual activities (e.g. their use condom of during sex)?
- 4) Are there relationships between adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour/practices, age and level of education?
- 5) Do adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour differ significantly due to their gender?

Hypothesis:

- H₀: There is a significant relationship between adolescents with hearing impairments' Knowledge of HIV/AIDs and their sexual behavior, age and level of education.
- H₀ Female adolescents with hearing impairments have more knowledge of HIV/AIDs than their male colleagues.
- H₀ Male adolescents with hearing impairments more likely to engage in risky sexual behaviours than their female colleagues.

1.5 Justification for the study

In Ghana, several studies had been undertaken to document HIV and AIDS knowledge, attitudes and sexual behaviours of adolescents, and the focus now is on determining effective interventions, whereas nothing seems to be available on adolescents with disabilities. Such studies are necessary to provide baseline information for tailored sexuality and HIV education for persons with disabilities, particularly persons with hearing impairment.

Despite a call for research on disability and HIV/AIDS by Groce (2004), none of the prevailing studies are primarily targeted at adolescents with hearing impairment. Currently, the only available papers on HIV/AIDS and disability are in Nigeria, three of which focused specifically on the deaf population in Nigeria (Groce et al., 2007; Olawuyi, 2006; Osowole & Oladepe, 2000). The remaining papers focus on the deaf and people with leprosy (Enwereji&Enwereji, 2008). Two of these papers compared the deaf and blind population with the non-disabled (Groce et al., 2007; Otte et al., 2008).

Generally, Planners and administrators of HIV/AIDS education are saddled with the responsibility of making decisions and implementing policies that would be effective and functionally, hence this study will provide veritable indicia for effective HIV/AIDS programmes and activities for the hearing impaired community. The area of exploration in Ghana is fairly new and so findings of the study will serve as data base on the levels of knowledge, attitudes and behavior of the deaf for the country. This will help individuals, organizations, agencies and institution in the country that are interested in awareness creation to offer better and appreciable service to the hearing impaired in Ghana as well as inform the strategies of the Ghana National AIDS Commission to include the deaf population.

HIV/AIDS education for the hearing impaired is more or less an emerging concern in discourse, and practice; hence this study provides additional literature on this subject. Samowitz et al, (1989) suggest that properly channeled sexuality and HIV/AIDS education will not only increase the knowledge of persons with disability, but will also equip them with skills for modifying sexual behavior. However, such educational packages are not yet available in Ghana. Thus, the

current study will assess and compare the levels of HIV/AIDS knowledge, attitudes and sexual behaviors of deaf students in Ghana. This will involve both quantitative and qualitative methods of data collection from deaf students. It is hoped that this study will contribute to knowledge in the area of HIV/AIDS and the hearing impaired and document the patterns and context of its knowledge, attitude and sexual practices among students with hearing impaired in Ghana.

1.6 Limitation of the study

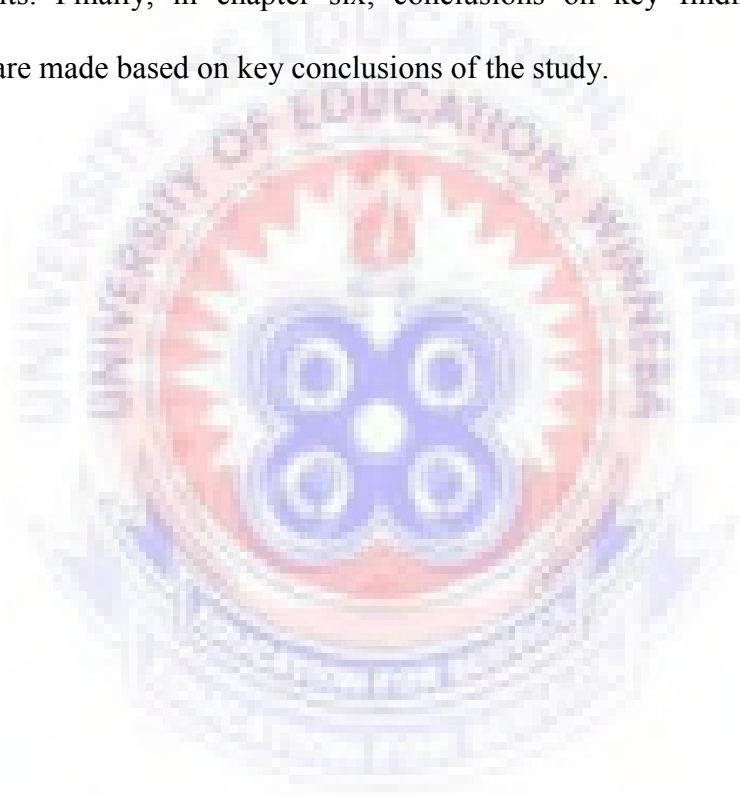
This sequential explanatory mixed method research has its own limitations. The scope of the study was limited to only adolescents with hearing impairment (HI). For this reason, results and findings are limited to only persons with HI and cannot be used to generalize for all for persons with disabilities in Ghana. Secondly, findings from the qualitative phase of the study, though can be used for internal statistical generalization, its ability for external statistical generalization is limited.

Another limitation of the study is that the researcher was supported in many ways. For example, during data collection and analysis, research assistants were recruited help administer questionnaires. One of the research assistants depended on teachers of the adolescent with HI for translation and interpretation. This could have an indirect influence on the data in one way or the other. This indirect influence of the research assistant on the collected data will however be minimal since administered only three research participants.

1.7 Organization of chapters

The thesis is organized into six broad chapters. Chapter one provides a prelude to the study, where research central and specific research objectives and question were outlined. In chapter

two discusses relevant theoretical and empirical literatures on HIV/AIDS knowledge and sexual behaviour of adolescent with hearing impairment (HI). Here social constructivist theories covering social ecological and sexual scripting theories are delineated. While chapter three highlights various methodological traditions, research designs, data collection procedure and data analysis, chapter four houses research results presented using sequential explanatory procedures. In chapter five, key ideas from both theoretical and empirical literature used to discuss research findings and results. Finally, in chapter six, conclusions on key findings are drawn and recommendations are made based on key conclusions of the study.



CHAPTER TWO

THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

2.0 Introduction

The interplay between HIV and Disability in respect of their attribution to knowledge, attitude and sexual behavior of adolescent students particularly in special schools of Ghana attracts an emerging growth of interest for academics, health workers, social workers and the general public alike. So much has been known or have already been researched into and written on this spectrum of HIV/AIDS and Disability. However, there appears to be a glaring deficit in literature in the subject area of concern when it comes to the peculiar knowledge, sexual behavior and attitude of HIV/AIDS regarding adolescent students with hearing impairment in special schools of Ghana.

Indeed, the sheer paucity of basic information concerning the relationship between HIV/AIDS and the hearing impaired adolescent students in Ghana especially motivates the focus of this chapter. The chapter thus takes a critical and comprehensive overview of relevant literature in the area to elicit knowledge gaps that establish the real need and contribution of this study to HIV/AIDS and Disability.

Key issues that form the general framework of this chapter include: social construction of reality, social ecology theory and sexual scripting theory. In addition, situational profiles of HIV/AIDS, Disability, adolescent students, as well as related knowledge of HIV/AIDS, attitude of hearing impaired towards HIV/AIDS and sexual behavior amongst hearing impaired adolescent students.

1.2 The theoretical background

There have been a number of important theoretical contributions guiding the understanding of HIV/AIDS risk and vulnerability. These theories are located in some specific theoretical framework, social relations and cultural contexts. HIV/AIDS knowledge and sexual behaviour of adolescent with hearing impairments (HI) are, therefore, investigated along this direction. Social construction of reality is used as an umbrella theory to guide the research. Since HIV/AIDS knowledge and sexual experiences, which Berger and Luckmann (2011) refer to as reality, can best be described by adolescent with hearing impairment (HI). In this section, a combination of theories such as social constructivist theory (Berger & Luckmann, 2011), social ecology theory (Bronfenbrenner, 1994) and social scripting theory (Gagnon & Simon, 1973) will be used to guide the investigation. These theories guarantee that this enhances our understanding of HIV/AIDS knowledge and sexual behaviours are not restricted to only behavioral approaches, but also consider how sociocultural, historical issues, traditions and our way of thinking set the context and conditions for sexual practices and relations that carry a risk of HIV/AIDS infection (Maticka-Todale & the HP4RY Team, 2012). This discussion (theoretical framework and review of literature) will provide an appropriate context for a later discussion of research findings in chapter five.

1.2.1 Social constructivist theory

One important reason why social constructivism theory is required in understanding HIV/AIDS knowledge and sexual behaviour of adolescent with HI is that HIV/AIDS is not only a simple medical issue, but also it is considered as a “Disease of Society” (Gatter, 1995, p. 1523). The conceptualization of HIV/AIDS and its concomitant risk factors (unprotected sexual intercourse,

drugs and stringer use) begin in simple romantic/sexual relationships (Feiring, 2002). This romantic relationship is generally believed to be a simple social skill learned during adolescence and through adulthood. Today, this simple social skill has become problematic because it easily leads to risk factors and HIV virus acquisition. Because HIV/AIDS is a social issue, its emergence has provoked reaction of fear and revealed social cracks in society such as stigmatization, inequality, discrimination and credible gaps in the way people treat victims of HIV/AIDS (Pollak, Paicheler & Pierret, 1992).

The social construction of HIV/AIDS is of different forms. Some approach it from the cognitive, medical and social points of views. In this case, Berger and Luckmann (2011) theory of social construction of reality is applied to HIV/AIDS knowledge and sexual behaviour of adolescent with HI. That is, our conception of HIV/AIDS and sexual behaviours are derived from our understanding of others (adolescent with hearing impairment). HIV/AIDS and sexual behaviours are social realities. Realities are socially constructed. What is implied here is that social construction is “a symbolically based tension between commonly accepted knowledge and personal understanding” (Sharf & Vanderford, 2003, p. 10). From this viewpoint, the borders between knowledge and personal interpretation tend to distort or gives vague impression, making health and illness both ideological and dilemmatic (Radley & Billig, 1996). Consequently, Berger and Luckman (2011) conclude that reality, whether scientific, philosophical and even mythological, does not exhaust what is 'real' for the members of a society. Since this is so, our understanding of HIV/AIDS knowledge and sexual behaviour must first of all concern itself with what adolescent with HI know as HIV/AIDS in their everyday lives. It is precisely this 'knowledge' that constitutes the fabric of meanings without which no society could exist (27).

From this point of view, HIV/AIDS knowledge and sexual behaviours of adolescent with HI is derived from their primary and secondary socialization phases.

1.2.2 Social ecology theory

Although Bronfenbrenner (1994) is not the proponent of social ecological theory, he is responsible for making ecological models of human development very popular. He argued in his ecological theory that in order to understand human development, one must consider the entire ecological system and whatever grows therein, all aspects of human development including human, family, society/community and the system and all occurrences/events taking place in the system. This is because all that happen in a given system is interconnected and affects human development positively or negatively and directly or indirectly. For this reason Bronfenbrenner (1994) theorized four interconnected system of layers: microsystem, mesosystem, exosystem and macrosystem. All these interactions that occur in these four systems affect HIV/AIDS knowledge and sexual behaviour of adolescent with HI (Figure 2: Bronfenbrenner's social ecology theory).

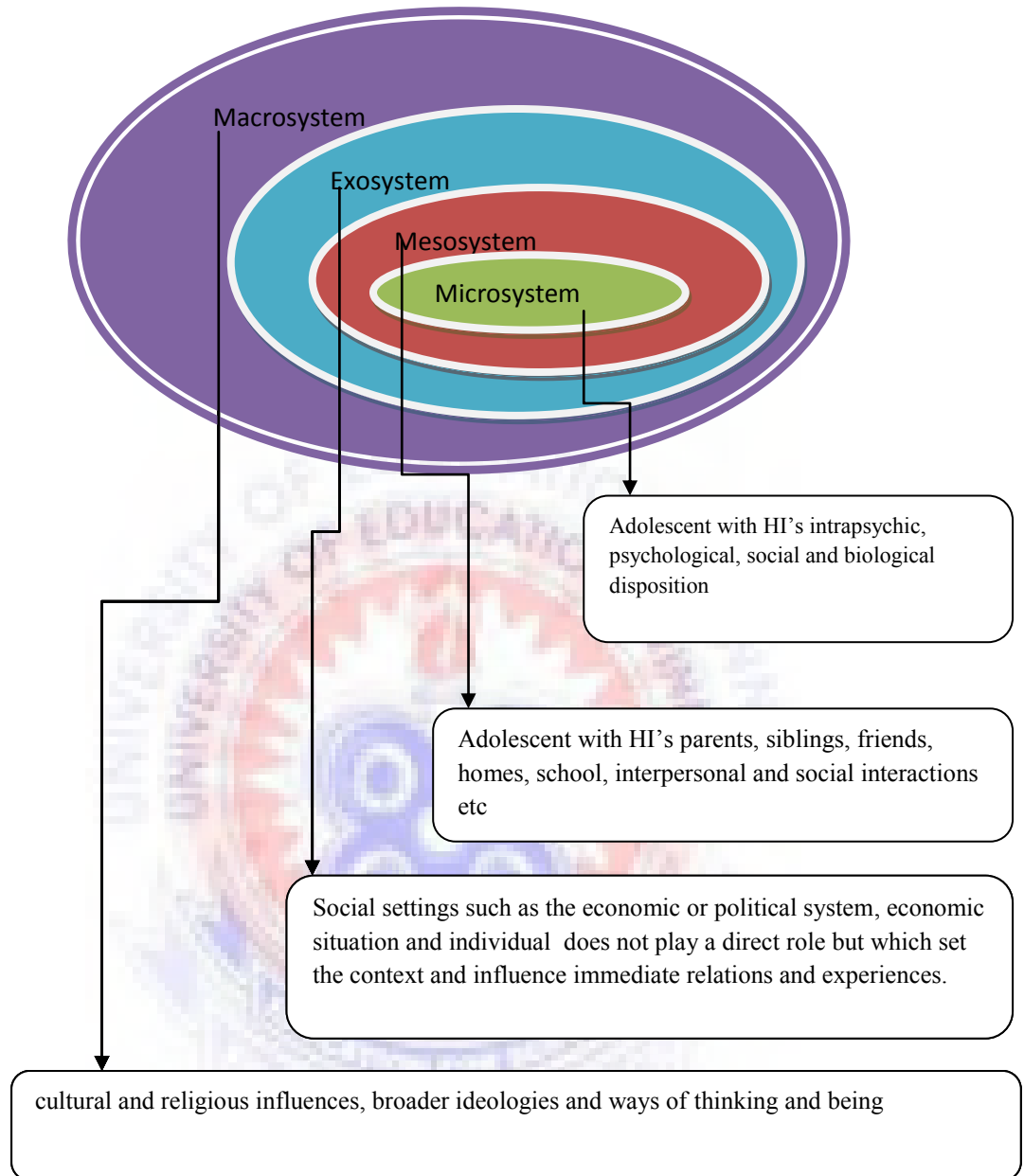


Figure 1: Bronfenbrenner's theory of ecology of human development

Microsystem is the first interconnected system that houses human (in this case adolescents with HI), their behaviours - sexual desire, abilities to go sex or abstain from sex, knowledge or lack of knowledge of the consequences of having protected and unprotected sex- are all located within the mesosystem (that within the adolescent). The capacity of an individual or adolescent

with HI impairment to negotiate successful in the mesosystem is often facilitated by the forces in the mesosystem.

The mesosystem is the second system of Bronfenbrenner's theory. This system has to do with influences significant others (e.g. parents, siblings and boy/girlfriends) have on the development of adolescent with HI. For instance, parents, guardians, important persons from school like teachers and all those who matter to the adolescent with HI are located within the immediate environment. They set the context for regular interactions and activities of adolescents with HI daily life. Each one of these members, however, brings their way of lives, thinking, traditions, norms etc to bear on the adolescent with HI. This way of lives, invariably, have positive or negative effects on the development of adolescent with HI. The interconnectedness between micro and meso systems, therefore, plays a central role in the adolescent knowledge and sexual behavior and their vulnerability to HIV/AIDS risk factors. By virtue of the position and value of the micro and mesosystems, most of what happens at those levels becomes internalized as primary socialization forms (Berger & Luckmann, 1966; Maticka-Tyandale, 2012).

The mesosystem and its affiliated activities and interactions are also interconnected with and influenced by the constituents of the exosystem. This exosystem is made up of social settings such as the economic and political systems in which adolescents with HI do not have a direct role to play, but which sets the context and indirectly influence the adolescents' immediate relations and experiences (Maticka-Tyandale, 2012). Here, for example, by virtue parents' current or temporary financial difficulties, adolescents with HI may be influenced to succumb to sexual advances, favors and intercourse from strangers. In this way, adolescents with HI may be

exposed to HIV/AIDS risk factors due to the interactions and context set in the exosystem. This explains why Bronfenbrenner (1994) argues that whatever happens at mesosystem level drip down to the microsystem, thereby affecting those found within it indirectly.

In the same vein, the social ecology theory posits that the exosystem is embedded in the macrosystem. The macrosystem houses all broader ideologies, cultural and religious beliefs; and all ways of thinking and being that influence the daily life of every human being. Here, for example, the ability of the adolescent with HI to refuse sexual invitations and acts from strangers may be influenced by her religious and cultural beliefs; traditions and way of thinking and being. That is exactly Gagnon & Simon described as cultural scenarios. The capacity of adolescent with HI to abstain from sex; refusal to sell or buy sex is guided by the instructions from the macrosystem level (Maticka-Tyndale & Tyndale, 2012).

1.2.3 Sexual scripting theory

The idea that underpins sexual scripting theory was first promulgated by John Gagnon and William Simon (Maticka-Todale & the HP4RY Team, 2012; Gagnon & Simon, 1973). It has its roots in sociology. Like the social ecology theory, it deals with sexuality and sexual practices as they exist, occurs and influence by actors in the society. Gagnon & Simon (1973) proposed three levels of scripts and sexual situations (intrapsychic, interpersonal and cultural scenarios) which are similar to that of Bronfenbrenner's theory of ecology of human development: microsystem, mesosystem and macrosystems (Gagnon, n: d; Maticka-Tyndale & the HP4RY Team, 2012; Bronfenbrenner, 1994). Gagnon and Simon (1973) argued that sexual practices/activities,

relationships and interactions of individuals are influenced by those three layers of scripts: intrapsychic, interpersonal and cultural scenario levels (Figure 2: Sexual scripting theory).

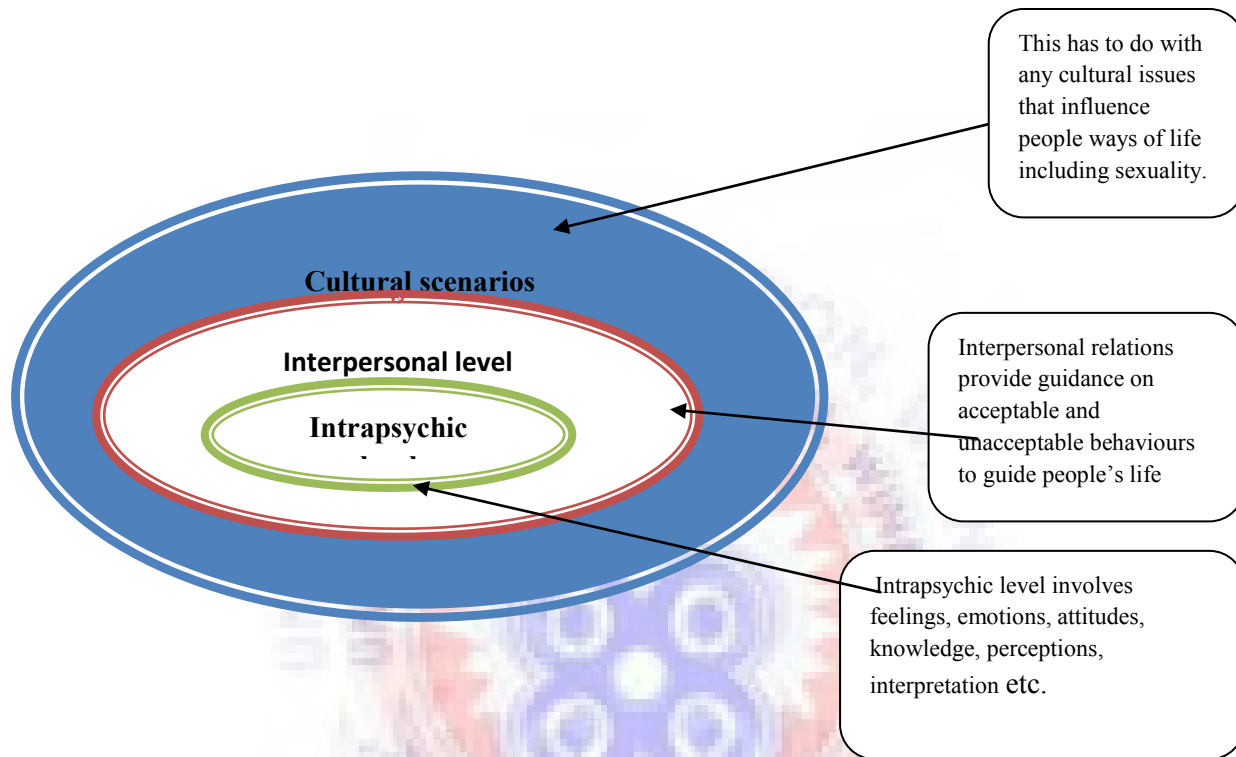


Figure 2: Sexual scripting theory

According to Gagnon and Simon (1973), sexual scripting are construed as “learning the meaning of internal states, organizing the sequences of specifically sexual acts, decoding novel situations, setting the limits on sexual responses, and linking meanings from nonsexual aspects of life to specifically sexual experiences” (p. 17). Sexual script plays a central role in both sexual intentions and sexual acts. It is the script that brings together one’s desire to have sex and pleasure one derives from sex. At the same time, it also connects one’s feeling of disgust and disintegration. Script performs this crucial role with the bodily activities coupled with physical touching, and physical signs of arousal (Gagnon, n: d; Maticka-Todale & the HP4RY Team,

2012). Therefore, sexual acts are end results of a number of codified sequence of affairs. Scripts provide guidance and directions as to how, where and with whom sexual activities or acts are to be performed. As such, all the three levels of scripts (intrapsychic, interpersonal and cultural scenarios) have tremendous influence on one's sexual practices, interactions and relationships. They provide guidance as to what is and what is not sexual situation and contains fundamentals ingredients that connect erotic life to social life in general (Gagnon, n:d). For instance, the script provides knowledge of age script, that is, this person is a child, therefore, should not be involved in sexual acts. Likewise, script guides and directs our instincts that to adults as appropriate sexual partners, suggesting that may be performed considering its appropriateness in terms age. It is the same scripts that guide us that when one performs sexual activities with minors and caught, one may end up in jail. It guides us to what are appropriate sexual partners. Like ecological theory, scripts are not merely a cognitive possession of single actors; they must exist as part of a social structure. It is a mutually shared convention that allows two or more people to participate in a complex act involving mutual dependence (Gagnon & Simon, 1973).

As mentioned earlier, scripts operate on three different but interconnected levels: intrapsychic, interpersonal and cultural scenarios. The interest of sexual scripting is on all the three levels. Intrapsychic operates on the level of mental life. Broadly speaking, it is understood as a level that provide all guidance for future plans, current actions to be taken and the schemes to be able to remember all past events. One way to look at this, of course, is the level of HIV/AIDs knowledge and sexual behaviours of adolescent with HI. The ability of an adolescent with HI to make sexual advances is guided, planned and executed at the intrapsychic level. Likewise, it is the intrapsychic level that provides the adolescent with HI the capacity to remember all sequence

of events that will take place till the point of current action (sexual act or intercourse) and the consequences of performing sexual acts and with whom. The adolescent with HI's decision to or not to perform sexual acts, however, is guided by interpersonal level script (understood as social interactions).

While having full comprehension of the consequences of the current actions, the interpersonal level script (social interactions) helps the adolescent with HI to accomplish their goals of sexual intercourse. That is, interpersonal level script provides guidance as to either to respond positively or negatively to, say, sexual advances or desires. In such a situation, the adolescent could accept sexual invitation and be exposed to risks factors or vice versa. A number of points are at issue here. The capacity and willingness of adolescents with HI (or those without disabilities) to respond positively or negatively to sexual advances, according to Gagnon and Simon (1973) also depends on their cultural acceptable script and specific biological status that could facilitate their acceptance or rejection of sexual advances or conducts. They called this level of script cultural scenarios.

Cultural scenario is the third level script in the sexual scripting theory. This level of script involves all instructions, guidance, and education received regarding the ways, dos and don'ts about our sexual life, how a person should and should not behave sexually. Here, the issue is simply not the matter of abstract norms, rules, values, or beliefs. But, it is about how these normative and attitudinal rudiments are incorporated into the narratives to which the script is given (Gagnon, n:d). That is, all cultural activities including folktales, cautionary tales and proverbs about sexuality, gender, and negative cultural scenarios (e.g. if you masturbate you

have stunt growth; having sex in the middle of room, you give birth to imbeciles etc) and traditions influence and guide the sexual activities of individuals depending on one's cultural and ethnic background.

This is so because a person with or without disability is inducted into some sort of way of life. Berger and Luckman (1966) call this way of life first socialization. Essential elements in this first socialization guide and provide instructions for all aspects of our life, the way we behave and do things including our sexual practices. For instance, the cultural scenarios control our sexual activities (e.g. sexually), where to act, with whom and when to act or do it. All these directions are cultural scenarios embedded in folktales and some of the tales warn us about our sexuality.

Therefore, a script is the molar element which is descriptive of all actions. They can be used to interpret mental processes (e.g. Plans for the future, remembrances for the past); guide the way one interacts in private and in public interactions and can also be employed to describe the sceniote structure of situation. At the cultural level, scripts are experienced as instructions, norms, guides and ways of thinking. Also, these experiences from the instruction guide vary according to cultural and historical context. They vary in terms of flexibility, ranging from the ritualistic to the improvisational (Gagnon, n: d Maticka-Todale & the HP4RY Team, 2012). Based on this thinking, HIV/AIDS knowledge and sexual behaviour are likely going to vary, depending on where they are from, homes, communities as well cultural settings and the scripts embedded in those cultures.

The central thrust of theories discussed affirms what Max theories many decays ago. He theorized that human beings make their own history but they do not make it as they please; they

do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. That is exactly what social construction of reality, social ecology theory and sexual scripting theory aimed to achieved in this study.

2.3 Contextualizing HIV/AIDS, disability/hearing impairment and adolescent students

Empirical literature on profiles of HIV/AIDS and disability are reviewed in the light of global, regional and national imperatives. Particular attention is paid to adolescents with hearing impairment (HI).

2.3.1 Profiling HIV/AIDS

This section profiles HIV/AIDS in light of origin, definition and nature of HIV/AIDSs as well as situation of HIV/AIDS in the world, Africa and Ghana. It also underscores the stigmatization and challenges associated with HIV/AIDS.

2.3.1.1 Origin, definition and nature of HIV/AIDS

The origin of HIV has attracted controversy of opinions but a large body of scientific knowledge posits that HIV may have been generated from hunting Chimpanzees for meat when a human contact was made with a West African Chimpanzee's blood containing a virus known as Simian immunodeficiency virus (SIV) (NIAID, 1999). Several studies have shown that HIV was first diagnosed in human blood in 1959 in Kinshasa of the Democratic Republic of Congo. In the case of AIDS, it studies revealed that it first AIDS case was diagnosed in 1981 in New York and California (Tun, 2013; CDC, 2012; Rice & Farquhar, 2000; CDC, 1981).

Indeed, HIV and AIDS are complementary bedfellows. Whereas HIV stands for Human Immunodeficiency Virus, AIDS is Acquired Immune Deficiency Syndrome. HIV is the known active virus leading to AID. It affects human immune system that produces antibodies to defend the body against infections by fighting off harmful micro-organisms. WHO (2000) clearly states that HIV acts to dismember the immune system in order that the immune system will not be able to defend the body against ‘opportunistic infections’, diseases and illnesses. Once infected with HIV virus, it makes every attempt to destroy special cells in the immune system known as ‘lymphocytes’. Lymphocytes have CD4 antigens known as CD4 and T cells which is often destroyed by HIV, thereby making the defense mechanism in the body weak and powerless to expel or kill harmful micro-organisms (HIV/AIDS in Ghana, 2001-2005; WHO, 2000).

According to Lindsay (2001), there are two types of HIV viruses harmful to human beings. They are HIV-1 and HIV- 2 (Lindsay, 2001; WHO (2000). Studies showed that HIV-1 affects people across the globe. But in the case of HIV-2, is mainly found in West Africa (Lindsay, 2001). What is important, however, is that any of the HIV types negatively affects immune system of the infected person rendering the body defense system powerless to defend the body against opportunistic infections such as Tuberculosis (TB) and Pneumonia (WHO, 2000). Regarding the immune system, WHO observed that HIV is “a retrovirus that infects cells of the immune system, destroying or impairing their function” (2013, p.1). This is capable of resulting to AIDS at a point the body of victims of HIV infection have their immune system badly destroyed (Tun, Okal, Schenk, Sheehy, Kuffour, Esantsi, Asiah, Moono, Mutale; Kyeremaa; Ngirabakunzi & Justus 2013). Tun, et al (2013) suggests that the point of AIDS is the most deadly and infectious state of HIV, that is, where human immune system is severely waned almost beyond repairs. Also, Tun and colleagues (2013) indicate that incubation period from initial HIV infection to development

into AIDS takes about two years to 15 years. That it could be more but with about eight years on average within which an infected person could die if appropriate medical intervention was not provided (Tun et al., 2013).

HIV/AIDS in Ghana (2001) revealed that combination of two signs: minor and major symptoms following an infection appear on an infected person usually indicated presence of AIDS in the person. While the minor symptoms include: persistent cough for over a month, persistent skin infection, aggressive skin cancer, candidacies, recurrent shingles and enlargement of the lymph glands, the major symptoms include: prolonged fever for over a month, prolonged and chronic diarrhea for over a month and significant body weight loss for over 10% in a long while. Nevertheless, the initial stage of HIV infection is mostly does show until it gets to the point of incubation period, that is, an average of eight years after infection with HIV virus. Depending on the nature of the body defense system of affected person, symptoms of HIV may only show up after several years of infection (HIV/AIDS in Ghana, 2001).

In Ghana, studies showed that most victims of HIV/AIDS person tend to hide symptoms and themselves until the point symptoms of the disease have shown its ugly head (HIV/AIDS in Ghana, 2001). In this way, HIV virus is easily and readily transmitted to other people. The mode of transmission is often included but not limited to: unprotected sex (sex without condom) via oral and virginal sex; blood transfusion; mother to child during pregnancy and breastfeeding. It is also transmitted during labor or delivery; circumcision as well as sharing of sharp objects such as blades, scissors, syringes and needles (HIV/AIDS in Ghana, 2001; Kennedy, Nolen, Applewhite, Pan, Shamblen & Vanderhoff, 2007).

Studies have also shown that HIV disease is mostly transmitted through unprotected sexual intercourse worldwide, representing more than 95% of all HIV infections (Garnett, Garcia-Calleja, Rehle & Gregson, 2006:1; WHO, 2004:5). Also, HIV/AIDS in Ghana (2001) found that about 80% of HIV infections in Ghana are transmitted through heterosexual relationships, a rate apparently lower than the global figure of 15%, which is followed by mother to child transmissions (MTC).

One danger of this revelation is that, without proactive medical check-up culture, many people will be susceptible to HIV virus since infected persons could easily spread the disease to people unintentionally during the period symptom of infected persons are not visibly shown. Reasons responsible for such dangers are attributed to poor medical check-up, cultural practices, stigma and isolation. These dangers are common in Africa and other developing countries such as Asia and Latin America. HIV virus, however, is not transmitted through insect bites, water, and food, touching and sharing cups, glasses or plates (Lindsay, 2001).

2.3.1.2 Cure and management of HIV

Although there have been several attempts, both traditional and scientific researches, to discover cure for HIV virus, there is still no known cure for HIV/AIDS virus. People who are infected with the virus finally end up in graves. One important discovery about HIV/AIDS is antiretroviral drugs. What is drug does is that is helps in weakening or destroying the strength of the HIV/AIDS virus at the same time boosting the immune system of the infected persons. Some of the HIV/AIDS drugs administered in Ghana include: ‘the first-line drug regimen is zidovudine + lamivudine + nevirapine (or efavirenz) or stavudine + lamivudine + nevirapine (or efavirenz),

which is equivalent to US\$ 300 person per year. Also, the second-line treatment includes abacavir + didanosine + nelfinavir; or abacavir + didanosine + lopinavir boosted with ritonavir; or stavudine + didanosine + lopinavir boosted with ritonavir, which also cost about US\$ 460 per person per year (WHO, 2005).

As expensive as the drugs are, HIV/AIDs patients have to be placed on drugs for the rest of their average lifespan. In addition to expensive nature of the drugs, it is also inconveniences the infected person. Therefore, Lindsay (2001) argues that knowing the inconveniences and the challenges involved in acquiring the medicine, the best method handle HIV/AID virus is prevention. The common preventive acronym used in HIV/AIDS literature relating to sexual transmissions is 'ABC'. The acronym 'A' in the ABC acronym stands for *Abstinence*, implying that abstinence from sex by ensuring that young people delay engaging in sexual intercourse until they are responsible enough to be in a healthy relationship. 'B' in the ABC acronym means *Being* faithful to each other as partners in a relationship particularly when engaged in a monogamous relationship. And 'C' implies *condom* use. That is, consistent and correct use of *Condom* especially when engaged in 'sexual intercourse or other high risk behaviors' (Caley, 2004; Lindsay, 2001). The ABC acronym was coin to support HIV/AIDs complain strategy. For example, the acronym was used successfully as an HIV preventive strategy in Uganda where 'rate of prevalence of HIV reduced from 15% in the 1990s to 6.5% by 2004' plates (Lindsay, 2001). Also, in the USA, research has shown that consistent and correct use of condom during sexual intercourse can reduces the chances of contracting HIV/AIDs virus (Kennedy et al., 2007).

According to Weiss (2007), another recognized HIV preventive measure is male circumcision. In a randomized control research, Wise (2007) found that male circumcision reduces the risk of HIV infection among heterosexual men by up to 66%. One disadvantage of this practice is that if circumcision is not done with utmost care and hygiene including negligence of use of medical instruments can expose men to transmittable infections including HIV (Wise, 2007). Paradoxically, most African men are known to be circumcised though, HIV is rapidly spreading in Africa more than perhaps any other region in the world. Some explanation to this anomaly may be due to the traditional mode of circumcision. That is using crude tools to circumcise as many people as possible without sterilizing the tools thoroughly avoid increasing risk of infections including HIV/AIDS virus infection (Wise, 2007).

2.3.1.4 The global HIV/AIDS pandemic

Philander & Swatz (2006) opined that HIV/AIDS is considered a global pandemic because as result of it's severing threat to public health and its associated consequences on social and economic activities globally. The consequences of HIV infection is particularly severe in developing countries where more than 95% of global new infections are registered on annual basis (Philander & Swatz, 2006). One goal of the millennium development set in 2000 was to reduce, if not end, prevent HIV infections and control its mortality rate in the world. By virtue of this goal, there was a sudden increase in efforts and commitments globally to fight HIV. This fight was a universal purpose and responsibility. As a result, many countries invested in HIV/AIDS prevention programmes to control the deadly HIV/AIDSs worldwide (Tun, et al., 2013; UNAIDS 2012). Notwithstanding the great efforts and investment on HIV/AIDS programmes, the fight is far from being won, partly due to increases prevalence rate globally. The most

worrying was prevalence rate amongst adolescents in Africa (Tun, et al., 2013; UNAIDS 2012; Linsay, 2001).

Research conducted by UNAIDS (2012) showed that there was a decrease in prevalence in 1997 globally. However, the trend changed in 2010, in which about 33.4 million people lived with HIV infection worldwide, suggesting an upward movement of infected people. Furthermore, in 2011, about 2.5 million (20%) people were infected with the HIV virus. In 2001, 2001.34 million people also contracted the virus globally, suggesting increments of 29.4 million people living with HIV/AIDS. This suggests that the rate of HIV prevalence globally was estimated to be 0.8% in 2011. This included people between 15-49 years. Also, in 2012, the prevalence rate was approximately 35.3 million people living with HIV. Out of this figure, 2.3 million people were newly infected with the virus, suggesting a 33% reduction in the number of newly infected people from about 3.4 million people in 2001 (UNAIDS (2012)).

Although global trends showed a reduction in newly infected people, some regions still witness increases in new HIV infections (UNAIDS (2012)). In Caribbean and Sub-Saharan Africa, for example, the highest rate of decline of new infections of HIV from 2001 to 2011 were Caribbean (42%) and (25%) respectively. Similarly, in the Middle East and North Africa, where the highest rate of increase of new infections of the disease was witnessed showed incidence of 27,000 in 2001 and 37,000 in 2011 respectively. Generally, the increases accounted for over 35% for new infections of HIV. Also, while Eastern Europe and Central Asia witnessed new infections since the 2000, the rate of new infections in the Western and Central Europe as well as North America, had not increased (UNAIDS 2012).

The situation of HIV/AIDS infection in the sub-Saharan Africa is still worrying. Although it is recorded some reductions in new HIV infections, in 2010 alone about 22.5 million people still lived with HIV in the region (UNAIDS, 2010). UNAIDS lamented that the decrease in newly infected HIV people, partly, could be attributed to the use of antiretroviral therapy (2010). Also, Adeniyi and Olubukola (2010) found that HIV/AIDS mortality rate reduced relatively in mid-2000s. Furthermore, in 2005, 2011 and 2012, research showed that HIV-related deaths reduced about 24% globally, that is, from 2.3 million to 1.7 million and 1.6 million people respectively. In Sub-Saharan Africa specifically, AIDS-related deaths decreased by 32%; 48% in Caribbean; 41% in Oceania; 10% in Latin America; 4% in Asia, and 1% in Western and Central Europe and North America. In Eastern Europe and Central Asia region and the Middle East and North Africa regions, however, death rate for people infected with AIDS rather went up by 21% and 17% respectively (Tun, et al., 2013).

Again, research showed that HIV/AIDS is the fourth leading cause of death in the world. It has surpassed malaria and tuberculosis as the deadliest infectious disease amongst adults. In addition, HIV/AIDS is the lead cause of deaths among adolescents and young adults (Tun et al., 2013; UNAIDS, 2012). The most troubling of it all is that HIV/AIDS is an emerging global danger spreading amongst adolescents with disabilities including those with hearing impairment (HI). Studies have shown that adolescent with disabilities are also sexually active, especially those with HI face additionally challenge in decoding HIV/AIDS education and sensitization related messages largely targeted for persons without disabilities (Tun et al., 2013; Adeniyi & Olubukola, 2010).

2.3.1.5 HIV/AIDS situation in Africa

Currently, Africa is known to be the hardest hit by HIV/AIDS pandemic. When it comes to HIV/AIDS incidence, Sub-Saharan Africa region leads globally. The region has suffered greatly since most of infected people are found in the region. For instance, reportedly UNAIDS (2012) found that Two-thirds of all HIV/AIDS infected people in the world lived in the region. The study also found that in 2010, about 68% of all HIV infected people globally are found in the sub-Saharan African region. This estimates (68%) represented 70% of newly infected HIV/AIDS patients. In the same manner, an estimated 69% (23.5 million) of all HIV/AIDS infected persons worldwide lived in same region in 2011 (USAID HIV/AIDS Health profile, 2011; UNAIDS/WHO, 2005).

Even though there are variations in terms of effects of HIV/AIDS pandemic, some countries more than others. In fact, amount the African continent, southern Africa is the most affected by HIV/AIDS pandemic. Studies showed that between 1999 and 2009, about 11.3 million HIV infected people were found in the Southern Africa. Again, HIV incidence in southern Africa was among the 31% of global HIV infection incidence and that of 34% of AIDS-related deaths in 2009 worldwide. With the exception Angola and some few countries in the southern Africa, nine countries are among the 10% prevalence rate of HIV. These countries include Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe (USAID HIV/AIDS Health profile, 2011). Out of these nine countries, Swaziland, Botswana and Lesotho are the hardest hit countries with 25.9%, 24.8%, and 23.6% of the HIV prevalence rate respectively (USAID HIV/AIDS Health profile, 2011).

However, in East African sub-region, HIV prevalence rate stabilized and declined in certain areas including countries such as Burundi, Democratic Republic of Congo, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania, and Uganda (USAID HIV/AIDS Health Profile, 2011). Also, in West Africa, USAID (2011) found that prevalence of HIV was relatively stable and lower than that of the East and Southern Africa. For instance, HIV prevalence rate among the adult population in West Africa was 2% in 2009. This prevalent rate could be even less in some countries such as Benin, Burkina Faso, Gambia, Ghana, Guinea, Liberia, Mali, Mauritania, Niger, Senegal, and Sierra Leone. However, in some exceptional cases, HIV prevalent rate could high. For example, HIV prevalence rate amongst adults went above the 2% in the following countries: Cameroon, Côte d'Ivoire, Gabon and Nigeria with 5.3%, 3.4%, 5.2%, and 3.6% HIV prevalence rates respectively (Tun et al., 2013).

Even though the HIV epidemic harmfully affects many facets of socioeconomic development, several researches have demonstrated that basic education sector in sub-Saharan Africa is tremendously affected, compromising effectiveness and efficiency in the delivery of educational services (WHO, December 2005; Wobst & Arndt 2004; ILO, 2004a; Bennell, 2003; Barnett & Whiteside, 2002; Bennell, Hyde, & Swainson, 2002; Carr-Hill, Katabaro, Katahoire & Oulai, 2002; Kelly, 2000; UNAIDS/ILO, 2000; UNICEF, 2000; World Bank, 2000).

2.3.1.6 HIV/AIDS Situation in Ghana

Studies have demonstrated that the first incident on HIV/AIDS in Ghana was recorded in 1986. This was about five years later when HIV/AIDS virus was discovered in 1981 (WHO, 2005 National AIDS/STI Control Programme, 2009). Thereafter, about 43,587 HIV cases were

recorded. However, in 2004, the HIV/AIDS infections cases increased to 90 000. Between the year 2000 and 2002, the prevalence rate of HIV/AIDS infections in Ghana was expected to rise from 2.3% to 3.4 %. By the year 2005, number of people infected with HIV/AIDS rose to about 400 000 (Ghana's Ministry of Health (MOH), 2000; National AIDS/STI Control Programme, 2009).

Recent studies on incidence of HIV/AIDS in Ghana discovered that most severely affected age group was between 25 and 29 years (4.5%). Those between 30 and 34 years (4.4%) and people between 15 and 24 years, accounting for 2.0% were found to be susceptible to HIV/AIDS infection. Similarly, those found within age group of 15–19 and 20–20 years were also found to be vulnerable to HIV/AIDS infection (HIV/AIDS in Ghana, 2001). However, adolescents, women, sex workers, children, mobile populations, miners and kayayei (young female porters who have migrated from rural to urban areas) and those with disabilities were found to be the most vulnerable to HIV/AIDS infection (Appiah-Agyekum & Suapim, 2013; National Population Council, 2011; National AIDS/STI Control Programme, 2009).

In addition, a study conducted in Ghana in 2009 disclosed that a countrywide median HIV prevalence rate was 2.9%. Also, HIV/AIDS infected persons was 267,069 made up of 154,612 females and 86,791 males. Out of the 267,069, children were 25,666 with yearly deaths from AIDS of 20,313. Of the 20,313 yearly deaths, 17,058 deaths were recorded in 2009 alone. Within the period, a total of 25,531 newly infected HIV/AIDS persons were recorded. Of this figure, 14,216 persons were females. The research further revealed that adult HIV incidence of HIV/AIDS infection increased a little from 1.7% to 1.9% with median ANC prevalence

increasing to 2.9%. HIV/AIDS incidence rate among adolescents and young people between the ages of 15 to 24 was 2.1%. This figure was used as proxy for future studies of HIV/AIDS prevalence infection rate (National Population Council, 2011; National AIDS/STI Control Programme, 2009).

The trend, however, changed in 2006 and 2010. The prevalence rate of HIV/AIDS infections in Ghana was 3.2% and 1.7 % in 2006 and 2010, respectively. Most HIV/AIDS reported cases were from economically and sexually active group, aged between 15 and 49 years. In this age group, reported cases of HIV reduced from 6:1 in 1987 to about 2:1 in 2011 (National Population Council, 2011). Also, of the 10 administrative regions, Eastern and Northern regions of Ghana have the highest and lowest HIV/AIDS infection prevalence rate respectively. In addition, Accra in the Greater Accra region, Kumasi in the Ashanti region and Koforidua in the Eastern region, which are highly populated, attracted high incidence of HIV/AIDS infection (WHO, 2005).

Despite some incidence of HIV/AIDS infections, the deadly disease is considered to be comparatively low in Ghana and even considered be among 'high risk' countries like any other developing country due to the following worries: covert multi-partner sexual activity; denial due to social morals and values against "illegal" sex; low level of knowledge about HIV/AIDS and condom use; unsafe professional blood donation; high incidence of self-reported sexually transmitted infections among vulnerable groups; infected expatriates who infect their sexual partners when they return to Ghana; and high levels of HIV/AIDS in the neighbor countries such as Ivory Coast (Appiah-Agyekum & Suapim, 2013).

To address the problem, the Government of Ghana and nongovernment organization set up relevant national institutions to that effect. For example, in 2001 Ghana Aids Commission established to take charge of HIV/AIDS activities in the country. Also, the capacity of Ghana Ministry of Health service was build to effectively HIV/AIDS related service. Other HIV/AIDS control and prevention policies, programmes and projects have been implemented in the country in order to control and prevent HIV virus infection. Some significant successes with regard to public education, drug administration and reduction in mortality resulting from HIV infection has been reported (HIV/AIDS in Ghana, 2001). Nonetheless, HIV/AIDS in Ghana (2001) reported that stigmatization, poor record keeping of the incidence of HIV/AIDS in Ghana make it difficult to generalized HIV/AIDS findings in Ghana.

2.3.1.7 The challenges with HIV/AIDS

People who infected with HIV/AIDS encounter a number of challenges in Ghana. Although stigmatization is highly frowned upon in Ghana, people living with HIV/AIDS are often stigmatized. According to UNAIDS (2013) the stigmatization comes from cultural and religious standpoints. That is, the stigmatization has to do with how people from different cultures perceive the moral/ethical and religious dignity or integrity of persons infected with HIV/AIDS (UNAIDS, 2013). People stigmatize HIV infected persons and some members of society regard those infected with HIV/AIDS as 'outcasts' who can easily transfer their infections to other people in the society. In addition to societal stigmatization of HIV infected people, health professionals also stigmatize them by prejudices; discrimination; disrespect and denigrate HIV persons in the same manner the non-professional elements of society do to the HIV/AIDS infected persons (UNAIDS, 2013). In some involuntary sterilization, for instance, women who

tested HIV positive were reportedly mishandled which even attracted lawsuits in countries such as Chile, Kenya and Namibia. In the same way, HIV/AIDS infected persons also suffered from income loss, community isolation, psychosocial trauma and attracted feelings of guilt, shame and suicidal thoughts amongst others (UNAIDS, 2013).

Because of this kind of stigmatization and dehumanization treatment meted out to HIV/AIDS infected person, people are reluctant to go for HIV test. Even when they eventually do and obtain HIV positive results, they find it extremely hard to disclose the test result to their partners and family members. Their unwillingness to disclose their status is a potential active exhibit for onward transmission of the virus. The infected person also find it difficult to access health care services and treatment to support them stay healthy and alive (Tun et al., 2013; UNAIDS, 2013).

Stigmatization, although has been said to have been significantly reduced over time due to educational and sensitization programmes, remains one of the great hindrances to 'effective HIV response' worldwide. It is hoped that many countries will respect the call by Global Commission on HIV and the Law to take urgent measures to 'repeal their punitive laws and prohibit discrimination' against HIV infected persons (UNAIDS, 2013).

In addition to the challenge of stigmatization, most developing countries including Ghana encounter country specific challenges. For example, in Ghana and some African countries Tun, et al. (2013) found that limited qualified human resources for health services, inadequate laboratory capacity and supply management system as well as inadequate financial resources

were some of the fundamental challenges HIV/AIDS infected people and the health care facilities encountered (Tun et al., 2013).

In the case of persons living with disabilities and HIV/AIDS, Tun et al. (2013) revealed that their situation was even worse with no hope or support coming from anywhere. In many parts of the world especially in Africa, persons living with disability and HIV/AIDS face double discrimination, that is, discrimination for being disabled and additional discrimination for being infected with HIV/AIDS. In any of these cases, disabled persons get no support or mercy from the society they find themselves. HIV/AIDS discrimination compounds their existing unfortunate predicament (Tun et al., 2013).

It is established in this section (profiling HIV/AIDS) that globally, regionally and in Ghana, prevalence of HIV/AIDS is still high albeit with reduced numbers of new infections. The disease is still a canker and does not have respect or care for one's gender, race, sexual orientation, profession/occupation, age, rich, poor, as well as a person's ability or disability. It does not really care (Tun et al., 2013; UNAIDS, 2012; Bandura, 2012).

2.4.1 Profiling Disability/Hearing Impairment

This section explores history of disability, definition of disability, nature of hearing impairment (HI), causes of disability, effects of disability as well as disability situation in the World, Africa and Ghana.

2.4.2.1 Brief history of disability

Disability is as old as the first human society. Various societies, over the years, placed so much value on physical perfection, beauty and intelligence from the very early centuries. As a result, the manner in which people who were different from what was considered normal experienced significantly different treatment from one community to another (Kuyini, 2013; Munyi, 2012). As Roeher (as cited in Munyi, 2012) revealed that people attitudes towards persons with various disability forms in various cultures had a uniform perceptions and treatment for persons with disabilities. That is, persons with disabilities were equated to nothing and considered object of entertainment. Various inhuman treatments were meted out to children born with disabilities. Such babies were killed, thrown into bushes or buried alive (Kuyini, 2014). For instance, Baker (as cited in Munyi, 2012) stated that among Greeks, Plato once suggested that babies born with deformities be put away in some "mysterious unknown places" (Goldberg & Lippman cited in Munyi, 2012). As years passed by, early Christian doctrine brought in new ideas not to kill or punish babies born with deformities or diseases since deformities and diseases were not disgrace and punishment. On the contrary, the Christian doctrine perceived babies born with deformities as form of purifications of sins and refinement of lives (Baker as cited in Munyi, 2012). As time went by, Luther and John Calvin claimed that persons with disabilities such as those with mental retardation were possessed by evil spirits. This led the religious leader to subjecting persons with disabilities to physical and mental abuse in the name of exorcising the spirits (Thomas as cited in Munyi, 2012). Although this exorcism continued for some period, some members of the society such as those supporting social Darwinism opposed the practice. Inasmuch as supporters of Darwinism objected to exoticism, they did not also want their existence. They opposed to all sort of support to persons with disabilities. Persons with disabilities were considered unfit to the

society and progeny by supporter of Darwinism. Therefore the best way to handle persons with disability in their era was to extinct their breed (Hobbs as cited in Munyi, 2012; Johnsen, 2001).

Again, the suffering of persons with disabilities continued to 20th century. Although civilization was maturing at the time, thousands of persons with disabilities were intentionally eliminated through State sponsorship by Nazi Germans. For example, Lukoff and Cohen (as cited in Munyi, 2012) asserted that while people without disabilities in some communities ill-treated, and expelled persons with disabilities, other communities gave them special treatments. In a similar manner, some cultures rejected persons with disabilities completely, whereas other cultures considered as social outcasts and perceived them to be economic liabilities (Munyi, 2012). However, in some countries such as the Great Britain, some sorts of support in the form of medical care, food and other forms of supports were provided for persons with severe disabilities. In spite of all the ill and good treatments they received in some communities, there was a wide gap between the status of person with and those without disabilities even in the societies they got privileges (Hanks & Hanks as cited in Munyi, 2012).

All sort of complains of maltreatments for persons with disabilities continued even up 21st century, people perception, attitude and beliefs about persons with disabilities have changed dramatically (Yekple, 2014). Thus, people conception of disabilities has changed in ways that make many societies treat people living with disabilities with respect and dignity they deserved in the societies. This dramatic transformation in the way persons with disabilities are treated, partly maybe due to the universal recognition of the role persons with disability play, resulting in a more positive and protective outlook.

Therefore, perception, attitude and beliefs about person with disability has significantly transformed in varied dimensions. From 1st century to the 21st century the concept of disability changed in several form. The capabilities and aptitude of persons with disabilities are not doubted and their human rights to live and participate in every society/community without any form of discrimination are universally recognized. Today, perceiving disability with the lens of scorn is against the human right of persons with disability. The basic reality is that perceiving a particular group of people as weak without the ability has becomes issues of the past. Everyone irrespective of one's' ability or disability has the full rights to live, participate in social life such as marriage, giving birth, attending appropriate school that meet ones' needs and access to equal job opportunities are basic human rights of everyone. Subsequent discussions will focus on the concept of disability, types, Hiv/AIDS knowledge and sexual behaviour of persons with disabilities.

2.4.2.2 Definition of Disability

According to the United Nations Convention on the Rights of Persons with Disabilities, disability refers to, “those [people] who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” (UNCRPD, Article 1; United Nations Enable, 2006).

It is in the notion adduced by United Nations Convention on the Rights of Persons with Disabilities that World Health Organization (WHO) defines disability as, ‘a general concept that encapsulates ‘impairments, activity limitations, and participation restrictions Jonhsen (2001)’. While ‘impairment refers to malfunctioning of a body part or structure, activity limitation is

when the individual is impaired such that he or she cannot take part in a given task or action. Participation restriction is also about when someone encounters the problem of how to get involved in situations of life'. This means that disability is the challenge or limitation some categories of people face in fully participating and performing essential functions of life due to deformation in physical appearance, intellect or senses of the human. This descriptive connotation is what disability has historically been variously tagged with over time, except its current heavy inclination to positive and supportive perception and posturing instead of the hugely overdosed negative and scorned outlook by the forebears. Elements and structures of the present generation are still conceptual victims of the disability misperceived forebears (WHO, 2014).

The foregoing characterizations of disability are apparently founded on fundamental theories and models of disability which generally classify disability into physical/medical orientation and socioeconomic orientation (which here encapsulates Rehabilitation Model of Disability, Customer/Empowering Model of Disability, Economic Model of Disability, Religious/Moral Model of Disability, Expert/Professional Model of Disability, Rights-Based Model of Disability and Tragedy/Charity) and medical orientations (Mymdrc, 2014). While the former looks at disability as a physical or health misalignment or impairment of people who could and should be medically rehabilitated or made to adjust on appearance and functionality, the latter admits that disability can be sometimes a health condition or more-so a physical deficiency which must be adjusted or addressed on appearance and functionality but social systems contribute heavily to whether such people can meaningfully and fully participate in essential activities of social life or not (Nsamenang & Tchombe, 2011).

It is sufficient to observe that disability is thus a ‘significantly restricted ability in relation to individual condition (i.e. physical impairment, sensory impairment, cognitive impairment, or mental disorder) and or group or societal norms and systems. Disability therefore, goes beyond medical or physical impairment to include a whole ‘complex condition that reflects the interaction between features of a person’s body and features of the society in which he or she lives’. Persons Living with Disability (PLWD) may suffer impairments that could be both physical/medical and social. The impeding social systems serve as barriers that prevent PLWDs from realizing their full potential and enjoying their fundamental human rights. Impaired persons such as the blind, deaf, dumb, cripple or mentally unstable are typical examples of PLWD subjected to system maneuvers of the society. Such socially imposed barriers make PLWD more vulnerable and expose them to all kinds of mishaps such as diseases including HIV/AIDS, hunger and death (WHO, 2014; Nsamenang & Tchombe, 2011).

Hearing Impairment (HI) s exposes persons living with it to all kinds of dangers. It is ‘one of the serious human essential functionality anomalies next to visual impairment’ (Dash, 2000). It is a condition where people partially or fully lose their sense of hearing due to damage to or malfunctioning of the relevant sensory organ. It characterizes, ‘a deviation or change from normal functionality to worse functioning of either the auditory structure or auditory function of people’ (Gelfand, 2009).

Thus, people affected by hearing impairment suffer from partial deafness (they find it hard to hear) or complete deafness (they cannot hear at all). Disabling hearing impairment or loss is often recorded as HI that has loss ‘greater than 40dB in the better hearing ear in adults and a hearing loss greater than 30dB in the better hearing ear in children’. Deafness or hearing

impairments thus represents a condition where ‘a person is totally deaf or hard of hearing’ due to disfigurement of sensory organs. The degree of hearing impairment ranges from Normal, mild, moderate, moderate-Severe, Severe to profound especially used by Komfo Anokye Teaching Hospital (KATH) in Ghana. It is normally measured by pure-tone average (PTA) in dB HL which is determined for each year to assess the ‘mean of the air-conduction thresholds at 500, 1000 and 2000 Hz’ (Gelfand, 2009). In respective terms the PTAs for each level of severity of hearing impairment are: -5 to 25 dB HL, 26-40 dB HL, 41-55 dB HL, 56-70 dB HL, 71-90 dB HL, and >90 dB HL.

The degree of hearing impairment or nature of damage to the auditory system is upon which hearing impairments are classified. Three types of impairments are often generated from the auditory system. These are: ‘conductive, sensorineural and mixed impairments of hearing or loss’.

2.1.3 Types of Hearing Impairment

Conductive HI: it is the type of HI exhibited ‘when sound is not efficiently conducted through the outer ear canal to the eardrum and tiny bone (ossicles) of the middle ear which often results in reduction of sound level or the ability to hear faint sounds’. Causes of Conductive HI are many but include: ‘fluid in the middle ear from colds, ear infections, allergies, poor Eustachian function, perforated eardrum, benign tumors, impacted earwax, infection in the canal, swimmers ear and absence or malformation of the outer ear, ear canal or middle ear’. Conductive HI is acquired at birth and can sometimes be medically or surgically corrected (ASHA, 2008). Findings from research conducted by Amedofu et al (2005) indicated amongst others that, ‘otitis

media, wax, foreign bodies and trauma were the main causes of conductive losses in Ghana' (Amedofu et al., 2005).

Sensorineural HI: this type characterizes, 'damage to the inner ear (cochlea) or to the nerve pathways from the inner ear to the brain where individual's ability to hear faint or loud sounds is significantly reduced to the extent that no matter how loud a sound is it will still appear unclear or muffled to the person'. It often leads to permanent HI. Causes of sensorineural HI include: 'illnesses, drugs that are toxic to hearing, genetic or hereditary, aging, head trauma, malformation of the inner ear and constant exposure to loud noise' (Nyarko, 2013). Using 6,428 patients who attended Ear, Nose and Throat Department at KATH, Amedofu et al, (2005) found that this type of HI was more prevalent in Ghana than the other two impairments and that 'noise, fever, presbycusis, meningitis and Meniere's disease' were the major causes of Sensorineural HI. Apart from being common, it is unfortunately the type of HI which is mostly uncorrectable medically or surgically (Amedofu et al., 2005).

Mixed HI: it relates to a combination of 'sensorineural and conductive impairments coexisting in the same ear of a person'. Causes of this type of impairment include: 'presence of two separate disorders in the same ear such as noise induced hearing loss and otitis media or by a single disorder that affects the conductive and sensorineural systems such as otosclerosis' (Nyarko, 2013; ASHA, 2008; Gelfand, 2009). Correcting this impairment medically or surgically is often complicated.

A study undertaken in KATH between January 1992 and June 1993 revealed that the primary causes of deafness in Kumasi of Ghana included: 66 (51.5%) of the participants had congenital

sensorineural HI, while the remaining 62 (48.5%) had acquired sensorineural hearing loss. Of the 66 congenital cases, 44 were due to unknown factors, while the rest were due to post-natal convulsion, measles, meningitis, mumps, fever and jaundice. Results of free-field tests on 116 children had 90 cases with a profound sensorineural HI of which 56 were due to congenital factors, while 38 had a severe-profound sensorineural HI and the remaining 34 originated from acquired causes'. Congenital sensorineural HI was therefore the most common of causes of deafness (Nyarko, 2013; Amedofu et al., 1993).

2.1.2.4 Causes of Disability/Hearing Impairment

Causes of disability is of a nature that lend itself to the very exposed, vulnerable, daring, reckless and unpredictable nature of human life and the environment around, which make human beings get exposed to processes, events, objects, situations and circumstances that sometimes disfigure, deform or disable them during pregnancy, birth, infancy/childhood, adolescence or adulthood/old age. By this disability can be caused either through congenital sources (i.e. through birth or such other biological formation) or Acquired sources (i.e. through adverse exposure to elements of the environment).

Studies by some Non-Governmental Organizations (NGOs) suggest causes of disability especially with African children to be, 'illness related to infections (65%), complications during birth and the birthing process (17%), accidents (11%), through other means (5%) and violence (2%) where children between 20% and 50% aged two to nine years exhibited mild/moderate to severe disabilities'(Plan International, 2013). Causes of disability are therefore varied both in nature and substance or severity with infections acquired through ailments taking the center

stage. It is estimated that three in 1000 children in the USA acquire HI at birth which are mostly born with a hearing impairment.

However, WHO posits that the main preventable causes of HI in developing countries include; ‘middle ear infections, excessive noise, inappropriate use of certain drugs, problem during childbirth, vaccine and preventable infections’ (Nyarko, 2013). Many of these causes are preventable and that is partly the reason why WHO indicates through survey outcomes that ‘at least half of all HI is indeed preventable while a large percentage can be treated when early diagnosis and suitable management are secured’ (WHO, 2012).

2.1.2.5 Effects of Hearing Impairment

Due to the varied and complicated nature of hearing impairment, its effects on the individual and society have been often not direct but implied. Effects of HI are nonetheless determinable no matter the difficulties involved in doing so. Firstly, HI can cause a ‘generalized learning difficulties and other difficulties of comprehension in specific areas’. This is because HI can adversely affect both language development of children and other domains of ‘children’s social, emotional and educational development’. For instance with severe sensorineural HI, the tendency for disabled children to socialize early with their parents get dismantled due to serious communication barrier. So children with HI find it difficult to develop learning of language at a time very opportune for such lingual activity (Reddy et al., 2005).

Also, as they make efforts to connect themselves with the hearing world, the disabling hearing impaired appears to exhibit behaviors and thoughts which are different from other hearing people. The problem thereof is a symptom of a ‘rigid, literal and egocentric learning style which

cannot cope with hypothesis or inference’, argued Myklebust (1996). The argument further goes that the disabling HI often exhibit ‘impulsive and socially immature behaviors; less ability to take care of their own needs; lack of self-direction; and more dependence on adults, than normally hearing counterparts’ (Myklebust, 1996). Panda (1997), consequently opines that the severely HI or deaf people do ‘feel inferior and helpless, have poor self-concept, and temper tantrums, and make themselves submissive, have poor gross motor coordination, delayed hand preference, hyperactivity, short attention span, emotional inability, slightly low IQ than normal persons, poor language and communication skills’. All of these are so comprehensive and crosscutting sensorial functionality deficit which makes understanding of abstract concepts and adjustments to vocational situations very difficult if not impossible (Panda, 1997).

Aside the fact that hearing impaired persons have communication challenges, their poor communication situation is also sometimes presented as a community problem since their ability to effectively participate in growth and development of their communities is hindered or reduced. According to Adams (1987), ‘the effects of auditory deprivation results in poor communication’; it has the propensity to adversely affect ‘social, psychological and many other spheres of life (Adams, 1987). A study on psychological distress dimension of hearing impaired subjects revealed that persons with hearing impairment are ‘more prone to depression, anxiety, sociological maladjustment, interpersonal sensitivity, and hostility than subjects with no hearing problems ($p < 0.05$)’ (Monzani et al., 2008). Thus, HI can result in ‘depression, anxiety, irritability and feelings of inferiority complex, restless, distractible, hypersensitive, aggressive, lack perseverance, crying over minor annoyances, shy, suggestible, lack self-confidence, show temper outbursts, and demanding’ (Mohanraj, & Selvaraj, 2013; Keilmann et al., 2007; Tidball, 1990; Dharitri & Murthy, 1990).

2.1.2.6 Situation of the World's Disability

It has been estimated that more than one billion people constituting about 15% of population of the world has one form of disability or the other. 110 to 190 million adults have severe disabling conditions (WHO, 2014; Frontera, 2012). Hearing impairment is a phenomenon that is common and affecting many people globally but others are simply disabling. The estimation is that over 500 million have HI and that 1:10 of children has HI which has to be diagnosed earlier enough in order to find medical or social remedy to it so children don't get to develop complications during later years or face undue frustrations during childhood especially in their learning efforts. However, WHO reports that, 'over 5% of the world's population (i.e. 360 million) people have had disabling HI with 328 million adults and 32 million children (WHO, 2012). Of the 360 million, '80% of HI people live in developing countries while over 275 million people have had between moderate and profound HI in both ears representing about 4.2% of the world's population (WHO, 2012; Nsamenang & Tchombe, 2011).

Globally HI has been on the increase partly as a result of the 'ageing population and increased hearing loss amongst younger people due to their exposure to noise'. WHO predicts that by 2030 acquired HI amongst adults will count amongst the 'top 10 disease burdens in developed countries, even more costly than diabetes'. The effects of acquired HI on quality of life of the affected can be unearthing particularly through 'loss of confidence, social and economic isolation and psychological trauma, as well as low level of responsiveness to the fast moving elements of the environment (WHO, 2012).

International Disability rights

Since disabling condition is more felt by PLWD due to impositions or barriers raised by social systems that unavoidably deface the dignity and human person of PLWD, disability is internationally recognized as a human right condition. That is particularly, why international legal and normative instruments have established frameworks that seek to protect and enhance the fundamental human rights of PLWD. United Nations Convention on the Rights of Persons with Disabilities is one such international legal framework that advocates the rights of PLWD to be protected and harnessed for enjoyment at all material times possible. The following tenets capture essential elements or instruments of the international legal regime on PWLD: these include; Universal Declaration of Human Rights (UDHR), International Covenant on Economic, Social and Cultural Rights (ICESCR), International Covenant on Civil and Political Rights (ICCPR), Convention on the Rights of Persons with Disabilities (CRPD) and Convention on the Rights of the Child (CRC).

Universal Declaration of Human Rights (UDHR) is a foundation human right instrument which declares that human rights entitle human beings the protection and promotion of their ability to meet their ‘basic needs with dignity and respect’ and that fundamental to every human right center on, ‘all human beings born free and equal in dignity and respect’ (UDHR Article1). Clearly, this provision prohibits discrimination of any kind against PLWD.

International Covenant on Economic, Social and Cultural Rights (ICESCR) is an international legal instrument that oversees all essential human rights relating to economic, social and cultural wellbeing of everyone. Some relevant provisions have it that, ‘all persons (including persons with disabilities) have the right to ‘work, social security, family life, adequate standard of living,

and education' (ICESCR Articles 6, 7, 9, 10, 11, 13). Also, governments are required to protect and harness the right of everyone to enjoy highest attainable standard of physical and mental health (ICESCR Article 12). Governments are equally obligated to guarantee the exercise without any discrimination all the rights in the ICESCR will be exercised without discrimination (Article 2). All these provisions count as part of its core concerns the protection of socio-economic rights of PLWD.

International Covenant on Civil and Political Rights (ICCPR) is a counterpart international legal instrument with ICESCR which associated rights of people in respect of civil and political domains with demands that clearly prohibit discrimination against PLWD. Article 26 reinforces the obligation that, 'all persons are equal before the law and are entitled without any discrimination to the equal protection of the law which shall prohibit any discrimination and guarantee to all persons equal and effective protection against discrimination on any ground' (Article 26). Governments are also required to ensure that 'the rights to life, physical integrity, to individual liberty and security, to privacy and to procedural fairness in law' are protected (Articles 6, 7, 9, 10, 14, 16, 17).

Convention on the Rights of Persons with Disabilities (CRPD) is a more targeted international legal instrument with all salient rights of particular concern to PLWD. For example ,PLWD are profoundly 'entitled to exercise their civil, political, social, economic and cultural rights and thus enjoy all human rights and fundamental freedoms on an equal basis with others on equal basis with others (thus encapsulating all provisions of ICESCR and ICCPR) (CRPD Article 5) . In particular, PLWD 'have the right to be actively involved in planning and pursuing HIV/AIDS

policies and programs, especially that which have direct impact on them' (Article 4). Governments are required to 'provide PLWD with the same quality and standard of health care and programs as provided to other people, including in the area of sexual and reproductive health and population-based programs' (Article 25). Governments are also obliged to 'enable persons with disabilities to attain and maintain their maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life' (Article 26). Therefore, PLWD are mandated by right to be positioned in such a way that they can acquire all relevant knowledge especially relating to HIV/AIDS and can make informed sexual reproductive decisions that ultimately keep them away from being exposed to more vulnerability.

Convention on the Rights of the Child (CRC) is an international legal instrument, relevant for PLWD because it protects the rights of children. More important to note; disabled children are more vulnerable and even require greater protection by the provisions therein. It provides that governments are obliged to 'protect the human rights of all children, including children with disabilities' and that the rights as contained in the CRC 'must be applied without discrimination based on disability' (Article 2). Necessary support for every child with disability 'shall be designed to ensure that each and every one of them has effective access to and receives education, training, health care services, rehabilitation services, cultural acceptance preparation for employment and recreational opportunities in a manner conducive to making them achieve their fullest possible social integration and individual development'. By virtue of these provisions relating to children and in combination with the positive forces of the other international legal norms, it behooves on state parties, institutions therein and every other person

to strive to ensure that children with disabilities are made to realize their fullest potential, human dignity and personality (Article 23) (Human Rights Watch, 2011).

African Charter on Human Rights (ACHR) is a regional international human rights instrument with reinforcing tenets of some of the fundamental universal legal norms. It imbibes in people living in Africa, the spirit of appreciation and respect for fundamental freedoms and rights of its diverse people which includes people with disability. For example, Article 19 of ACHR asserts that, ‘all peoples are equal and must enjoy the same respect and have the same rights with absolutely nothing justifying any domination of anyone by another, not even disabled people’.

International Human Rights for the Hearing Impaired

For hearing impaired people, apart from other fundamental human rights enjoyed by every other person because he or she is human, fundamental elements of human rights which ought to be harnessed include; ‘access to and recognition of sign language including acceptance of and respect for HI people’s linguistic and cultural identity, bilingual education, sign language interpreting and accessibility’ (Haualand & Allen, 2009). A study conducted by World Foundation for the Deaf in 2009 found that:

Respondents from 19 countries indicated that their governments did not regard Deaf people as equal citizens while 44 countries had legal recognition of sign language found mostly in the fields of education and social services. Driver’s license was not issued to deaf people in 31 countries. However but a few, the deaf were allowed to vote country respondents. But with limited access to the media and other information, high illiteracy rates and heavy social

prejudices in most countries human rights of the Deaf were violated and their status as equal citizens simply denigrated.

The right to education was largely not denied in most countries but the education system and/or literacy levels of Deaf children were not satisfactory in any respondent country. Only 23 countries provided bilingual education in sign language and the national language to Deaf children in some schools. In all other schools and countries, Deaf children's access to education was limited. Most respondents indicated that the quality of education for Deaf people was low and the illiteracy rate high, which suggested that there was a huge ignorance in education systems about the importance of sign language in Deaf education.

Respondents from 80 countries had sign language interpreters, but only 32 governments took some responsibility in paying salaries for the sign language interpreters. There is sign language interpreting training of varying quality in 43 countries, and only 30 countries have a Code of Ethics that secures the autonomy of Deaf people in situations where a sign language interpreter is involved. Only 18 countries have a sign language interpreting service, professional training and a Code of Ethics for sign language interpreting. Only 11 countries indicated that Deaf people did not have access to government services. The limited access to sign language interpreting indicates that there are almost no countries where Deaf people have real access to government services.

Respondents from 77 countries recognized that the Deaf had the right to work and earn a salary, but only 47 had anti-discrimination legislation in the field of employment that protects Deaf

people against discrimination at work. Fifty countries indicated that the Deaf can access university education, but only 18 countries provided sign language interpreting at universities. In all other countries, Deaf people's access to higher education was very limited.

Respondents from 52 countries were ignorant about whether the HIV/AIDS situation affected Deaf people in their country, or have had no information about HIV/AIDS at all. Respondents from the African regions nonetheless portrayed the reasons to believe that they were the most aware of the HIV/AIDS situation although ironically these are also regions with low access to public services. Thus most countries needed more HIV/AIDS awareness campaigns and/or information about HIV/AIDS directed at associations of the Deaf and individual Deaf people, as the situation appeared precarious' (Haualand & Allen, 2009).

The situation, since the disability report was launched in 2009, has not significantly changed for the better. Deaf people in Ghana in particular still face various limitations and disparaging structures or elements that not only make them unable to enjoy their fundamental rights but also significantly prevent them from acquiring relevant knowledge in the areas that affect their welfare such as that of knowledge about HIV/AIDS.

2.1.2.7 Disability Situation in Ghana

Much as in the world, so it is in Ghana. PLWD constitute not less than 10% of the about 24 million Ghanaians. Empirical estimation has had over 5 million persons that lived with disability in Ghana in 2011. This represented about '1/5th of total population, including 2.8 million people with mental disabilities' (Human Rights Watch Report, 2012). So many Persons with hearing

impairment in Ghana are as reflective of the global situation too especially as obtained in developing countries.

Disability movements that advocate for welfare of PLWD to be harnessed in Ghana include; Disability Movements in Ghana, Ghana Federation of the Disabled (GFD), Disabled People Organizations Denmark (DPOD), Ghana Society of the Physically Disabled (GSPD), Danish Association of the Physically Disabled (DAD), Ghana Association of the Blind (GAB), and Danish Association of the Blind (DAB).

Hearing impairment in Ghana

Hearing impaired people in Ghana are estimated to be about '1,678,877 people, an estimation based on extrapolated prevalence or incidence of hearing impairment in U.S., U.K., Canada or Australia'. This only gives a rough estimate for getting a fair idea on the magnitude of hearing impairment in Ghana. A study by Amedofu et al., (2003) revealed that out of 145 patients with HI of measurement higher than 25dB HL, 7.6% (11) had severe HI much as same as that of profound HI. Majority of 66.9% (97) nonetheless had mild HI while 17.9% (26) followed by moderate HI. A 2009 study by Marfo (2009) in Offinso Municipality of Ghana, found similar pattern of HI situation in Ghana with 42% (57) having mild HI, 4%(6) profound HI, 30% moderate HI, 11% (15) moderate HI and 13% (17) severe HI (Nyarko, 2013).

A study conducted by Ghana Education Service (GES) found that 'about 50.9% of schools in Ghana had physically challenged persons, pupils and staff alike'. About 57.1 % of school authorities said GES has a policy on disability especially supporting 'inclusive education and

how special attention needed could be sourced from nearest Ghana education service for onward reposting to special schools'. However, the special schools specially made for PLWD are not adequately resourced and their level of spread across the country to ensure easy access by disabled people is limited. It was also revealed that 14.8% of school authorities across Ghana said 'they were not aware of the rights available to persons with disability'. More sadly, about '20% of all school authorities in Western region said they were not aware of the rights available to persons with disability'.

In respect of Schools without Disability Friendly Structures, it was found that 'irrespective of disability rights' awareness or otherwise of school authorities, about 59.5% had no disability friendly environment' and therefore some students with disability found it challenging to, for instance, 'climb stairs, because the staircase had not been designed to cater for physically disabled persons'. Most schools in Ghana have this very challenge of disability unfriendly staircase and other such structures. Ironically, 'minority (28.6%) of the physically disabled interviewed said that they encountered problems because of unfriendly nature of school structures such as stair cases, school lavatory, and dual desks; as compared to majority (71.4%) who had no problem accessing school facilities, because some of them such as the lame climb stairs with relative ease'. Another interesting finding was that up to '40.5% of schools including inclusive and special schools had disability friendly structures'. For example, S.D.A J.H.S Agona in the Sekyere South district of the Ashanti region was noted to be 'all-inclusive school which had disability friendly structures'. At a special school, Jachie Pramso Senior High School, in Ashanti region of Ghana, disability friendly structures could be found.

Apparently however, hearing impaired students easily overcome most of the structural inadequacies for the disabled but they have a peculiar problem of lack of trained sign language instructors and speech hearing enablers to facilitate their daily learning needs. It is only in the special schools that disabling hearing impaired or deaf people can relatively fit in, at least in Ghana. For in almost all public and private schools in the country, it is quite a problem for both hearing impaired students and their teachers who had not been trained to communicate in sign language.

Despite the structural challenges facing students living with disability in Ghanaian schools, inclusive education as ‘a system of education where students with special educational needs are enrolled in ordinary classes in their community schools so they are not only provided with relevant support services but also are made to learn together with other students without associated handicaps’, happened to have received a higher favorable rating by the school authorities interviewed. Indeed, about 84.2%) supported inclusive education adducing reasons such as:

‘The 1992 constitution frowns upon any form of discrimination; it enhances socialization; it makes such disabled students feel part of the society they belong to; and parents in the rural areas do not have the means to send their wards in special schools’. This is where the competition between ideals and relevant practice comes into sharp contestation. Of course, it would be wonderful to have, for instance, hearing impaired students attend any of the community schools of their choice but how practical is it to get all teachers trained in sign language and how further

practical is it for government or private school authorities to equip all schools with hearing enablers and so on? Thus, logistical nightmares may rear ugly heads here if care is not taken.

National Disability Rights

In Ghana, legal and social structures are being put in place to ensure that disabled people enjoy their rights necessary to realize their full potential, human dignity and personality. These include; the 1992 Republican Constitution of Ghana, Ghana National Disability Law 2006, Mental Health Law 2012 and National Council on Persons with Disability have been, amongst others, established to protect and promote the welfare of PLWD in the country. Some significant efforts have thus been made in the country to replicate necessary international legal regimes and instruments that seek to protect and enhance the rights of disabled people. The 1992 Republican Constitution of Ghana and the 2006 Disability Law particularly have profound provisions that invite both institutional and people's respect and support for protection, maintenance and promotion of equal rights for all citizens and residents of Ghana irrespective of their status or particular orientation.

The 1992 Republican Constitution of Ghana is a foundational part of legal wisdom from which all other rights in the country can be generated or established to harness appropriate and equal treatment of all persons. The following few provisions of the constitution are poignant; Article 15(1) codes the inviolable nature of the dignity of everyone by stating that, "the dignity of all persons shall be inviolable"; Meaning no one shall do anything that attempts to devalue the worth of the human person no matter who the person is. Also, Article 17 (1) and 17(2) of the constitution go further to demand that not only should the dignity of all persons not be subjected

to demeaning situations but also that, ‘all persons are equal before the law’ and must ‘not be in anyway be discriminated against on any basis including: gender, race, color, ethnic origin, religion, creed or social or economic status’.

Indeed, Article 12(2) has beforehand made the enjoyment of fundamental human rights as an entitlement to each individual person regardless of ‘race, place of origin, political opinion, color, religion, creed, or gender’ or any such social constructs. In all of these, one thing is unambiguous, which is that , persons with disabilities are equal human beings with the abled counterparts whose fundamental human rights must be respected at all material times. They must not be discriminated against or given a sub-human or underclass status in society. A more pointed provision in the constitution however is enshrined in Article 29 which deals directly with PLWD. It indicates generally from sub-sections (1-8) that, PLWD do possess the right to be protected and enabled as well as enjoy family life and to fully take part in social, economic, political, creative or recreational and other such activities of normal life without discrimination, ill-treatment (Azanduna, 2010).

However, enforcement of constitutional provisions as spelt out hereof is perhaps more feasible if the details of implementation are worked out in legislative instruments. The laws on disability were therefore necessary to promote the visibility and realization of this operative logic.

The Ghana National Disability Law (Act 715, 2006) represents a coordinated legal framework on disability enacted to ensure that rights as enshrined in Article 29 of the constitution and such other rights therein are mainstreamed and implemented. In particular, Act 715 demands amongst others ‘access to public places, free general and specialist medical care, education, employment

and transportation’ and ensuring that overall dignity and fundamental rights of disabled persons are protected, maintained and promoted whereby ‘discrimination against persons with physical, sensory, intellectual, and mental disabilities in employment, education, health care, air travel and other transportation, and in such other important areas of normal life’ are sharply prohibited (Human Rights Watch Report, 2012; Azanduna, 2010).

As would have noticed beforehand, in theory or indeed on paper, disability rights have been protected, maintained and promoted in Ghana. But because the realities of the situation of PLWD contrast with the gamut of scintillating legal provisions, it is no wonder that disability activists in Ghana are up in arms against state institutions that ought to translate the legal obligations into reality. In fact, apart from institutional and leadership failures thereof, the largely conservative nature of Ghanaian society where disregard for disability appears to be deep-seated in cultural and religious realms does significantly have adverse contribution to the adequate realization of the dignity and welfare of PLWD. A lot of abuse and discrimination of PLWD still goes in many places of social life in Ghana including; individual homes, prayer camps, schools and workplaces (United States Department of State (USDS), 2013). Apparently, disabled people are as stigmatized as those living with HIV/AIDS in the country. Young people are often confronted with the forces of these vulnerabilities.

2.1.3 Profiling Adolescence

This section takes a look at overview of conceptualization and presence of Adolescence in the global social holding.

2.1.3.1 Concept of Adolescence

Adolescence generally refers to a period in the life of young people where they are no longer children but not adults too. It is a period when young people experience rapid emotional growth and development in body characteristics and maturity. Period of adolescence in terms of age-group can differ from one jurisdiction to the other and even from one scholastic or institutional orientation to the other. While there is a view that adolescent girls or boys fall within the teen ages, others observe that adolescence start from age 10 or 11 to age 15 or 19 years. In fact, World Health Organization (WHO) defines the age range of adolescence to fall between 10 and 19 years of age (Appiah-Agyekum, & Suapim, 2013). Since the development and growth of some disabled people are slow and sometimes stunted, adolescent upper age limits for such people could even be raised to 21 or even 25 years.

Whatever the disposition, what is important to note is in reference to a group of young girls and boys who are in their active period of development and growth where they are actively involved in learning and mastering adult behaviors and activities as they grow to eventually become independent thinking beings. Thus, adolescence represents a transitional phase between childhood and adulthood along which young people undergo ‘physiological, cognitive and emotional changes’ such as ‘developed sexual characteristics, abstract thought, fantasized role in different situations, increased sexual interests and peer influences’ (Mulu, Abera, Yimer, 2014).

2.1.3.2 Global Presence of Adolescence

Adolescents are known to constitute a greater chunk of the global population. They constitute about 1 out of 6 people in the world thus amounting to about 1.2 billion people aged between 10

and 19 years. This is age bracket with huge student numbers too. A lot of disable people worldwide can be found in this age bracket too. As many children as possible continue to enter this age bracket annually. However, many of them also die before they exit this age group upon entry.

In 2012, for example about 1.3 million adolescents perished from causes that were mostly ‘preventable or treatable’. These included; ‘road traffic injuries, HIV, suicide, lower respiratory infections and interpersonal violence’. In fact, having recorded daily adolescent deaths of 330 persons in 2012, road traffic injuries led the causes of death of adolescents (WHO, 2014).

There is also a worrying static that almost half of all ‘mental health disorders in adulthood happen to by age 14, albeit mostly undetected and untreated’. This is because adolescents appear active and try to hide their personality as they try to emulate the adults. They also become sexually active during this period and are often exposed to further dangers such as early pregnancy and contraction of infectious diseases such as HIV/AIDS. . For instance, globally, the second cause of death for girls in age-group 15-19 is due to pregnancy and childbirth complications. Up to ‘11% of all births worldwide is between girls aged 15 and 19 years’ many of whom from developing countries like Ghana (WHO, 2014).

Indeed, according to the 2014 World Health Statistics, ‘global adolescent birth rate stood at 49 per 1000 girls between 15 and 19 years with country rates ranging between 1 and 229 births per 1000 girls’. Even though this represents a significant decline from 1990 birth levels for that age, the situation is still worrying because this age-group is development stage not necessarily for

reproduction. With respect to HIV, over 2 million adolescents are infected with the disease with fears of rising adolescent deaths from HIV/AIDS particularly in sub-Saharan Africa after 30% death reduction amongst adolescents subsequent to the eight years peak period. This may be due to more risky sexual escapades or inadequate health support for such vibrant people in the region (WHO, 2014).

2.1.4 Interrelating HIV/AIDS, Disability/Hearing Impairment and Adolescents

This section examines the interrelationships that exist between HIV/AIDS, Disability/Hearing Impairment and Adolescents.

2.1.4.1 Relationship between HIV/AIDS and Disability

Much attention has not been paid to the relationship between HIV/AIDS and disability and so there are misconceptions regarding the extent to which disabled people can equally be infected with HIV much as happens to the abled people. Vulnerability to HIV of disabled persons first came into the front burner at a German Symposium on Disability and the Global Survey on HIV/AIDS and disability in 2004. People that have ‘sensory, physical, intellectual, and developmental disabilities’ are often seen not to be exposed to the risk of HIV, assuming that such disabled people are not more ‘likely to be sexually active, use drugs, or engage in such other risk behaviors’(Groce, 2003). With this perception which Groce (2003) regards as ‘mistaken’, ‘general HIV prevention, care, support, and treatment campaigns and services’ have not often been much availed to People Living with Disabilities (PLWD) (Tun & Okal, et al., 2013; Groce, 2004).

A review conducted on 12,252 references relating to HIV and disability in sub-Saharan Africa revealed that PLWD ‘do not have a lower risk of HIV as compared to the general population, and that, women with disabilities are especially affected due to their more exposure to sexual abuse (ESCAP, 1995)’ with ‘increasing gradient in the risk of HIV according to gender and disability statuses. Social inequalities or exclusion (Magadi, 2013; Mayer et al., 2012; Parker, 2002), stigmatization, lack of independence, weakness against sexual violence, lack of education, lack of sex education, lack of knowledge about HIV and safe sex practices, substance abuse, poor access to health services and poverty (Rohleder, 2009) have been important ingredients that instigate exposure to risk of HIV, and PLWD are adversely affected by all these, thus making them even more vulnerable to HIV infection. Indeed, these instigating factors are predominant in developing countries especially in sub-Saharan Africa where a person may suffer double jeopardy or face double discrimination from the general public because both disability and HIV are observed with some degree of scorn but in recent times pegged on a wavelength of mixed feelings and skepticism (Hughes et al., 2012; Trani & Loeb, 2012; WHO & The World Bank, 2011; Braithwaite & Mont, 2009; Hanass-Hancock, 2009; The World Bank, 2008; Brownridge, 2006; Groce & Trasi, 2004; Yousafzi & Edwards 2004).

This relationship between disability and HIV was given a further collective hearing in 2008 at Kampala Declaration on Disability and HIV and AIDS. The declaration allocated roles international and national players were required to champion in light of including disability in planning and programming of HIV/AIDS issues (Hanass-Hancock, Regondi, & Nixon, 2013; Hanass-Hancock & Nixon, 2009; United Nations, 2006; Groce, 2004). This was further reinforced by a joint policy brief from WHO and UNAIDS in 2009 (UNAIDS, WHO, &

OHCHR, 2008). UNAIDS and World Bank have gone further include disabled persons in their strategic plans for Africa so as to effectively help in the fight against the spread of HIV/AIDS amongst the disabled (The World Bank, 2008; UNAIDS et al., 2008).

Another angle of the relationship is that, HIV infected persons can along the development stages of the disease become so impaired to the extent that they will not be able to overcome ‘social, economic, political or other barriers’ that adversely affect ‘their full and effective participation in society on an equal basis with others’ at which stage they would have obtained disability status. Thus with this one, it is not about PLWD getting infected with HIV/AIDS but rather HIV/AIDS making some infected people part of the disability community (Beaudrapa, Mac-Seingb & Pasquier, 2014; Abhay, Syed, Lalit, Sanjay; Goyal & Johrapurkar, 2008).

However, even though there is increasing awareness on the need to connect disabled people with HIV programs, the state of vulnerability of PLWD still lends itself to ‘social exclusion of PLWDs from mainstream HIV/AIDS services and poor access to treatment’. This is typified by the fact that in sub-Saharan Africa, ‘majority of existing HIV Testing and Counseling (HTC) services are physically inaccessible, do not offer counseling using sign language, IEC materials on HIV/AIDS are not availed in Braille for the visually impaired, complex or vague messages do not reach those with intellectual impairments, while the physically handicapped people often depend on their sexual partners to put on condoms’.

The crucial thing to note is that there is a clear relationship between HIV/AIDS and Disability and that the misconception that disabled people may have lower risk of HIV is unfounded. Such

perception has to be dismissed mindful of the fact that everyone has a potential risk of getting infected with HIV. Greater precaution, better attitude and reaching out to vulnerable people who may not have ready access to information to educate themselves much as compared to the abled and affluent matters a lot in this regard (Tun & Okal, et al., 2013; Hanass-Hancock, Strode, & Grant, 2011).

2.1.4.2 Relationship between HIV/AIDS and Adolescents

The adolescent age groups have been observed to be most at risk to be infected by HIV/AIDS since, among others, they are 'sexually active and many sexual contacts among them are unprotected' (Appiah-Agyekum, & Suapim, 2013). In 2012, adolescents with HIV aged 10-19 years were about 2.1 million persons in developing countries.

Over 5.4 million adolescents are infected with HIV/AIDS globally with about 40% of all new infections of HIV/AIDS being adolescent, most of them found in countries of sub-Saharan Africa. Of this rate of Global HIV/AIDS infection, young women constitute over 60% of all young people living with HIV; with 72% in Sub-Saharan Africa. The clear deduction is that majority of HIV/AIDS infections amongst adolescents live in Africa, who are mainly young women (Mulu, Abera, & Yimer, 2014).

The easy to apprehend culprits for this higher infection rate include; young people's vulnerability to 'physical, social, psychological and economic' situations, elements, events and circumstances' which are very pervasively dynamic and unpredictable on their fortune domains. One key risk factor is that often, adolescents tend to think that they are 'not at risk or may lack

access to adequate HIV/AIDS information or services' either because they are not provided by relevant stakeholders or they tend not to be interested in such information thus continuously increasing their risk of getting infected by HIV. In Africa where sex education is low, health systems are weak, young people's sex tabooed and HIV/AIDS stigmatized, one should not look any further to understand why the combination of other universal factors therewith won't make more HIV infections more real and prevalent in sub-Saharan Africa (Mulu, Abera, & Yimer, 2014; Wangulu, 2008; Amoah, 2005).

Although Ghana has been reported to have a relatively low HIV prevalence rate in a continent seen as hardest hit by the menace, 'prevalence of HIV/AIDS among the youth, aged 15-24, has been noted to be high'. In 2009 for example, HIV prevalence among adolescents in this age group, was 2.1%, a dynamic decline from '2.5% in 2004, 1.9% in 2005, 2.5% in 2006, to 2.6% in 2007, but an increase from 1.9% in 2008 (National AIDS Control Program, Ghana AIDS Commission & Ghana Health Service, 2010). In the USA too, many young people are exposed to getting infected with the HIV/AIDS. For instance, about '8,294 young persons aged 13-24 Years were diagnosed with HIV infection in 2009 in the 40 states with long-term HIV reporting, representing about 20% of the persons diagnosed during that year'. Results from the National Youth Risk Behavior Survey (YRBS) conducted by Center for Disease Control (CDC) in 2012 reported that, 'many adolescents in USA begin having sexual intercourse at early ages: 46.0% of high school students have had sexual intercourse, and 5.9% reported first sexual intercourse before the age of 13. Of the 34.2% of students reporting sexual intercourse during the 3 months before the survey, 38.9% did not use a condom. Young people with older sex partners may be at

increased risk for HIV. It shows how early adolescents can go in for sex and how non-protective some can be (CDC, 2012).

Therefore, HIV/AIDS has a strong link with adolescence (Mulu, Abera, & Yimer, 2014); suffice to indicate that globally and even in otherwise hardest hit countries such as Swaziland, infections of HIV amongst young people have decreased, albeit slightly. For example, ‘the absolute number of young people with HIV/AIDS infections declined from 5.7 million [5.0 million– 6.7 million] in 2001 to 5 million [4.3 million–5.9 million] in 2009, indicating prevalence and incidence of the disease among young people in many countries. However, worldwide, young people between 15 and 24 years constituted 41% new infections in 2009 (UNICEF, 2011).

Thus, about 890,000 [810,000–970,000] young people aged 15–24 were newly infected with HIV in 2009 – nearly 2,500 every day – with 79% of these new infections occurring in sub-Saharan Africa (note: 20 sub-Saharan countries constituted 69% of these new infections). In 2009, one in three newly HIV infected young people came from either South Africa or Nigeria’. This depicts a clear danger to youth development in these countries (UNICEF, 2011). In sub-Saharan Africa, prevalence of HIV among young women and men declined by 42% between 2001 and 2012 (UNAIDS 2013). Note: different studies come out with slightly different figures on the new infections but this disparity only underlies the challenge of finding accurate data on HIV/AIDS – most of them, after all, are estimates.

Adolescents form the core of the youth and of the world’s population. These include adolescent with disability who peculiarly face impediments such as; ‘prejudice, stigmatization, social

isolation and discrimination'. Their exposure to HIV/AIDS this way should be worrying and thoughtful. Worrisome because the disease may get out of control if necessary preventive targeting measures are not advanced to curb the situation. Thoughtful, because the solution primarily lies in proper parenting and mentoring of the youth from homes, schools and religious centers mindful that penetrative education and sensitization drives are leading solution instruments against the continuous spread of HIV/AIDS amongst the adolescents (Wangulu, 2008; Amoah, 2005).

2.1.4.3 Hearing Impaired Adolescents with HIV/AIDS

Hearing Impaired people are also particularly at risk of HIV because, they are not only exposed to daily temptations of life but also unfortunately they have limited access to information that relates to speech especially in respect of daily interactions with members of society and information on radio and TV or such other sound related sources. There is however limited research data the relationship between HIV and disability (Groce, 2003; Health and Disability Working Group, 2004) particularly, the hearing impaired but studies done on this subject report that, HIV infection levels amongst the hearing impaired are equal to or higher than those of the rest of the members of the public (Henderson, Angala, & Ngare, 2006).

An outcome of a study in Maryland USA revealed, for example, that 'Deaf people are 2 to 10 times as likely as their hearing counterparts to be HIV positive'. Reasons adduced include; access to relevant information about HIV/AIDS and safe sex, inadequate treatment programs, and issues such as confidentiality within the community, difficulty in getting information from the media and lack of prevention programs aimed specifically at them' (Hanass-Hancock, Strode,

& Grant 2011; Gaskins, 1999; Monaghan, 2003). Hearing impairment therefore have disabling prowess that severs a crucial nexus between events in society such as HIV activities and full and effective participation thereof by the hearing impaired, thus putting them on high spectrum of knowledge deficit and exposing them to risk of HIV infection.

The situation is even more acute when it comes to hearing impaired adolescents or their younger colleagues infected with HIV/AIDS. This is because most adolescents HI are subjected to all kinds of abuses and humiliations by both their caretakers and members of the public relative to their counterparts. According to Groce (2003), hearing impaired people face the ‘increased risk ‘to be subjected to abuses such as rape, insults, beatings and prevention to marry as tabooed especially in African countries. Predators normally abuse the hearing impaired or any such disabled person because victims can hardly believably report abuses to other people and when they do report only little or no action is taken by the public or parent (Groce, 2003). Adeniyi & Olubukola (2014) reports that disabled persons like the hearing impaired who are virgins in Nigeria are sometimes raped with impunity because perpetrators give an amazing reason of ‘sexual cleansing’. That is how ridiculously worse such tainted minds can get to. These acts could easily expose them to the risk of contracting sexually transmitted diseases including HIV/AIDS.

Knowledge levels of HIV/AIDS amongst people are generally low in many African countries including Nigeria and Ghana. For this reason, people easily hold on to misconceptions and engaged in all practices and behaviors that eventually can lead them to contracting HIV/AIDS (Adeniyi & Olubukola, 2014). Another challenge confronting hearing impaired adolescents is

that, they ‘lack information and necessary resources to ensure safe sex. They also face the general challenge of sex being believed to be sacrosanct and ought not ‘be discussed in public domain’, especially when they are in Africa (Maticka-Tyndale & research team, 2012). So even if those that can hear find it difficult to discuss about sex freely in the open in order to best understand issues surrounding sex, what more could one say about the hearing impaired who apparently have general communication deficit (Adeniyi & Olubukola, 2014). One would be minded to appropriate the foregoing to suggest that hearing impaired adolescents face similar risk factors as compared to disabled and abled adolescents except that their exposure to HIV risk is directly proportional to their ability to decode sounds and to read and comprehend messages about HIV/AIDS.

2.2 Perspectives on HIV/AIDS knowledge, attitude and sexual behavior

Having interrogated the profile vacillations and dimensions of HIV/AIDS, Disability and Adolescence in section 2.1 to provide a comprehensive context, this section now examines relevant empirical and theoretical perspectives on HIV/AIDS knowledge, Attitude to HIV/AIDS, and Sexual Behavior of Hearing Impaired Adolescents as well as Triangulation between the three variable parameters.

2.2.1 HIV/AIDS Knowledge

Knowledge about HIV/AIDS is one of the instruments used to prevent acquisition or transmission and management of HIV/AIDS and other such Sexually Transmitted Infections (STIs). With relevant and adequate understanding and awareness of what is entailed in

HIV/AIDS, individuals would have obtained a potent arsenal to defeat poor attitudes and practices or behaviors towards HIV/AIDS (Molla et al., 2009).

Studies in many parts of the world have exhibited results that posit that there is a general high level of HIV/AIDS awareness amongst the general public including adolescents. In Ghana, Tanzania, Swaziland and other countries in Africa where such studies were conducted, results showed high level of awareness amongst the youth. However, there was reported to be very low level of awareness of the disease amongst the disabled and hearing impaired. This high awareness only indicated that most people have ever heard of HIV/AIDS but their deep understanding and appreciation requiring a clean clearance on high knowledge was questionable. Indeed, literature generally has shown that misunderstanding about HIV/AIDS is still rife in Africa. Disabled persons in sub-Saharan Africa particularly have been deemed to record poor awareness level about the disease, apparently because of their high illiteracy rates and limited access to relevant information, education and communication materials (Zakayo and Lwelamira, 2011; Molla et al., 2009; Tolulope & Oludare, 2009; Lema et al., 2008; Seifu et al., 2006). There is however no clear and conclusive data on the level of knowledge of HIV/AIDS amongst the hearing impaired adolescents in Ghana.

2.3 Summery

In this chapter, relevant literature on adolescents with hearing impairment (HI) and HIV/AIDSs were reviewed. This was done reviewing theoretical literature to provide a theoretical framework for the study. Social construction of reality (Berger & Luckman, 2011), social ecology theory (Bronfembrenner, 1994) and sexual scripting theory (Gagnon & Simon, 1973) were discussed in relation to HIV/AIDSs knowledge and sexual behaviour. Key concepts on HIV/AIDSs, origin and

the situation of HIV/AIDS globally, Africa and Ghana were highlighted in the chapter. Thereafter, the concepts of disability, types of disability were delineated. However, emphasis was placed on adolescent with hearing impairment. Finally, empirical literature on HIV/AIDS knowledge and sexual behaviour of adolescent with HI were discussed in the light of current literature.



CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The central objective of this study was to investigate students with hearing impairments' knowledge of HIV/AIDs and their sexual behavior/practices in the Ghanaian schools for the deaf. To achieve this objective, the researcher made use of mixed method design, consisting of survey design strategy of the positivists/postpositivists' tradition on one hand, and phenomenological design strategy of the social constructivists' tradition on the other (Creswell, 2009; Berger & Luckmann, 1966). The mixed method approach was adopted in order to reach out to many students with hearing impairments (participants) as well as to permit extraction of holistic and in-depth information (Feagin, Orum, Sjoberg, 1991; Cohen, Manion & Morison, 2000). For this reason, this chapter is divided into four major sections. Section one discusses research approaches, highlighting various research traditions and designs embedded in the quantitative, qualitative and mixed method traditions. Section two deals with sampling designs, where sampling strategies, instrument, validity and reliability of the instruments are discussed. The third part of the study looks at the data collection procedures, where access to research site, ethical consideration, data collection methods are described. The final part of the chapter deals with data processing and analytical strategies and tools used in analyzing the collected data.

3.1 Approaches and philosophical positions

There are three philosophical traditions in conducting research projects. These traditions, positivism; constructionism; and pragmatism, have serious implications to any piece of research work. Based on the three traditions, there are also three established research designs

(quantitative, qualitative and mixed method research designs). In each of the designs, there are several under all the three research designs. In each one of them, there are three interactions involved. There are interactions between the philosophical traditions, strategies of inquiry and the specific methods for data collection of various research designs. On the philosophical level, Creswell (2009) argued that the philosophical traditions of researchers (epistemological and ontological views) remain largely ingrained and influence the practice of research. Thus, they, philosophical ideas, cannot be detached from the research process, the researched and data and we cannot completely by-pass the philosophical paradigms (Creswell, 2009; Berger & Luckmann, 2011). The three traditions or philosophical position and their associated approaches are discussed below.

3.1.1 Positivism/Postpositivism

As figure 1 depicts, this study is influenced by the positivists/postpositivists' (quantitative researchers) worldview or scientific method of doing research. For example, one key tradition of quantitative researchers is their claim that the purpose of research is to develop theories (Jankowicz, 2000). The theories are general statements which are validly explaining phenomena. They [quantitative researchers] also have a deterministic philosophy (Creswell, 2009). Thus, they assert that when conducting research the researcher must reflect on the need to identify and assess causes that determine or influence outcome or effect (Creswell, 2009). They also argue that knowledge (research) is something researchers develop gradually by discovering more and more about what is 'out there' (Jankowicz, 2000). In addition, the positivists maintain that phenomenon (information/data) can be analyzed in terms of variables (Jankowicz, 2000; Cohen

et al., 2000; Creswell, 1998; 2009). On the whole, these assumptions or philosophy had an incredible influence on this study.

They [positivist/postpositivists' philosophies] influenced the research objectives aimed at examining associations /relationships among variables. Such objectives were aimed to measured variables on an instrument to generate numerical data. For instance, research objective one (1) and four (4), which aimed at examining associations between students' knowledge of HIV/AIDS and their sexual behavior/practices, could only be appropriately studied using non-experimental research designs since those questions were aimed at examining relationships among variables (Creswell, 2009; Cohen, et al., 2000). At the level of strategies of inquiry, the researcher employed survey methods.

3.1.1.1 Survey as a quantitative strategy of inquiry

Several strategies of inquiry abound in positivist/postpositivists paradigm: experimental, quasi-experimental and non-experimental strategies of inquiries. After a thorough review of methodological literature, however, the researcher settled on using survey method. One key reason for employing survey method was that it allowed for the study of perceptions, opinions and could be easily be used to reach out to many respondents (Punch, 2004; Cohen, et al. 2000). This type of strategy utilized different groups of people who differ in the variable of interest, but share other characteristics such as socioeconomic status and educational background (Kendra, 2012). So, survey instrument (structured questionnaire) was constructed and used to collect data based on measures (HIV/AIDS Knowledge and Sexual behaviors) completed by respondents. Although survey research method had the propensity in reaching out to many people and less

time consuming, it is not able to capture detailed and ‘thick descriptions’ of the students’ account of their knowledge of HIV/AIDS and sexual behaviors.

3.1.2 The Social Constructivism

Since the purpose of this study was to discover and describe HIV/AIDS knowledge and sexual behavior of students with hearing impairment as well as suggest guidelines for effective HIV/AIDS educational programming, social constructivists’ worldview, which deals with subjective realities of informants (Berger & Luckmann, 1966; Cohen, et al. 2000), could not also be by-passed. Put differently, it had a considerable influence on the research. The central thrust of the social constructionism, according to (Creswell, 2009), is that it refrains from the traditional notion of the absolute truth of knowledge. It does so because individuals (the researched) are capable and conscious of understanding that their worlds consist of multiple realities (Berger & Luckmann, 1966) and the multiple realities must not be taken for granted. As a result, social constructivists believe that knowledge (meaning) is socially constructed as human beings engage with the world they are interpreting (Creswell, 2009; Cohen, et al., 2000). So, for the researcher to do justice to a research topic/objective, the researcher must, first, gain sufficient understanding of the research setting and the informants’ social and subjective realities of the subject matter of the research. This is done via open-ended questions so that the informants can share their diverse and multiple views (Creswell, 2009). In this respect, the research questions one (1) and two (2) were intended to investigate the subjective meanings students attached to their knowledge of HIV/AIDS knowledge and sexual behaviors/practices. A detailed phenomenological analysis was used to uncover the various layers of students’ experiences, and

the different structures of meaning involved in their knowledge of HIV/AIDS and their sexual practices (Berger & Luckmann, 2011).

3.1.2.1 Phenomenology as a qualitative strategy of inquiry

In qualitative research or constructionism, the numbers and types of approaches are many. They include but not limited to case study, ethnography, phenomenology, ethno-methodology and grounded theory and historical approaches (Berger & Luckmann, 2011; Creswell, 2009; 1998; Cohen, et al., 2000; Kuyini, 2013). In this study, the researcher made use of phenomenology. It did so to study the students' perspectives on their HIV/AIDS knowledge and sexual behaviors. It described, in detail, the content and structure of the students' consciousness in order to grasp the qualitative diversity of their experiences of the HIV/AIDS and their sexual behavior, as well as to explicate their essential meaning (Kvale, 1996). That is, Berger and Luckmann (2011) argued that the apprehension of the lived experiences of students becomes illuminated only when a researcher 'takes over' the world in which others already live.

Phenomenology as a strategy of inquiry proved to be very adept at offering a richness and depth of information; it is a highly versatile tool with the capacity of paving the way for identification of complex set of circumstances that can come together to produce a highly valuable wealth of information on students' knowledge of HIV/AIDS and sexual behaviors. While phenomenology and its associated strategies of inquiry are generally credited for their capacity to examine and extract 'thick' data and in-depth accounts of students with hearing impairments, this approach is, undoubtedly, incapable of:

- a) accurately operationalizing and measuring some specific construct in the study,
- b) conducting group comparisons that are necessary for some analysis,
- c) examining the strength of association between variables of interest, and
- d) Specifying and the testing of research hypothesis (Guba & Lincoln, 1994; Castro, Kellison, Boyd & Kopak, 2010; Biggerstaff & Thompson, 2008).

3.1.3 Pragmatism/mixed method approach as a strategy of inquiry

In a similar vein, the two strategies of inquiry (positivism and social constructionism) explained above although were not capable enough to investigate students' knowledge of HIV/AIDs and sexual behavior in isolation, each one of the traditions had its own strengths and weaknesses, which could have had a tendency of affecting the study tremendously. For this reason and others, pragmatism (mixed method design) was employed. Sale, Lohfeld and Brazil (2002) defined mixed method approach as a combination of quantitative and qualitative methods utilized in a single study. Unusually, the two (quantitative and qualitative) are considered to represent one approach (mixed method). Similarly, several researchers including Creswell (2009); Denzin (1984); Cohen, et al. (2000); Tashakkori and Teddlie (2003, 2010); Johnson and Onwugbuzie (2004); and Kuyini (2013) argue that mixed method approach is not committed to any one system of worldview or paradigm.

Therefore, the researcher did not commit the study to any single worldview. Rather, it drew its philosophies freely from both quantitative and qualitative traditions. The researcher did not stick to only one tradition; she had the freedom to choose specific methods of inquiry, techniques and procedures of research that best suit the needs and purposes of the research (Creswell, 2009).

The truth and beauty of mixing approaches was that researchers depended or relied on what truly worked for her at any given time, specially, in the area of research design, instrument, strategy of inquiry, data collection methods and methods of data analysis. Put differently, the researcher opened her doors to multiple methods, different worldviews, and different assumptions as well as different forms of data collection and analysis (Creswell, 2009). Just as the other philosophical traditions have different design strategies, mixed method design also has several design strategies. But only three are well known: sequential, concurrent and transformative mixed method designs (2009). In this study, the sequential mixed method design was used.

3.1.3.1 Sequential mixed method as a strategy of inquiry

As the name suggests, sequential mixed method design strategy has to do with the researcher following a particular order. Depending on the objective, resources and availability of time, the researcher may decide to conduct quantitative before qualitative (*sequential explanatory mixed method design strategy*) or vice versa (*sequential exploratory mixed method design strategy*). Again, the researcher may use *sequential transformative strategy*, a two phase project with theoretical lens overlaying sequential procedure (Creswell, 2009). In this study, the sequential explanatory design strategy was employed when quantitative data were gathered and analyzed first followed by the qualitative data collection and analysis phase. The reason for beginning with quantitative was aimed at testing theories or concept, which was followed by a qualitative method involving detailed exploration with some cases.

This type of mixing method revealed several benefits. It provided a more comprehensive exploratory and descriptive picture of students with hearing impairments knowledge of

HIV/AIDS and their sexual behavior of which little is known. In addition, it allowed for a variety of perspectives in the area of HIV and hearing impairment, by providing a deeper understanding of the subject matter, probably, compared to the way monomethods do. In addition, having an independent source of data (teachers) may provide better validity considering the problem of bias associated with self-reports on sensitive topics like sexuality and HIV/AIDS, and the fact that this study also involves a population of learners with impairments. Key informant interviews explored the effectiveness of HIV/AIDS prevention education for this group of learners, as well as served as an independent source of information on the sexual practices, level of risk of HIV infection and barriers to HIV-related services among learners. Also, (Goodman, Bird & McCormick, 1992) argued that the use of combined approaches attempts to compensate for weaknesses of individual quantitative and qualitative methods, thus allowing for triangulation.

3.1 Research Design

Creswell (2009) defines to research design as a research plan or proposal that involves interaction of philosophical, strategies of inquiry and specific method. Thus, it involves procedures that connect decisions researchers make based on broad assumptions from various research traditions to detailed data collection methods and to data analysis. After a thorough and critical review of the nature of the study (research objectives and questions), mixed method design and/or its designs strategies were considered most suitable. Mixed method research design was considered because the research objectives were designed to cover a wide range of respondents and to bring out details from the viewpoint of students by using multiple data sources for easy triangulation. In this way, mixed method was used to offset the weakness of the quantitative and qualitative methods (Denzin 1984; Cohen, et al. 2000; Tashakkori & Teddlie,

2003, 2010; Johnson & Onwugbuzie 2004). The research design is schematically presented below:

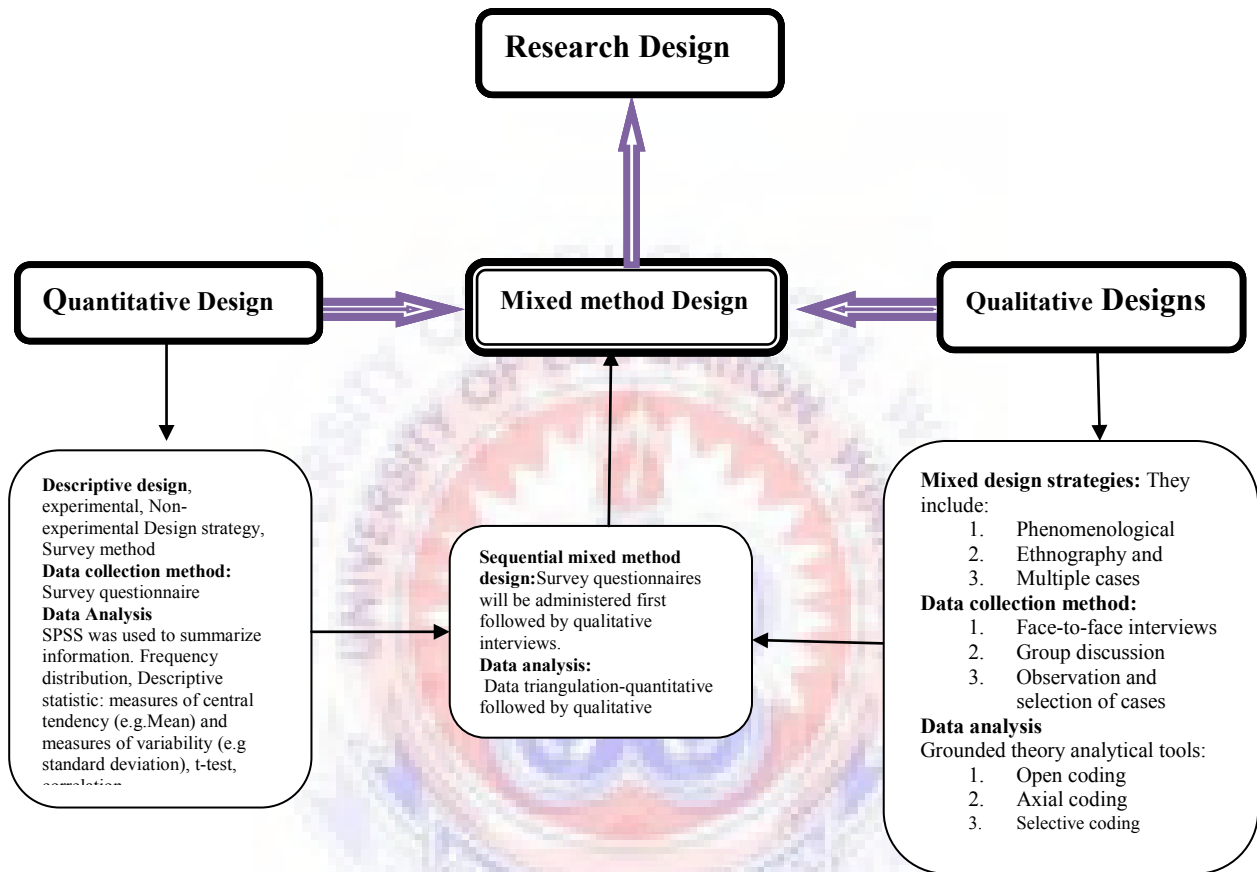


Figure 3: Sequential explanatory mixed method design (adapted from Kuyini, 2013)

Figure 3, the research design, guided the entire research process. The research design provided a framework for all research plans and activities that were performed during the conduct of research. The research design (Figure 3) shows an amalgamation of quantitative and qualitative research designs to obtain the type of mixed method designs (sequential explanatory mixed method design) employed in the study. Sequential explanatory mixed method design, as described in the section 3.1.3.1, is conducted in phases. Quantitative phase of the research is

conducted first before qualitative phase of the study. In it, descriptive design strategy of the quantitative research design and phenomenological research design of the qualitative research design strategies were used to study HIV/AIDS knowledge and sexual behaviour of adolescent with hearing impairment. Further, the design shows that the research was conducted in two phases: quantitative phase and qualitative phase of the study.

Phase one (quantitative phase): the research design shows that although there are many quantitative research designs (e.g. descriptive, experimental, quasi experimental and non-experimental designs), descriptive design and its associated instrument, sampling design and data collection methods analytic strategies were used in the quantitative phase of the study. To do this, survey method and questionnaire of the descriptive design were used to gather data from 310 adolescent with HI for the quantities phase of the study. Data analytic strategies utilized included frequency, means, standard deviation, independence t-test and analysis of variance (Figure 3).

Phase two (qualitative phase): From the research design (Figure 3), it is illustrated that while qualitative design has several design strategies (e.g. ethnographic, phenomenological, grounded theory and multiple case designs), phenomenological design strategy and its appropriate instrument, data collection and analytic tools were employed to collect data and describe the meaning and lived experiences of HIV/AIDS knowledge and sexual behaviour of adolescent with HI. Furthermore, the design indicates that face-to-face interview, semi-structured and group interview were used in the study. The 3 coding methods of grounded theory and interpretive phenomenological analysis were used to analyses data from qualitative phase of the study.

Phase three (data analysis and presentation): In analyzing data sequentially (data from quantitative and qualitative orientation), Figure 3 shows that quantitative data were collected first, analyzed and reflected upon before qualitative data were collected and analyzed. Again, in presenting data sequentially, data from qualitative orientation were presented first, while qualitative data followed to provide more explanation to the quantitative data.

3.2 Sampling design

3.2.1 Population of interest

The population of interest in this study is students with hearing impairments in the special schools in Ghana. The special schools may include schools for the deaf, schools for the blind and schools for students with mental retardation and any other school where students with hearing impairment can be found. In Ghana, the special school system is still categorized into the major disability types- School for the blind, deaf, mental retardation and physical disabilities. Because of the inclusive education system, however, it is possible to find children with the major disability types in the mains stream schools. So, it is in the interest of the researcher to reach out to students.

In principle, it is mandatory for all Ghanaian children, irrespective of their ability or disability, to have access to quality basic education. The basic education system is derived from the education Act of 2008 (Act 778), which made basic education compulsory for all children. The basic education is the minimum period of schooling needed to ensure that children acquire basic literacy, numeracy, problem solving skills and creativity and healthy living skills. It is made up of 11 years of basic education: 2 years for kindergarten, 6 years primary, and 3 years junior high

(Ministry of Education, 2010). Overall, the students spend 11 years in Basic schools and three years in secondary schools. Students with disabilities including those with hearing impairment are not left out in this endeavor.

The educational needs of students with hearing impairments are cared for in special and inclusive schools located in all ten regions of Ghana: Northern, Upper East, Upper West, Brong Ahafo, Ashanti, Eastern, western, Volta, Central and Greater Accra. Currently, there are 15 special schools and units for students with hearing impairments at the basic level. The population at the time of study was (794 [58.3%] boys and 566 [41.6%] girls) (see Table 3.1). The ages of the student were between 22 and 24 years, they were mostly found at the JHS level of education for the deaf.

Table 1: Sampling frame

S/N	Name Of School	Region	Boys	Girls	Total
1	Ashanti School For The Deaf (Jamasi)	Ashanti	83	70	153
2	Bechem School For The Deaf. (Bechem)	Brong Ahafo	25	30	55
3	Cape Coast School For The Deaf	Central	70	43	113
4	Ggbeogo School For The Deaf (Ggbego)	Upper East	61	42	103
5	Kibi School For The Deaf (Kyebi)	Eastern	55	40	95
6	Savelugu School For The Deaf (Savalugu)	Northern	45	32	77
7	Sekondi School For The Deaf (Nchaban)	Western	59	33	92
8	Volta school for the Deaf (Hohoe)	Volta	44	19	63
9	Salvation Army School For The Deaf	Central	22	17	39
10	Koforidua School For The Deaf (Koforidua)	Eastern	73	49	122
11	Demonstration school for the Deaf.	Eastern	24	36	60
12	Wa school for the Deaf (Wa)	Upper West	71	52	123
13	University practice (Unit) (Winneba)	Central	21	14	35
14	Agona Swedru school for the deaf	Central	49	28	77
15	AdjieKojoo school for the deaf	Greater Accra	92	61	153
			794	566	1,360

Source: Mid-Year review meeting of conference of heads of special schools (COHASS) (2015)

Table 3.1 illustrates the distribution of students according to basic schools for the deaf in Ghana. These schools altogether have a student population of one thousand three hundred and sixty (1360) students with hearing impairment in Ghana.

3.2.2 Sample size

Bartlet, Kotrlik & Higgins (2001) advised strongly that good research work must have appropriate and in excess sample size. Inappropriate sample size can lead to sample bias. To avoid sample bias in the study, Calderon and Gonzales (2010) sample size determination formula was used:

$$n = \frac{N}{1 + N(e)^2} \quad \text{Where:}$$

n = the size of the sample
 N = the size of the population
 e = the margin of error

$$n = \frac{1360}{1 + 1360(0.05)^2}$$

$$n = \frac{1360}{1 + 1360(0.05)^2}$$

$$n = \frac{1360}{1 + 1360(0.0025)}$$

$$n = \frac{1360}{1 + 3.4}, \text{ thus, } n = \frac{1360}{4.4} = 309.09$$

Approximately, n=310

Also, to avoid respondents' attrition and mortality rate (failure to complete and return questionnaire), the actual sample size (n_a) needs to be calculated. This is done using this formula:

$$n_a = \frac{n}{err}$$

n_a = actual sample size

n = sample size

err = expected response rate

Therefore, $n_a = \frac{310}{0.836} = 370.8$ i.e. 371

Based on the above calculation of the sample size, 371 sample questionnaires were sent to the field and administered to the participants.

3.2.3 Quantitative sampling technique

In order to have less risk of bias, and to be able to manage large and widely dispersed population of students with hearing impairment in the country, multi-stage sampling technique of probability sampling methods was used. Multi-stage sampling technique was used to select the sampled respondents based on the sample frame (Table 3.1). To do this, the following steps were taken into account:

- a. All children with hearing disabilities in each of the fifteen (15) schools for the deaf in the country were considered (Table 3.1).
- b. All schools for the deaf were grouped into regions (ten regions).
- c. Four regions (Brong Ahafo, Northern, Upper East and Upper West Regions) were randomly selected.

- d. Thereafter, all schools for the deaf in the four regions were considered.
- e. Finally, all students with impairments in the four regions were randomly selected. According to their characteristics. In order to take care of the sample characteristics, sample proportion (%) formula $=\frac{n}{N}\%$ was applied. Where n = Actual sample size and N = population (Cooper & Shindler, 2002).

3.2.4 Qualitative sampling design

Sampling is an essential step in qualitative research (Onwuegbuzie & Leech, 2007). For this reason, special attention was paid to determination of sample size and qualitative sampling technique(s) used in selecting research participants. Since the goal of the qualitative phase of the study was not aimed at making external statistical generalizations about adolescents with HI, nested sampling design (Onwuegbuzie & Leech, 2007) made up of convenient and purposive sampling techniques were used to achieve the aim of the qualitative phase of the study. According to Onwuegbuzie and Leech (2007) nested sampling design occurs where a researcher uses:

... two or more members of the same subgroup, wherein one or more members of the subgroup represent a sub-sample of the full sample. The goal of this sub-sampling is to obtain a sub-sample of cases from which further data can be extracted.

Reasons underpinning the use of such sampling technique were to obtain significant insights into HIV/AIDS knowledge and sexual behaviour of adolescent with HI and the local knowledge, processes and practices that exist within adolescents with HI sexual context and their lived experiences with respect to meaning they attach to their sexual lives (Onwuegbuzie & Leech, 2007; Kuyini, 2013). The nested sampling design is presented schematically in Figure 4 below:

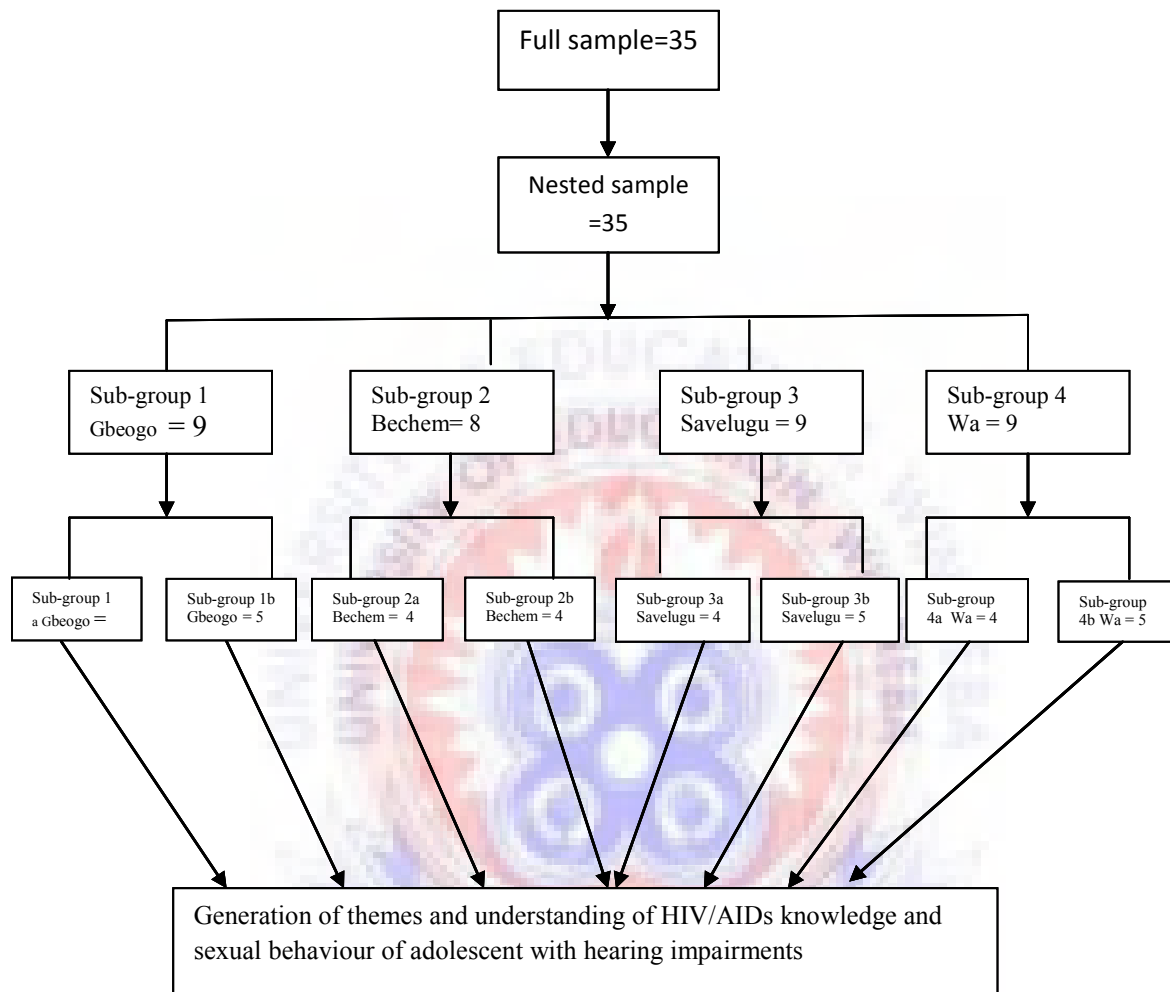


Figure 4: Qualitative sampling design

From Figure 4, it can be observed that 35 research participants were selected from four special schools for the deaf (Gbeogo, Bechem, Savelugu and Wa schools for the deaf). The sample size was determined on the availability of data and on the basis of theoretical saturation (the point in data collection when new data no longer bring additional insights to the research questions). Some qualitative researchers argue that a minimum of 12 and maximum of 20 research

participants are adequate for any qualitative inquiry (Baum as cited Onwuegbuzie and Leech, 2007). However, others researchers maintained that above 20 participants is much better for reasons of achieving maximum variation (Onwuegbuzie & Collins, 2007). For the reasons discussed above, nested sampling design, comprising convenient and purposive sampling strategies, were used. First, convenient sampling scheme/method was used to select research participants for group interviews, whereas purposive sampling method was used to select key or elite informants.

Again, Figure 4 also shows that the nested sample comprised of 4 sub-group (sub-group 1, Gbeogo=9; sub-group 2, Bechem = 8; sub-group 3, Savelugu = 9, and sub-group 4, Wa = 9). Each of these sub-groups 1, 2, 3 and 4 were further grouped into 8 groups, where the purposive sampling technique was used to select key informants for in-depth investigation of HIV/AIDs knowledge and sexual behaviours of adolescent with HI.

The central thrust behind using nested sampling design was to select elite or key informants (16 participants selected purposively) from the overall research participants (35 participants selected conveniently) in order to extract a significant data to attain data saturation, theoretical saturation, and/or informational redundancy. Also, data gathered from the elite informants were used to generalize for the non-key informants sample members. That is, data from the key informants are used for internal statistical generalization (Onwuegbuzie & Leech, 2007, p.247).

3.2.4.1 Continent sampling strategy

As stated earlier, the selection of the qualitative research participants was done conveniently. The researchers thoroughly discussed research purpose and objectives with the research participants during a debriefing session. This was done in all the 4 selected schools. After the briefing in each of the case, 12, 13, 15 and 16 adolescents with HI from Gbeogo, Bechem, Savelugu and Wa respectively showed interest to take part in the research. Overall, more than 35 adolescent with HI showed interest to participate in the study. However, only 35 of them were selected based on inclusion and exclusion criteria discussed in section 3.5.4 of this chapter. Nine (9) of them came from Gbeogo, Savelugu and Wa, while 8 came from Bechem. In the end, these groupings were used during group interviews.

3.2.4.2 Purposive sampling strategy

For the purposive sampling strategy, 16 adolescents with HI were selected purposively (from the convenient sample = 35) to take part in the qualitative phase of the study. Purposive sampling technique is used in research studies when researchers intend to engage in a sequence of strategic choices concerning the nature of the data, from whom, where, how and what data to extract from research participants (Onwuegbuzie & Leech, 2007; Cohen et al., 2000). One chief reason for using purposive sampling technique was to select elite or key informants who had in-depth knowledge of the subject matter and willing to share their multiple experiences with the researcher.

Like the convenient sampling technique, key informants were first identified during group interviews and recruited thereafter. The key informants were contacted for further detail

discussion about the research. Through discussion of research aim and the content of the consent forms, key informants were subsequently selected. Also, key informants were given two to three days to indicate, via personal contact or mobile text, their agreement or disagreement to participate in the study. Those willing to participate in the study contacted the researcher personally. Finally, agreements on actual dates, time, and locations of the interviews were made. In addition to these processes, all participants were again carefully selected using the eligibility criteria discussed in section 3.5.4.

3.2.5 Eligibility criteria

The eligibility criteria includes both inclusion and exclusion criteria.

3.2.5.1 Inclusion criteria

To recruit potential research participants inclusion and exclusion criteria were developed. For inclusion, participant had to meet the following inclusion criteria:

- a) Only adolescents with hearing impairment were to participate in the study.
- b) Participant must come from one of the sampled schools Gbeogo, Bechem, savelugo and Wa special schools for the deaf.
- c) Only adolescent between 12 and 26 years of age were to be included in the study.
- d) Participants should be able to sign or write as a mean of communication.
- e) Participants should be willing to participate in the study.
- f) They must have some sort of relationship with the opposite sex partner (a friend, boy/girl friend, sexual partner)

- g) They should be open and ready to spend several hours with the researcher

3.2.5.2 Exclusion criteria

On the exclusion criteria, the following criteria were used:

- a) Participant's age must fall between 12 and 26.
- b) Apart from hearing impairments, participant must not have other major disability e.g. blind and mental retardation.
- c) Adolescents who came from mainstream schools were excluded.
- d) Participants with hearing impairment from tertiary schools were excluded.

3.3 Development of Instruments

Two types of instrument were developed to gather information for the study: questionnaire instrument and interview -guide.

3.3.1 Questionnaire instrument

Research instrument (questionnaire) was developed to help solicit information to achieve the objective of the study. The research instrument is made up of four (4) sections (section 1, 2, 3 and 4). Two different scales were employed in gathering the data: Sexual Behavior Rating scale (SBR Scale), HIV and AIDS Knowledge scale (HAK Scale). All the scales were developed and identified using extensive literature review on HIV/AIDs etc and during focus group discussions with experts in the field. All the scales were constructed specifically for this study. Guidelines, rules and recommendation for constructions of scales and questionnaire designs were strictly

followed (Rebecca, 2005; Punch, 2004; Cohen et al., 2000; Nairne, 2000; Malhotra, 1996; and Zikmund, 1994). Major decisions, especially regarding what should be asked; how questions should be phrased; in what sequence should questions be arranged; and what questions/statements layout will best serve the research objectives, were all considered to ensure questionnaire/statement relevancy and accuracy.

Furthermore, several measurement strategies were considered to assess the quality of the instrument. For example, using SPSS, reliability test was performed on all the scales to determine the internal consistency of the scales. The aim was to find out if the scales were reliable and could yield consistent result. The output of the SPSS result indicated that the SBR Scale and HAK Scale had .812 (12 items) and .822 (14 items) Cronbach Alpha Co-efficient values respectively, which represent slightly good reliability (Rebecca, 2008). Factor analysis was also conducted to assess the correlations of variables within “factors” and for easy interpretations of the factor according to the meaning of the variables. The reliability test and factor analysis of the scales used are discussed in section 3.4.3 of this chapter. The survey instrument consists of the following:

3.3.1.1 Background information

Section one of the research instrument was made up of twelve (12) demographic questions. The questions included relevant variables such as participants’ age, level of education, gender, sexual partner etc. The questions in sections one were aimed at eliciting relevant data to achieve research objective four (to find out whether or not adolescent students with hearing impairments’

knowledge of HIV/AIDS, attitude and sexual behavior/practices will differ significantly due to their background variables).

3.3.1.2 Sexual Behavior Rating scale (SBR Scale)

Section two of the research questionnaire constituted individual statements about participants' sexual behavior or practices (*SBR Scale*). The SBR Scale, made up of 12-items, was constructed specifically to achieve research objective three (3). To do this, twenty four (24) sexual behaviors/practices items were identified through extensive literature review. The SBR scale presented series of personal statements from which participants were made to choose one response to register their level of agreement or disagreement. For example:

Sexual Behaviors	Always	Sometimes	Not At All
I have done HIV test in the past year	1	2	3
I have many sexual partners	1	2	3
I usually attend HIV/AIDS meetings, workshops, and seminars	1	2	3

The scale used a 3-point rating scale, where: “1” represented “*Always*”, “2” represented “*Sometimes*” and “3” represented “*Not at all*”.

3.3.1. 3 HIV and AIDS Knowledge Scale (HAK Scale)

Section three of the research questionnaire (*HAK Scale*) was aimed to capture data to accomplish the objective of the research question two (To find out the level of HIV/AIDS knowledge of adolescent with hearing impairment in Basic schools). The *HAK Scale* initially had 25 items,

made up of several personal statements, describing participants' knowledge of HIV and AIDS. Participants were asked to indicate their level of agreement or disagreement on a 5 point Likert scale, where: "1" was interpreted as "Strongly Agree", "2" represented "Somewhat Agree", "3" meant "Neither agree or Disagree", "4" meant "Somewhat Disagree" and "5" represented "Strongly Disagree". After the pilot test and the confirmatory reliability test, the items reduced to 14, indicating good item reduction. An example of the items in the *HAK Scale* is presented below:

Items/statements	Strongly Disagree	Disagree	Neutra l	Agree	Strongl y Agree
Homosexuals are responsible for spreading HIV and AIDS	1	2	3	4	5
People can acquire HIV and AIDS from being bewitched	1	2	3	4	5
A person can have the virus that causes AIDS but not have the symptoms	1	2	3	4	5

The scale reads from 1 to 5, where: 1,2,3,4 and 5 represents "strongly agree; somewhat agree; Neither agree or disagree; somewhat disagree; and strongly disagree" respectively.

3.3.2 Qualitative data collection instrument

Qualitative instrument for soliciting information for research purposes is the interview-guide. It makes the extraction of detailed information from students with hearing impairment very easy. The interview-guide is made up of five main broad topics:

- a) Background information of students with hearing impairment (gender, level of education, partner etc).
- b) Characteristics of students with hearing impairment.
- c) Students' knowledge of HIV/AIDs.
- d) Students' sexual behavior/ practices.
- e) Prevention of HIV/AIDs
- f) Challenges/problems faced as persons with hearing impairment

Similar to the qualitative instrument, the interview-guide was developed via extensive literature review on HIV/AIDs, contraction and prevention of HIV/AIDs. Semi-structured interviews and naturalistic interviews are used to capture data for all the items in the interview-guide.

3.3.3 Validity and reliability of instruments

The validity and reliability of the instruments were assessed before and after the instruments were used to solicit information from the participants following both quantitative and qualitative validation and reliability procedures.

3.3.3.1 Validity of the quantities and instruments

After the two instruments were constructed, they were first, presented to my supervisors to assess the face, content and construct validity of the instruments. After a thorough review of the items, the supervisors recommended that deletion and addition of some items. For example, some items in behaviour scales which were original captured and titled attitude scales were recommended to be part of sexual behaviour scale (Appedix D4). They also recommended that the structure of the

instruments be adjusted in a way that could provoke participants' interest and facilitate reading. After their recommendations were effected, the instruments were then piloted in Savelugu School for the deaf. The central idea for piloting the study was to experience the research process in terms of time required for each item; familiarity of the terminologies used and required; and participants' understanding of the statements in the instruments. After assessing the returned questionnaires, some items had to be rephrased for easy understanding, while others had to be deleted completely based on participants' recommendation. The pilot study also paved the way for Cronbach Alpha reliability test and factor analysis to be performed on the instruments.

3.3.3.2 Reliability of quantitative instruments

The reliability and factor analysis were performed to assess the consistency and the number of factors found in the scales. The reliability was performed twice: during the pilot study and when the actual study was conducted. The second test was performed for confirmatory purposes. With the first reliability test (pilot study), the items in the sexual behavior scale (*SB scale*) were 10, and 5 items were deleted when the reliability test was performed. The result of the internal consistency (Cronbach alpha) of *SB scale* was found to be .78, indicating a good data reduction (Warner, 2008). In addition to the reliability test, we conducted factor analysis to assess how the individual items were correlated with other items. The result of the factor analysis (appendix,) found to have two factors. The first variable in Factor one (1) has a highest loading of .88, the second variable has .77, the third variable has .68 while the fourth variable has .64. The second factor has two variables with a loading of .87 and .62 respectively, suggesting that all the variables could be considered in the study since all the variables in the factors have salient loading above 0.44. Factors were defined based on the factor loading. Thus, a variable was

considered salient if its loading a factor was above 0.44. According to Comrey (1973), a variable is considered salient in determining a factor when the variable loadings are above 0.44 (Acton and Miller, 2009).

Considering the number of variables in the *SB scale* (5 items), however, it was considered prudent to increase the variables for reasons of content and construct validity. So, different set of variables (19) were identified and included in the final study, making it 24 variables. Reliability test and confirmatory factor analysis were again performed and half (12) of the items (24 items) in the SB Scale were again deleted, indicating good data reduction (Warner, 2008). Finally, the result of the reliability indicated Cronbach Alpha of .812 accounting for 12 items.

Table 2: Sexual behaviour scale (SB Scale)

	Component		
	1	2	3
1. when I test for HIV/AIDS my results will be known to my colleagues	.855		
2. I usually attend HIV/AIDS meetings, work	.720		
3. I believe western medicine has a cure for AIDS	.614		
4. I believe traditional medicine has a cure for AIDS	.566		
5. I like attending HIV/AIDS meetings, workshops and seminars	.536		
6. having sex with a virgin can cure you of AIDS	.443		
7. I avoid risky sexual partners		.758	
8. I can have many sexual partners once i use a condoms		.688	
9. If I do HIV test, people will discriminate me if they found that I am HIV positive		.576	
10. using a condom shows my partner that i care about him/her			.809
11. my partner and I will not use a condom once we agree not to have sex with anyone			.607
12. I can use the same toilet facility with the HIV positive people			.535

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Similarly, a confirmatory factor analysis (Table 1) was performed on the SB Scale. The result showed three (3) factors with eigenvalues greater than 1.0, accounting for 50.449% of the total variance in scores (Appendix). Also, it can be noted that pattern matrix provides coefficients and describes the unique relationship between each item and each factor (controlling for the other factors). After extraction (Principal Component Analysis) and Rotation (Oblimin with Kaiser Normalization) methods were used, three (3) factors were extracted. Six (6) items hanged together on the first factor, whereas three (3) other items also hanged together on the second and third factors respectively. All of these coefficients were above the .30 level, suggesting a “salient” loading (Warner, 2008; Acton and Miller, 2009). The first variable in Factor one (1) has a highest loading of .855, the second variable has .720, the third variable has .614 while the forth, firth and six variable have .566, .536 and .443 respectively. The second factor has two variables with a loading of .87 and .62 respectively. This suggests that all the variables can be considered in the study since all of the variables in the factors have salient loading above 0.44.

A similar kind of approach was used to assess the reliability of the HIV/AIDS knowledge scale (HAK Scale). First, data from the pilot study were used to test the reliability and the factors found in the HAK Scale. The result of the test showed a Cronbach Alpha Co-efficient of .94 for 20 items and five (5) factors with eigenvalues greater than 1.0 (Table 2), accounted for 74.990 (75%) factor loading (Appendix). To confirm the reliability and the factors within the HAK Scale, another test was performed after the main study was conducted. The items in the HAK Scale were further reduced to 14 items, with Cronbach Coefficient Alpha of .822 (Appendix), suggesting that the scale was good.

Table 3: HIV/AIDs knowledge scale

	Component		
	1	2	3
1. Blood transfusion is unsafe because of the risk of contracting HIV	.837		
2. Showering and washing your genitals after sex can reduce the chances of being	.727		
3. Coughing and sneezing do not spread HIV	.469		
4. Withdrawal prevents a woman from contracting HIV during sex	.468		
5. All infected pregnant women will have their babies born HIV positive	.443		
6. HIV cannot be contracted through anal sex	.436		
7. A man can get HIV having anal sex with a man	.367		
8. A person can become infected with HIV during one sexual contact		.794	
9. Unprotected sex with several people makes a person susceptible to contracting HIV		.672	
10. HIV can be transmitted through saliva of a person who is HIV positive			.784
11. People can acquire HIV and AIDS from being bewitched			.716
12. A person can get HIV by sharing a towel or cup with someone who has HIV			.611
13. People who are HIV positive cannot transmit the virus until they have AIDS			.450
14. Sharing a glass of water with someone with HIV can transmit the disease			.391

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 15 iterations.

With respect to the confirmatory factor analysis of the HAK Scale (Table 2), the test revealed three (3) factors with eigenvalues greater than 1.0 (Table 2), accounted for 45.901% factor loading (Appendix). Factor one (1), two (2) and three (3) having seven (7), two (2) and five (5) items respectively. Further, the results indicate an evidence of a good fit of a three-factor solution to the data. Apart from item 7 in factor 1 and item 14 in factor 3, all the items were considered salient since their factor loadings were above 0.44. Also all factors correlated positively. It further suggests that the three scales based on the 14 items could be created. The scores of these scales could be included in later analyses, if so desired. The above discussions suggest that the instruments are reliable.

3.3.3.2 Establishing Validity and trustworthiness of qualitative instrument

According to Denzin and Lincoln (as cited in Onwuegbuzie & Leech, 2007) if qualitative research is to pass test of time, qualitative researchers must tackle crises of representation, legitimacy and praxis. The crises of representation, which refers to intricacy qualitative researchers faced to effectively extract lived experiences from the researched, puts doubts on the quality of qualitative research findings. The crisis legitimacy deals with issues of validity, generalizability and reliability of qualitative research, while praxis threatens qualitative researchers' capacity to extract meaning from their data (p. 238-239).

Therefore, in an attempt to deal with issues of validity and reliability in qualitative research, Guba proposed the following concepts: credibility; transferability; dependability and confirmability (Guba, 1981). Here, Guba's (1981) concepts of credibility; dependability; and confirmability were used to address issues of validity and reliability of the qualitative instruments.

3.3.3.2.1 Credibility

Credibility is one of major yardsticks used to measure internal validity of a qualitative instrument before using the instrument for qualitative (Shenton, 2004). To address this, the researcher made sure that the interview-guide used for the data collection was pilot-tested before using it for actual data collection. One of major goals of the pilot test was to ensure that the interview guide supported in gathering appropriate to achieve the objective of the study. Also, expertise of my supervisors and knowledgeable person in the field of disability and HIV/AIDs including

adolescent with hearing impairment was consulted. Inputs and recommendations were all affected before using the instrument in the field.

Secondly, appropriate data collection methods such as semi-structured and unstructured interview techniques; the three coding methods of grounded theory (open, axial and selective coding) were used in order to extract appropriate and quality data from the research participants. In analyzing the data, the researcher ensured that data from multiple sources spoke to each other and to the same research questions, thereby confirming the trustworthiness, credibility and dependability of the data.

Furthermore, the researcher had a prolonged engagement with adolescent with HI (about 11 months), which Lincoln and Guba's (1985) strongly recommend. This prolonged stay in the research field opened up multiple opportunities for trust building and establishment of cordial and lasting relationship with the research participants. By virtue of the good rapport with the research participants, I was allowed to collect reliable data through in-depth interview with the research participant, hence, meeting trustworthiness and credibility criteria.

3.3.3.2.2 Dependability

Although qualitative research is been criticized for its inability to use external statistical generalization procedures, qualitative researchers often argue that data gathered using mixed or multiple data collection strategies are dependable and therefore encourage qualitative research reporting procedures (Onwuegbuzie & Leech, 2007; Denzin & Lincoln, 2005). Accordingly, every attempt was made to report in detail all the required processes of development of

instrument, data collection procedures and the processes involved in the data analysis to ensure dependability of the data. For instance, the research design, sampling design and its implementation were clearly outlined to facilitate public verification, scrutiny and replicability.

3.3.3.2.3 Confirmability

The concept of confirmability deals with objectivity of data (Guba, 1981). The goal of confirmability was achieved by the application of multiple qualitative and quantitative data sources and strategies paving the way for triangulation. Also, the use of data from different sources helped reducing investigator effect.

Furthermore, confirmability of was ensured through debriefing and member checking (Lincoln & Guba, 1985). Key informants and group members were accorded the opportunity to cross-check the accuracy of information they provided during individual and group discussion. This was done by contacting key informants individually to read interview scripts immediate after the interview session. Where time did not allow for this activity, they were contacted later at their convenience to read the interview scripts. They were allowed to add any data they wanted to included or delete if otherwise. For instance, some of the key informants, after reading the interview scripts, recommended that some parts of the scripts be deleted, while others added data. Generally, the feedback from the participants on the accuracy of the identified categories and themes enhanced the trustworthiness, credibility and dependability, transformability and conformability of the data.

3.3.3.3 Rich and ‘thick descriptions’ of research findings

Also, in presenting qualitative research findings, attempts were made to ensure that participants’ own voices were heard to permit internal statistical generalizations and analytical generalizations (Onwuegbuzie & Leech, 2007). Also, participants’ voices, specific statements, experiences, context and their own narratives were worked with and woven into the finding. Thick and rich descriptions’ of the teachers’ stories were, therefore, used to establish the accuracy of the findings and to control some of the “backyard” research issues.

3.6.2.6 The role of the researcher

Multiple roles of the researcher: teacher, mother and researcher helped in so many ways to enhance the quality, dependability validity and reliability of the study. Hammersley and Atkinson (1996) noted that people social location or identities in a society plays important role in negotiating access to obtain valuable data.

First, my role as a researcher, indeed, required thorough research methodology training: theory of epistemology, research design, development of instrument, though interviewing and data analysis skills. All these skills were acquired through course work during M.Phil and PhD seminars. These skills supported tremendously during this journey. The skills served as a yard stick to sort valid and reliable data. It also helped the researcher to assess situations with respect of what to say, where and how to say throughout the fieldwork.

Secondly, my role as a special education teacher and a mother helped in building healthy social and motherly relationship between the researcher and the researched. My social position as a

teacher made it easy to negotiate access to research site and the key informants. Being a special education teacher made them believe that I was out for their own welfare without any evil motive. In this way, participants were very honest and provided valid and reliable data. Also, being a mother also helped in many ways. Some participants were much opened to discuss confidential issues with me because they put me in the shoes of their mothers. This facilitated access to the participants' lifeworld and for easy data mining.

Nevertheless, there were also possibilities my multiple roles could have prevented me from gaining valuable insights into the lived experiences of the adolescent with HI. For example, being a teacher could have also influenced research participants not to withhold information for fear of breach of professional conduct-confidentiality principle. To avoid this problem, the researcher had a debriefing session with all participants individually and in group sessions. Secondly, participants were provided with consent forms in which researchers' professional conduct was clearly spelt out. Nevertheless, the debriefing sessions and the consent forms encouraged some participants to take part in the research project. These things were clearly demonstrated during data collection.

3.4 Data collection procedures and strategies

3.4.1 Field entry/access

The data collection procedure started with a request for permission from heads of schools for the deaf. It took about three weeks to obtain permission from the heads of schools (Appendix). This paved the way for me to have access to the participants.

3.4.2 Access to participants

I certainly agree with Hamersley and Atkinson (1996) when they argued that, in research, access to space is totally different from access to information. Access to the participants had to be renegotiated. So, in all the schools the research was carried out, participants had to be informed. The heads of the school took me to all the classes (JHS 1, 2 and 3) to discuss with them my intention to conduct research on students' knowledge of HIV/AIDs and sexual behaviors. The topic seemed interesting to them where I mentioned the topic and discussed with them. Participants were informed of the research objective and that it was not compulsory. Many students volunteered after the discussion. To ensure that all participants understood the material, two teachers were assigned by the school head teacher to support in the administration of the questionnaire. They supported in signing for the students who had difficulties in understanding the questionnaire.

After the survey questionnaire were turned and analyzed, some of the students were met the criterion explain in section 3.4.2 were contacted individually for the qualitative interviews. They were again informed of the objectives, the psychological impact the study was likely to cause and the importance of their participation in the study. Those who agreed to participate in the qualitative phase of the study were given a written consent forms to sign. Those who returned their consent forms were then allowed to take part in the qualitative interview. In all, 35 students willingly participated in interviews and group discussion to generate data for the qualitative phase of the study.

3.4.3 Ethical consideration

Students' knowledge of HIV/AIDs and sexual behavior is a sensitive topic and requires, to some extent, an invasion into personal environment of the research participants. Therefore, the researcher has the professional responsibility to respect the rights and dignity of the research participants. Nairne (2000) argued that respecting the rights and dignity of the research participants mean that showing concern for the health, safety, welfare of the participants. Also, the researcher should ensure that no diabolical mind-altering treatment should be done to affect the participants permanently "in the name and pursuit of science" (p.61). For this reason, the issue of informed consent, debriefing and confidentiality were addressed.

3.4.3.1 Debriefing

Debriefing is one of the important ingredients in the conduct of research. It is intended to clear up any misunderstanding the research participants might have about the research. In the field, the research participants were duly informed the research. A full disclosure of the nature of the study, including general and specific objectives, physical and emotional risk associated with the study was explained to the participants before they participated in the study. This gave the researcher to counteract the anxiety the participants developed because of their participation in the research. Debriefing was organized in two sessions, individually and in group.

In each of the four schools, all participants who showed interest to take part in the study were debriefed accordingly in their various schools. For example, 9 participants from Gbeogo, Savelugu and Wa and 8 from Bechem special schools separately in their various school. In addition to the group debriefing session, key informants who were selected to participant in the

in-depth interviews were again debriefed individually. As mentioned earlier, the debriefing session tackled issues of confidentiality, ethical issues that might arise during data collection, respect for the rights of the research participants legality of withdrawing from the research project without any legal bindings etc.

3.4.3.2 Informed consent

Participants were appropriately informed about the importance of principle of informed consent. They were properly informed, in an easy-to-understand language, of the significant factors that could affect their willingness to participate in the study. They also understood that if they choose not to participate in the study, for whatever reason, they will suffer no negative consequences for withdrawal, or being forced to do so. In addition, written consents were obtained from participants' parents and school to allow the participants to take part in the study.

3.4.3.3 Confidentiality

Participants were assured of confidentiality. They were assured that the researcher will not report or discuss any confidential information obtained from them without their permission. Additionally, they were guaranteed that their names and any traces that could lead to the revelation of their identities would be made anonymous.

3.5 Data collection methods

Two major types of data collection methods were used to gather data for the study: survey questionnaire and interviews.

3.5.1 Questionnaire

Questionnaire method was used to solicit information using questionnaire instrument. Three hundred and seventy one (371) questionnaires were distributed to participants. The participants were selected across the three (3) year groups and presented with the questionnaire. The participants were required to complete the questionnaires accurately and as honestly as possible without any influence of others. All participants completed the questionnaire under the same conditions. The questionnaire administration took almost three months and participants completed and returned all the questionnaires. All participants were told not to identify themselves on the questionnaire, and they were reassured that their responses would remain anonymous. Out of 371 questionnaires, 339 were completed questionnaires were returned. Eighty nine (89) of the 339 questionnaires had missing items and incomplete questionnaires. All questionnaires with missing items were deleted leaving 310 to be included in the actual sample. Some of the important reasons for using survey questionnaire method were that its construct and distribution was very easy and inexpensive, and confidential information was also given freely.

3.5.1 Interviews

Face-to-face (individual) and group interviews were also used to extract quality information from the participants. Both group and individual interviews took the form of back and forth movement. The group interviews with the participants took place before the individual interviews were conducted. The main issues discussed in the group interviews were the participants' knowledge of HIV/AIDs and its prevention, their experiences of meeting people with HIV/AIDs etc. This type of discussions took place in all the schools before the individual interviews were conducted. This also cleared the way the researcher to select participants (15)

with deep knowledge and experiences of HIV/AIDSs to be included in the individual interviews. Each group discussion took about 1 to 1 hour 30 and ended with 'a treat'. With the individual interviews, participants chose the venue for the interview. All individual interviews started with the researcher reiterating all issues regarding debriefing, confidentiality, and consent forms.

The interview guide was used to guide the process of interviewing. It took about 1-2 hours for each participant. All the individual interviews also ended with some reassurances of the researcher's professional responsibility and a good treat the participants. There were many reasons for which individual and group interviewees were used. The researcher was able to observe the non-verbal reactions or behavior of the participants; the researcher and the participants could ask for further clarifications in case of misunderstanding of the questions; the method yielded detailed information about the subject matter study.

3.6 Data screening and analysis

American Psychological Association (APA) and other researchers recommended that real raw data should be thoroughly screened before any data analysis and any potential problems should be reported in research reports (APA, 2001; Warner, 2009; McClendon, 2004; Ciaran, Miller, Maltby, & Fullerton, 2009). This recommendation is based on the reality that real datasets often contain errors such as inconsistent responses, missing data, extreme outliers, within group sample size that are too small for the intended analysis and non-normal distribution shapes. For this reason, data screening was performed to allow for identification and detection of the stated problems as well as to aid in finding possible remedies for potential problems prior to actual data analysis. However, for any quantitative data screening, emphasis is often placed on the

following: identification of missing data, inconsistencies and errors, normality of sample distribution and identification and handling of outliers (Warner, 2009; McClendon, 2004). These issues were addressed in sections that follow.

3.6.1 Missing items, inconsistent responses and errors

Missing values, items and inconsistent responses were addressed by using appropriate sample size and actual sample size determination formulas (section 3.3.2 Sample size). Three hundred and seventy one (371) sample questionnaires were administered and 339 completed questionnaires were returned. All three hundred and thirty nine (339) questionnaires were thoroughly screened to remove all questionnaires with missing items, questionnaire with missing units and those containing inconsistent responses. After the exercise, 310 questionnaires were left to be included in the study.

Finally, all errors and omissions that occurred during computation of the collected data were cross-checked by proofreading and comparing the computed data with the original data on the questionnaire. Furthermore, simple exploratory analysis of the data was performed for additional detection and correction of errors.

3.6.2 Identification and handling of outlier

Warner (2009) advised that researchers who use self-reported data should be aware of common problems with this type of data. Participants may distort their answers because of social desirability bias; they may misunderstand questions; they may not remember the events they have been asked to report about; they may deliberately try to fake good or bad; and they may

even make random answers without reading the questions. Such cases could lead to data having extreme values or outliers. Miller, et al. (2009) defined outliers as "...values that lie between 1.5 and 3 box length from the upper or lower quartiles" (p.72), while Warner (2009) defined it as "an extreme score on either the lower or upper end of frequency distribution of a quantitative variable" (p.152). They are usually "designated in SPSS by an asterisk (*)" (p.72).

There are different decision rules regarding when to consider an extreme value as an outlier. For instance, descriptive statistic from explore procedure (Appendix C-D); stem and leaf plot explore procedure (Appendix A: Figure, 2 and 3); and scattergram/ scatterplot procedure. In this study, the stated procedures were used were performed on age distribution; gender distribution; HIV/AIDs Knowledge distribution as well as risky Sexual behavior distribution to ensure that real datasets were free from extreme values. For instance, the boxplot for participants' age by gender (Figure 2) indicated there were no extreme values in the real datasets.

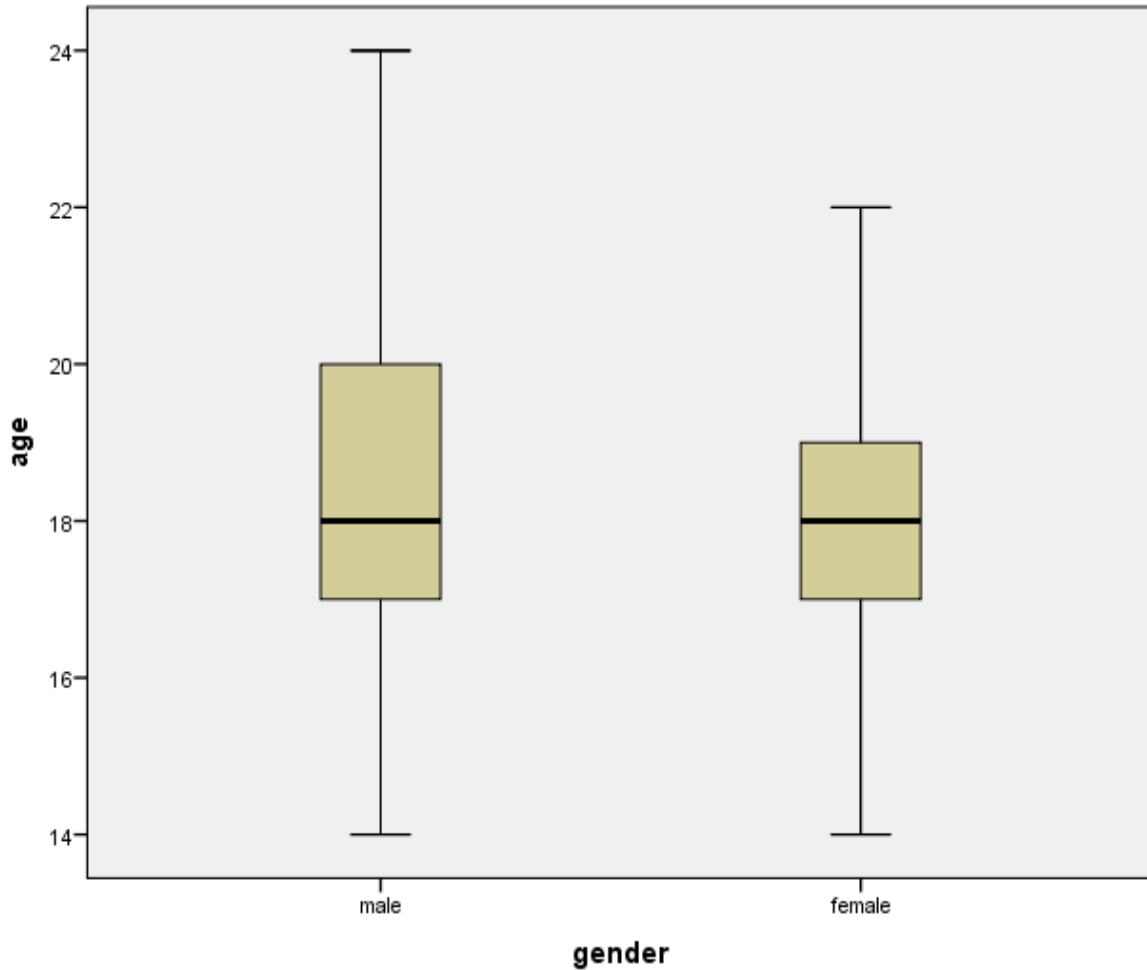


Figure 5: Boxplot from explore procedure

Figure 5 shows boxplots for age by gender. As a rule thumb, the top shaded part of the box represents the upper quartile (75th percentile) while the bottom shaded part of the box represent lower quartile (25th percentile) for each distribution, suggesting that 50 percent of the cases lie within this range. From the graph, it is also clear that the median values both male and female were 18.

The outer lines of the boxplot represent the maximum and minimum values in the groups. Any outer line (variable) above the minimum and maximum values is considered as an outlier. In this case, there was no variable above the minimum and maximum values. Therefore, no variable in

the age variable is qualified as ‘outliers’ or ‘extreme values’. Therefore, the overall conclusion to be drawn from Figure 2 is that the boxplots for male and female were remarkably similar, reflecting similar age distribution for male and female respondents. All other variables such as level of education, HIV/AIDs knowledge and risky sexual behavior variables were examined thoroughly prior to final analysis.

3.6.3 Normality of sample distribution

In addition to data screening, normality of age, HIV/AIDs Knowledge and Risky sexual behavior distribution shapes were also assessed visually (Appendix A1). In fact, the importance of normal distribution of datasets cannot be over emphasized. Warner (2009) distinguished two types of distributions: empirical and theoretical distribution. The former, empirical distribution was judged more relevant to this study than the later. Warner (2009) claimed “an empirical distribution is based on the scores from a sample, while theoretical distribution is defined by a mathematical function or equation” (Warner, 2009, p.10). The former was preferred because its results could be presented in tabular form (frequencies) or graphically such as histogram. For example, Figure 1, 5 and 6 (Appendix A 1) show histograms of age, HIV/AID knowledge, and Risky sexual behavior distributions with a superimposed normal curve. Those variables were examined to determine whether or not they were approximately “bell shaped” and symmetric. McClendon (2004) stated this fact clearly when she said:

A normal distribution is a bell-shaped symmetrical distribution with a kurtosis value of 0. In a normal distribution about two-third of the value are within plus or minus 1 standard deviation of the mean, and 95 percent of the values are within plus or minus 1.96 standard deviation of the mean (p.157).

Although a visual assessment of the histogram in Figure 1, 5 and 6 (Appendix A 1) revealed that the distributions shapes were not exactly normal (slightly asymmetrical), they were similar enough to permit the use of parametric statistic such as means and correlations (McClendon, 2004; Warner, 2009).

Warner (2009) argued that "...when scores are approximately normally distributed, about 99% of the scores should fall within +3 and -3 standard deviations of the sample mean" (p.152). The mean age, HIV/AIDs knowledge, and Risky sexual behavior were 18.15 (SD: 2.013); 38.89 (SD: 14.581); and 33.63 (SD: 12.186) (Appendix A 1: Table 1; 23; and 4), respectively. Also, the skewness values for age, HIV/AIDs knowledge, and Risky sexual behavior were: .304 (Kurtosis:-.337); .2.66 (Kurtosis:-.550); and .115 (Kurtosis:-1.072), respectively. Since none of the skewness values was negative, it means that low values were able to match with the high values. Also, the values of Kurtosis were all negatives, suggesting that the shapes tend towards being more flat than a classical normal distribution, and this is generally regarded as acceptable, since the absolute values of the age, HIV/AIDs knowledge, and Risky sexual behavior distributions were below two.

3.6.4 Meeting statistical assumptions

Like data cleaning, it is recommended that statistical assumptions must be met before the results of any significance tests (parametric and nonparametric) could be considered valid (Warner, 2009; Miller, et al. (2009). Generally, significance tests are grouped into parametric and nonparametric. In this study, two types of parametric tests, *t*-test and Analysis of Variance (ANOVA), were used.

In employing independent *t*-test and ANOVA (parametric tests), four important assumptions or conditions are required to be fulfilled:

1. “The Observations must be independent.
2. The observation should be drawn from normally distributed population.
3. These populations should have equal variances.
4. The measurement scale should be at least interval so that arithmetic operations can be used with them” (Cooper & Schindler, 2003, p.531).

All these were checked using the study design and SPSS software. The first two assumptions were taken care of by the study design and methods, where randomization took a center stage in all the process of sample selection and the estimation of sample size. For the last two assumptions, the SPSS software was used to meet the requirement. For instance, Levene’s test of equality of variance was to check assumption four before and during the analysis.

3.6.5 Analysis of quantitative and qualitative data

All quantitative and qualitative research questions/objective were analysed using quantitative and qualitative data analysis procedure.

3.6.5.1 Quantitative data analysis

After data were screened to get rid of outliers, inconsistent responses and missing items, SPSS version 17.0 for Windows was used to produce frequency distribution tables on the bibliographical data and descriptive statistic (means and standard deviations) on HIV/AIDs

Knowledge and Risky sexual behavior sales. Confirmatory statistical tests were performed to test significant differences and relationship using t-test and analysis of variance (ANOVA) and person correlations, respectively. A significance level of $p < .05$ was adopted as the criterion in all *t*-tests, while a significance level of $p < .01$ was adopted for correlation coefficients. The following steps or analytic strategies were used in analyzing the data:

1. Descriptive statistic was used to analyze research questions 1 (What level of knowledge do students with hearing impairment have about HIV/AIDS?) and question 2 (Which sexual behaviors are prevalent among adolescent students with hearing impairment?).
2. Research question 4 (Are there any relationships between students' knowledge of HIV/AIDS and their sexual behavior/practices, age and level of education?) was also analyzed using correlation.
3. T-test and ANOVA were also employed for the analysis of research question 5 (Do students with hearing impairments' knowledge of HIV/AIDS and their sexual behavior differ significantly due to their gender?).

3.6.5.2 Qualitative data analysis

There are many analytical strategies and procedures in qualitative research. They include: interpretive phenomenological analysis strategy (IPA), content analysis (CA), and grounded theory analysis (GTA) procedures among other. In this study, GTA and IPA procedures were used because the objectives of the study required the extraction of lived experiences and theory generation. In this case, the GTA and IPA procedure were best used. The two analytic procedures both have set of systematic and transparent procedures for data analysis. The

procedures comprised of state 1, 2, and 3. In Table 4: categories and sub categories generated from the qualitative data analysis are presented:

Table 4: Qualitative data categories

Research question	Main categories	Sub-Categories
Subquestion 1: How do adolescent with HI construe HIV/AIDs infection?	1) of students' Views of HIV/AIDs infection	1) HIV/AIDs is real 2) Going 'raw and losing guard' 3) HIV/AIDs is the work of witches 4) Sharing food, cloth and sneezing 5) Sharp objects
Question 2: And how do they guard themselves against HIV/AIDs infection?	1) Phenomenological experience of partners' sexual activities	1) Unprotected sexual intercourse 2) Sex with multiple partners 3) Embarrassment in purchasing and using contraceptives 4) Condom use as a sign of infidelity 5) Condom insertion error and Reduction of sexual pleasure
Subquestion 3: What phenomenological experiences do adolescents with hearing impairments have about their partners' sexual activities (e.g. their use condom of during sex)?	1) Protective mechanisms against HIV/AIDs	1) Having total abstinence from sex or sex with only virgins 2) Washing genitals after sex 3) Avoidance of high-risk sexual activities/relationship 4) Persuading sexual partners to use condom 5) The use of traditional medicine 6) Engaging in reduced frequency of sexual intercourse with strangers
Question 4: Are there relationships between adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour, age and level of education?	1) Gender Differences in HIV/AIDs Knowledge	1) Source of information on HIV/AIDs
Question 5: Do adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behavior differ significantly due to their gender?	1) Gender differences in students' sexual behaviors	1) Boys engaging in more risky sexual behaviours

Phase one: open coding system

Analysis of data began with open coding system. This phase of data analysis dealt with the breakdown of data into smaller parts. That is, all data obtained from qualitative research questions were examined closely for categories. For example, data obtained from sub question 1, and question 3, sub questions 4 and 5 of the qualitative phase of the study were closely examined. From the above table, 1 main category was generated from all the sub and main questions. However, 6 sub categories were also obtained from data for sub question 3, while 1 sub question obtained 5 sub categories were generated from data obtained for sub question 1, and 3 research questions 4 and 5.

To obtain the categories, interview scripts were examined closely, comparing and categorizing them (Strauss & Corbin, 1990) while following the following guide lines strictly:

- a) Interviewees' responses were compared, grouped and labelled according to similar responses.
- b) The labeled responses were again categorized the according to similar concepts and later grouped and labelled as subcategories
- c) Thereafter, categories were named according to what seem fit logically in each category, and
- d) Finally, categories are developed according to the research questions (De Vos, 2005).

Stage two: axial coding

The central issue in stage two was to find relationships and connecting the conceptual categories identified at stage one. The aim of this exercise was to bring together substantive codes or conceptual categories. That is, it was a way of rebuilding new relationships between categories and sub-categories. To do this, the following instructional guide was employed:

- a) First order-categories were branched from the open coding procedures for further categorization of the data.
- b) Then, the “First order-categories” were interconnected to produce a set of scheme.
- c) Selective coding was then applied to the scheme to produce the core categories. This stage paves the way for final stage of the data analysis.

Stage three: selective coding

Having negotiated well with first and second stages of the data analysis, selective coding processes were then applied. The generated categories and sub-categories were put together in a conceptually different ways. Selective coding was done by:

- a) Finding higher-level concepts or categories.
- b) Finding a central conceptual category at the second level of abstraction.
- c) Ensuring that the central conceptual category emerge from constant comparisons, which is driven from the earlier coding methods, and
- d) Ensuring that the categories are clear and elaborated in terms of properties and systematically to other categories of the data (Punch, 2005).

This method of qualitative data analysis is repeatedly applied to all data generated from the qualitative component of the study.

3.7 Summary

The main aim in this chapter was to provide vivid description of how data for the investigation were gathered. This was done by demonstrating the appropriateness and application of the research design (sequential explanatory mixed method design), sampling design (nested sampling design), instrumentation, and data collection tools (questionnaires and interviews). Validity and reliability for quantitative and qualitative were discussed. The chapter delineated the type qualitative and quantitative data analytical strategies used. In it, descriptive statistic, analysis of variance, and the grounded theory analysis procedures were applied to analyze quantitative and qualitative data respectively.

CHAPTER FOUR

RESEARCH RESULTS

4.0 Introduction

In this chapter, results and findings of the study are presented and interpreted according to the main research objectives and questions. The central objective of the study was investigate students' knowledge of HIV/AIDs, risky sexual behaviors and how they make good use their knowledge of HIV/AIDs to protect or reduce risk of HIV/AIDs virus infection. Therefore, this chapter presents data on the following research question:

1. What knowledge do adolescents with hearing impairments have about HIV/AIDs and how do they construe HIV/AIDs infection?
2. What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDs? And how do they guard themselves against HIV/AIDs infection?
3. What phenomenological experiences do adolescents with hearing impairments have about their partners' sexual activities (e.g. their use condom of during sex)?
4. Are there relationships between adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour/practices, age and level of education?
5. Do adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behavior differ significantly due to their gender?

Therefore, the results presented in this chapter starts with respondents' background data followed by data on research question one through research question four and ends with a chapter summary.

4.1 Background Data

In this section, background data of respondents are presented to provide a context for subsequent analysis and discussion. The background information presented includes respondents' age, gender, level of education, location and their experiences in relationship. The section begins with participants' age.

4. 1.1 Age of respondents

Table 5: Age of respondents (N=310)

	Frequency	Percent	Valid Percent
0 -14	5	1.6	1.6
Valid 15-20	261	84.2	84.2
21-25	44	14.2	14.2
Total	310	100.0	100.0

Source: Field data (2015)

The result in Table 5 indicates that majority of the research respondents were between ages of 15 and 20, accounting for 84.2% of sampled respondents. A little above fourteen percent (14.2%) of the respondents were between 21 and 25 years old, whereas only five (5) participants, representing 14.2% of the sampled participants were fourteen (14) years old.

4.1.2 Gender of respondents

Table 6: Gender of respondents (N=310)

	Frequency	Percent	Valid Percent
Valid Male	176	56.8	56.8
Valid Female	134	43.2	43.2
Total	310	100.0	100.0

Source: Field data (2015)

Result in Table 6 shows that male respondents (176) were the majority and represented 56.8% of the sampled respondents, while their female colleagues (134) were minority and represented 43.2% of the sampled respondents. This might indicate that male participants were more willing to discuss issues of HIVAID than their female counterparts.

4.1.3 Respondents' level of education

Table 7: Level of education

	Frequency	Percent	Valid Percent
Valid Basic 7	135	43.5	43.5
Valid Basic 8	126	40.6	40.6
Valid Basic 9	49	15.8	15.8
Total	310	100.0	100.0

Source: Field data (2015)

Table 7 illustrates that 43.5% (135) were in basic 7, whereas 40.6% (126) and 15.8% (49) respondents were in basic 8 and 9, respectively.

4.1.4 Location of Participants

Table 8: Location of respondents

	Frequency	Percent	Valid Percent
Northern region	62	20.0	20.0
Upper East region	106	34.2	34.2
Valid Upper West region	63	20.3	20.3
Brong Ahafo region	79	25.5	25.5
Total	310	100.0	100.0

Source: Field data (2015)

Table 8 shows that 34.2% (106) of the respondents came from the Upper East Region, 25.5% (79) were from the Brong Ahafo Region, 20.3% (63) and 20%(62) of the respondents came from Upper West and Northern regions of Ghana.

4.1.5 Relationships

Table 9: Relationship

	Frequency	Percent	Valid Percent
Valid Yes	154	49.7	49.7
No	156	50.3	50.3
Total	310	100.0	100.0

Source: Field data (2015)

Table 9 shows that 50.3% (156) of the respondents were in active relationships while 49.7 % (154) respondents were not in relationship.

4.1.6 Duration of relationship with current partner

Table 10: Duration of relationship

	Frequency	Percent	Valid Percent
Valid Weeks	80	25.8	25.8
Months	114	36.8	36.8
Years	116	37.4	37.4
Total	310	100.0	100.0

Source: Field data (2015)

Regarding the duration of the respondents' current relationship, Table 10 shows that 37.4% (116) of the participants have been in relationship for 11 years, whereas 25.8%(80) and 36.8 %(114) said they were in relationship for some weeks and months respectively.

4.1.7 Age of first sexual experience

Table 11: Age of fist sexual experience

Age of first sexual exp.	Frequency	Percent	Valid Percent
10-12	154	49.7	49.7
13-15	97	31.3	31.3
Valid 16-19	48	15.5	15.5
19 and above	11	3.5	3.5
Total	310	100.0	100.0

Source: Field data (2015)

Table 11 shows that 49.7% (154) of the sampled respondents had their first sexual experiences intercourse when they were between 10 and 12 years old. 31.3% (97) of the respondents were between 13 and 15 years old, 15.5% (48) aged between 16 and 18, whereas only 3.5% (11) were 19 years and above old. This result suggests that almost half of the respondent experienced their fourteenth birth day.

4.1.8 Sexual intercourse with other partner

Table 12: Sexual experience with other partners

	Frequency	Percent	Valid Percent
Yes	125	40.3	40.3
Valid No	185	59.7	59.7
Total	310	100.0	100.0

Source: Field data (2015)

Table 12 reports that 40.3% (125) respondents indicated that in addition to their regular sexual partner, they also had experiences of sexual intercourse with other people, whereas 185 (59.7%) indicated that they had no such sexual experiences with other partners.

4.1.10 Sexual experiences with different partners in a month

Table 13: Frequency of sexual with multiple partners in a month

	Frequency	Percent	Valid Percent
1	148	47.7	47.7
2	108	34.8	34.8
3	22	7.1	7.1
4	11	3.5	3.5
5	15	4.8	4.8
Valid 6	2	.6	.6
7	2	.6	.6
9	1	.3	.3
14	1	.3	.3
Total	310	100.0	100.0

Source: Field data (2015)

As Table 13 indicates, only.3% (1) of the respondents had sex with 14 partners in a month, 47.7% (148) limited themselves to only 1 partner, while 34.8% (108), 7.1% (22), 3.5%(11) and 4.8 (15) had sexual intercourses with 2, 3, 4 and 5 sexual partners in a month. This suggests that apart from 148 (47.7%) respondents who had been faithful to their partners, more than half of the respondents were not faithful to their sexual partners.

4.2 Students' knowledge of HIV

In this section, data on students' knowledge of HIV and AIDs and sexual behaviors are presented. First, data on research question one (What knowledge do students with hearing impairments have about HIV and AIDs) is presented in Table 11. The aim of the question was to find out the knowledge level of students with hearing impairment on HIV and AIDs.

4.2.1 Students with HI knowledge of HIV/AIDS

Table 14: descriptive statistic for HIV/AIDS knowledge scale

	N	Min	Max	M	SD
1 People can acquire HIV and AIDS from being bewitched	310	1	5	2.94	1.44
2 People who are HIV positive cannot transmit the virus until they have AIDS	310	1	5	2.98	1.57
3 Having unprotected sex with several people makes a person susceptible to contracting HIV	310	1	5	3.02	1.66
4 HIV cannot be contracted through anal sex	310	1	5	2.76	1.34
5 HIV can be transmitted through saliva of a person who is HIV positive	310	1	5	2.78	1.49
6 A Person can get HIV by sharing a towel or cup with someone who has HIV	310	1	5	2.80	1.48
7 Blood transfusion is unsafe because of the risk of contracting HIV	310	1	5	2.75	1.47
8 Coughing and sneezing can spread HIV	310	1	5	2.78	1.48
9 Sharing a glass of water with someone with HIV can transmit the disease	310	1	5	2.58	1.31
10 Withdrawal prevents a woman from contracting HIV during sex	310	1	5	2.79	1.48
11 A Man can get HIV having anal sex with a man	310	1	5	2.70	1.46
12 all infected pregnant women will have their babies born HIV positive	310	1	5	2.54	1.35
13 Showering and washing your genitals after sex can reduce the chances of being infected with HIV/AIDs	310	1	5	2.53	1.38
14 People are likely to contract HIV by deep kissing if their partners are HIV positive	310	1	5	2.62	1.45
Valid N (listwise)	310				

Source: Field data (2015)

Table 14 shows the means (M) and standard deviation (SD) scores for the items of HIV/AIDS Knowledge scale (HAK Scale). The HAK scale was scored and interpreted as follows: 1= Strongly Agree; 2 = Agree; 3 = Neutral; 4 = Disagree; and 5 = Strongly Disagree.

Therefore, to determine students' knowledge of HIV/AIDS, composite mean scores of students' knowledge of HIV/AIDS was divided by the sum items of the HAK scale. The result was 2.16 (M) with a standard deviation of 1.45. Since the composite mean score (2.16) is less than 3 on a 5-point scale, it means that with the exception of item 3 (having unprotected sex with several people makes a person susceptible to contracting HIV), students agreed with all the statements on the HAK Scale. This implies that students' knowledge of HIV/AIDS in this regard is limited. For example, Table 11 shows that students agreed with item 1 (M=2.94, SD =1.44) and 2 (M=2.98, SD=1.57), which state that people can acquire HIV and AIDS from being bewitched and that people who are HIV positive cannot transmit the virus until they have AIDS. Therefore, students' agreement with these statements suggests that they have no or limited knowledge of HIV/AIDS. Similarly, Table 11 points out that students agreed with item 13 (M=2.53, DS = 1.38), which says that showering and washing your genitals after sex can reduce the chances of being infected with HIV/AIDS. It is also clear from Table 11 that the item (13) has a mean score less than 3 on 5-point scale. This suggests that students agreed with the statement and therefore have no knowledge of HIV/AIDS. Another startling discovery is that students agreed with the statements in item 12 (all infected pregnant women will have their babies born HIV positive), 9 (sharing a glass of water with someone with HIV can transmit the disease); and 4 (HIV cannot be contracted through anal sex) which all suggest that the limited knowledge students have on HIV/AIDS. However, Table shows that students were not sure, that is, they remained neutral on

item 3(having unprotected sex with several people makes a person susceptible to contracting HIV), which has the highest mean score ($M=3.02, SD= 1.66$). Therefore, the above finding suggests that students with HI had limited knowledge of HIV/AIDs and demonstrated some gaps in their knowledge of HIV/AIDs transmission.

4.2.2 Views of students with HI on HIV/AIDs infection

In the qualitatively phase of the study, however, views of students with HI on HIV/AIDs infection were sought to add more light on their knowledge of HIV/AIDs in section 4.2.1. The investigation revealed five central themes presented below.

4.2.2.1 ‘HIV/AIDs is real’

While adolescent with HI had multiple perspectives on the causes and HIV/AIDs infection, they agreed on one thing: “HIV/AIDs is real”. They all had the same opinion that AIDS was real and could be contracted, among other things, through sexual intercourse. This was what a 21- year male student said of his view on HIV/AIDs:

I know there is disease called AIDS and it’s a very bad disease. In Ghana there is not cure for AIDS but may be you can get treatment abroad. I have only one partner now because my hearing girlfriend has killed her love. We use contraceptive during sex but if she agrees I will not use because she is also deaf so I can believe her. The hearing people have HIV/AIDS so I will not marry one. I will marry a deaf girl who has no HIV/AIDS. If when you go to hospital you will see pictures about it. When I want to protect myself, I use condom and **ABC** because Africa does not have medicine for HIV/AIDS (Verbatim comment by SDR7)

The reality of HIV/AIDS among students with HI was very strong. Although some of them said that they used condoms to protect themselves of the deadly disease and other STDs, some of

them preferred not to use it. They believed that other preventive strategies such as washing genitals, withdrawals, western medicine could prevent them from HIV/AIDS infection and therefore preferred to “go raw” (without the use of condom). This finding again suggests that although students with HI seemed to be aware of the reality of HIV/AIDS, they still have inadequate knowledge of its means of transmission. As demonstrated in the section below.

4.2.2.2 Going ‘raw and losing guard’

With respect of using condoms to prevent HIV/AIDS infection and transmission, the study found that most students with hi preferred unprotected sex to using condoms. For example, most of the male participants said that while they liked sleeping with the most “hottest girls” in school and town, they liked going raw with them. However, “*most hot girls don’t like going raw*” (Source: BSDR 3), said a 17-year old male student. They complained that “*the moment that you go raw with some of the girls, they lose their guard and don’t want to ‘try’ to be radiant any time you want to*” (Verbatim comment by BSDR 2). So, most of the male participants maintained that the best way to keep your partner was to go raw with her. They believed that most girls tended to leave them when they used contraceptives such as condoms. For example, a 19- year old male student, who had sex with nine (9) different girls in a month, revealed:

Going raw with a girl is the best way to maintain her. Yes! You are right that AIDS is a killer disease and is got from sexual intercourse. But if you love your girl, go raw with her. After that you can wash your genitals. That is the best way to go about it and to keep your girl or boy. I have been together with many girls and I must be frank that the best way to love them is to give them the hottest sex you can. This kind of ‘hotness’ I am talking about can only be done without a condom. What is important is that you must remember to was it (the genitals) immediately you are done with it (Verbatim comment by WSDR 7).

Also, an 18-year old girl, who had 4 partners, disclosed:

AIDS is a bad disease. Some hospitals have medicine for AIDS. I get education about AIDS in pictures and in hospital. But the hospital people are not able to explain things because they cannot sign. We have peer educators who help us in school. I do not have a sexual partner now but I used to have four boyfriends. I don't like using condom. That is why all my boyfriends cannot forget of me. They still say I look sexy, ravishing and enticing because I don't like using condom with them. So I will look for boyfriend who is good so we don't use condom. I remember I used condom with my boyfriends in some few cases. But that was because of I did not want to be pregnant, but not because of AIDS. I believe that using a condom cannot stop AIDS (Verbatim comment by BSDR 5).

Contrary to the majority view, some few students with HI, who have had exposure to information through peer educator and associate very well with hearing colleagues at homes and school, demonstrated wealth of knowledge of HIV/AIDS. For instance, a 15-year old female student explained:

I think having unprotected sex makes a person vulnerable to contracting HIV whether through the vagina or anal sex. What we can do to prevent HIV/AIDS during sexual intercourse is to use condom or take some medicine immediately after sex like antibiotics. No washing of one's genitals after sex will help because if you are a woman, all the sperms will not come out but may be if you are a man yes. Pregnant mother can also give it to their babies (Verbatim comment by WSDR 3).

4.2.2.3 HIV/AIDS is the work of witches

Although adolescents with HI believed the reality of HIV/AIDS, majority of them said it was caused by witches, curses and traditional magic and could only be cured traditionally. A 15 year old girl whose elder sister died of HIV/AIDS said that AIDS could also be caused by traditional medicine and curses from wicket people. She alleged that her sister died of AIDS, but its cause was not from sexual intercourse:

Sister was very sick and when sent her to hospital they said that she was suffering from AIDs. I didn't believe it but people were also saying the something. But people were saying her husband and the first wife were also going to die soon from AIDs. But it is more than five years and sisters' husband and first wife are still alive. But the same people are now saying that my sister disrespected someone in her husband's family and that person put juju on her. She was so good to her husband, but her husband family didn't like her. They like the first wife. So they were fighting everyday because of that they gave her AIDs. If the AIDs my sister suffered came from sex, her husband and the first wife would have also died. But we knew that the cause of my sister's death was from her husband family. It was from juju (Verbatim comment by GSDR 1).

This view was held not only the above narrator, but also a large numbers of students also clanged to this opinion. This, probably, could be formidable challenge to HIV/AIDS prevention.

4.2.2.4 Sharing food, cloth and sneezing

In addition to sexual intercourse and traditional magic, adolescents with HI in this study claimed that people could be infected with HIV/AIDS through sharing of food, clothing, coughing and sneezing. A 13-year old boy said:

If someone gets AIDs, I will never share or use her cloths or eat with him. I will not even sleep in the same room with her because I don't want to get the disease. Our peer educator said that we can eat with AIDs patients without getting the disease, but I don't believe him. Because you can never know, before you realize, you will also have the disease. So, the best thing is not avoid them. I won't have anything to do with aids people (Verbatim comment by WSDR 8).

4.2.2.5 Sharp objects

The views of students with HI on sharing sharp objects with infected people were different. Almost all participants in this study had information about the dangers involved in sharing sharp

objects such as needles, blades, pins and knives with people living with HIV/AIDS. A 14-year old female student disclosed:

NGO people came to school and educate us about aids. They said we can get aids if we have sex without using condom. We can also get aids if we use the same blade with people who have aids. They also mentioned needles and any sharp object that can bring out blood like if you go to hospital and they use the same need to inject someone who has aids and the one who has no aids. The one who has no aids can get the disease. Our peer educator also said this many time (Verbatim comment by GSDR 7).

Majority of the participants believed the power of sharp objects when come to HIV/AIDS infection. This was partly due to the fact that blood was involved when a sharp object is used. A 15-year old female participant said:

Apart from sexual intercourse, there are many ways people can get AIDS. People can get the disease are through sharp objects like blade, needles but not towels and plates. What I don't know is whether a person can get HIV/AIDS through kissing, which is saliva because there is no blood in saliva and we are told it is transmitted through blood. In our church, we do not accept blood from another person (Verbatim comment by WSDR 8).

This suggests that the some of the participants were fully aware that one strong means through which aids is transmitted was blood, which can occur through unprotected sexual intercourse and through the use of sharp objects.

4.3 Sexual behaviours and phenomenological experience of students with HI

In this section, findings from research question 2 (What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDS? And how do they guard themselves against HIV/AIDS infection?) and 3 (What phenomenological experiences do adolescents with

hearing impairments have about their partners' sexual activities (e.g. their use condom of during sex)?) are presented together.

4.3.1 Sexual behaviours/practices of students with HI

Table 15: Descriptive statistic for sexual behaviour scale

	N	Min	Max	M	SD
1. I do have unprotected sex with more than partners	310	1	5	2.26	1.26
2. I do have sex with risky sexual partners once they agree to stay with me	310	1	5	2.43	1.24
3. I do use contraceptives	310	1	5	2.40	1.21
4. My partner and I will not use a condom once we agree not to have sex with anyone	310	1	5	2.20	1.22
5. I do demand to know the HIV/AIDS status of a person before having sex with him/her	310	1	5	2.23	1.27
6. I do have sex with partners who have multiple sex partners	310	1	5	2.22	1.27
7. I do have oral, vaginal or anal sexual contact without a condom.	310	1	5	2.17	1.19
8. I use condoms inconsistently with many sexual partners	310	1	5	2.25	1.23
9. I do engage in deep kissing with strangers	310	1	5	2.49	1.31
10. I believe western medicine has a cure for AIDS	310	1	5	2.32	1.20
11. I believe traditional medicine has a cure for AIDS	310	1	5	2.28	1.26
12. Having sex with a virgin can cure you of AIDS	310	1	6	2.31	1.27
Valid N (listwise)	310				

Source: Field data (2015)

Table 15 shows the means and standard deviation scores for the items of risky sexual behavior scale (RSB scale). Mean sexual behaviours scores were based on a 3-point rating scale (SB), where: 1 = Always; 2 = Sometimes; and 3 = Not at all.

Adolescents with hearing impairments risky sexual behaviours were measured by adding all items on a SB scale divided by the total items on the SB scale. Based on this, Table 12 shows

that mean composite score for adolescent with hearing impairments risky sexual behaviours was 2.3. The fact that risky sexual behaviours mean score is less than 3 on a 3-rating scale, it suggests that adolescents with hearing impairments, in this regard, sometimes engage in sexual behaviors.

Considering the mean scores of individual items, however, the result in Table 12 indicates that item 9 (I do engage in deep kissing with strangers); 2(I do have sex with risky sexual partners once they agree to stay with me) and 3(I do use contraceptives) have the highest mean score of 2.99 (SD=1.41); 2.93 (SD=1.54); 2.90 (SD=1.51), respectively. Once the mean score of item 9, 2 and 3 mean scores are less than 3 on the RSB Scale, it suggests that most adolescent with hearing impairment are sometime engaged in risky sexual behaviours. In the like manner, item 7 (I do have oral, vaginal or anal sexual contact without a condom) and 6 (I do have sex with partners who have multiple sex partners) have the lowest mean scores of 2.37(SD=1.54); and 2.62 (SD=1.47) correspondingly. The items respective mean scores are less than 3, suggesting that the adolescents with hearing impairments in this respect might be at risk of contracting sexual transmitted disease including HIV/AIDs. The rest of the items on the SB Scale require similar interpretations.

4.3.2 Phenomenological experience of partners' sexual activities

In light of the discussion in the preceding section, sexual behaviours of students with hearing impairments were investigated further qualitatively. They were asked to provide phenomenological experiences of their partners' sexual behaviours and how they guarded themselves against contracting HIV/AIDS. Key themes emerged from the investigation are resented:

4.3.2.1 Unprotected sexual intercourse

Most of the students agreed that although they would not have unprotected sex with strangers and multiple sex partners, their partners preferred to have unprotected sexual intercourse with them. From this study, it was revealed that male students were more generally unprepared to use contraceptives than their female counterparts. For example, qualitative evidence was recorded from a female student with severe hearing impairment, who has been in a relationship with her boyfriend for over five years, her experiences of her boyfriends sexual behavior are reported below:

I used not to allow my boy friend to have sex with me without a condom. But this was not easy. But he does not understand whenever I tell him to use a condom. We sometimes fight because of that. But the point is that he does not like to use it. And if I don't allow him, he will get another one. I love him and I don't want him to go somewhere. But I will not have unprotected sex with someone I don't trust or someone who dates many girls. But for now I have unprotected sex with my boyfriend because we agree that he will not have sex with any other partner. I will like my partner to use condom but he does not like using it. As for me I do not know the women contraceptive (Verbatim comment by BSDR 2).

The second respondent was a 16-year-old male student who separated from his two girl friends because they refused to have unprotected sex with him. First, he quarreled with the first girl friend because she denied him sex because he did not have money to buy a condom that day. The second girl friend ended the relationship with him because he could not control himself and did it many times without a condom. He narrated his experience as:

I always blame myself for losing them. They were good girls. They were already in school before I was admitted. So, they had information about HIV/AIDs and how to use condom. But I didn't know. My first girl friend didn't trust me and always wanted me to use a condom. But, I refused to use it and she was very angry with me and texted me later that our relationship was over. I thought she was joking and that was it. But I didn't learn from it. The second girlfriend also left me because of the same reason. But the problem I have is that I do not demand to know my partner's HIV status before having sex with her

because we cannot know. How can you ask this question? Now, I have only one girl friend but I do not know if she has boyfriends because you can trust girls. Today, they will say you and another time they will be sleeping with other boys. That is the problem (Verbatim comment by GSDR 3).

4.3.2.2 Sex with multiple partners

Multiple sexual partners appeared to reflect the experiences of most adolescents with hearing impairments in this study. Both female and male students with hearing impairment did not trust one another when the issue of multiple sexual partners was raised. Most female students tended to accuse that their male friends of betrayals and promiscuous lifestyles. A 22-year-old female student with hearing impairment described the treatment she got from her boyfriend:

My boy friend and I love each other very much. However, there is a very serious problem. He can't stay without a girl. He has many girl friends. I'm very sure of that. Before we became friends he used to have three girl friends. But I accepted him like that because I love him. I know it is dangerous to stay with such a person. But I'm in love with him deeply. I only pray that he doesn't bring me diseases (Verbatim comment by BSDR 8).

Similar concerns were raised by male students with hearing impairments. They also accused their female colleagues of going after hearing boys. One of the male students narrated how his girl friend was snatched away by one hearing boy:

We had been together, for two years. Her parents knew that we were friends because I used to go their house. Her parents were happy about our relationship because we learned together and used to go to school together. But because she is very beautiful, many hearing boys were also chasing her. At first she was hiding that from me. But saw her with them many times and I advised her many times but she didn't care. Then it even came to a point that when I sent a text she will not reply and when I asked why she said she had no credit in her phone. She knew I didn't have money to buy credit for her. Then she started going to school alone until I caught them. I was very angry and she told me not come to their house. Now many hearing boys are using her. It is painful but I can do nothing about it. She doesn't pay attention to me (Verbatim comment by SSDR 3).

Another student said:

I will not have sex with more than one partner because I don't want to get HIV/AIDS. I use condom when I do not trust my partner. It is only when I do not have condom that I have unprotected sex (Verbatim comment by WSDR 8).

4.3.2.3 Embarrassment in purchasing and using contraceptives

The study also found that most students with hearing impairment narrated that they did not only feel embarrassed to buy contraceptives such as a condom, but also they felt embarrassed using them. A 20-year old female student who had her first sexual experience at the age of 11 narrated that her boy friend felt embarrassed to buy a condom:

When I asked him we should be using a condom since he has many girl friends. His reply was that who is going to buy the condom. He said "I can't buy it. I feel embarrassed to even mention the name condom. Those who sell condoms can't understand sign language. So I have to write it and give it to them. Because we are not many everybody knows us. So, they will be talking about us and laughing whenever they see us". Because of that he feels shy to buy a condom (Verbatim comment by SDR 5).

In a group discussion, similar issues were also raised. Most group members believed that one of the barriers to condom use by most students with hearing impairments was because of embarrassment. They said: *The most students feel embarrassed to use condom especially after sexual intercourse one has to remove it makes sure that you take care of it. All these processes are so embarrassing. The best way is not to use it*" (Verbatim comment by GSDR 3).

4.3.2.4 Condom use as a sign of infidelity/promiscuity

From the study, it was clear that most sexually experienced students with hearing impairment complained of being unfaithful and promiscuous for insisting on condom use. For example, a 15-year old student, who complained bitterly about her boyfriend's behavior, said:

Promiscuity, unlawfulness and infidelity are those words my boyfriend uses whenever I insist that he must use a condom. But because he doesn't like to use it, he finds excuses anytime I insist on condom. You see, I can't trust him. He is such that you see him with this girl today and another girl tomorrow. That is why I want him to use condom. I am afraid if I sleep with him without a condom, I can get the disease. Because our teacher said we can get HIV AIDs if you don't use a condom. But if you use a condom there is no day you can get the disease. I am afraid because he doesn't stay with me alone. He has many girlfriends. So any time I ask him to use condom he insults me and says that I don't trust him. But I also love him. He is the only boyfriend I know. I have never slept with anybody apart from him. But he is also not correct (Verbatim comment by WSDR 3).

Accusations and counter accusations of being promiscuous appeared to paint a positive picture of condom and other contraceptives use among students with hearing impairment. Among sexually experienced male students, who claimed to be using contraceptives before sexual intercourse with their girlfriends, said that their girlfriends could not be trusted. To clarify their point, a-21 year old male students whose girlfriend left him two months ago complained:

These days you cannot trust the girls. If you trust them they will give you AIDs. They are more than ready to sleep with any man or boy who is ready to give them money. They don't care. What they care for is money. When they are doing that they don't even think of you the boyfriend. They forget of the promises between you and them. That is why I will not sleep with any girl even my own girl friend without a condom. They can give AIDs anytime. But with condom you are safe (Verbatim comment by SDDR 7).

It was clear from the above extracts that sexually experienced students with hearing impairments, used contraceptives to protect themselves from HIV/AIDs. These students appeared to have a

wealth of experiences of sexual relationships and they have been educated on HIV/AIDs. Those students with less experience of sexual relationship and information about HIV/AIDs indulge themselves in other protective mechanisms (see section 4.2.4).

4.3.2.5 Condom insertion error and Reduction of sexual pleasure

As part of phenomenological experiences of students with hearing impairments, errors of condom insertion and reduction of sexual pleasure were among sexual behaviours that dominated in the findings. Sexually experienced students with hearing impairments reported that their partners were reluctant to use condoms because its tendency to reduce sexual pleasure. They claimed that their partners complained of reduced sexual pleasure when condoms are used during sexual intercourse.

My boyfriend said he doesn't like condom because it is difficult to use. He doesn't even know how to use it. Health workers came to school and taught us how to use a condom. But the way my boyfriend uses it is not the way they taught. They taught us to leave space at the tip of the condom. But he does not do it like that. He doesn't leave any space at the tip of the condoms (Verbatim comment by SDR 3).

Another student said: *The satisfaction one gets without a condom is not the same when we use condom is used. So, that is why I don't like using it because I don't become satisfied. Even when I insert the condom I kind of losing my erection but my girlfriends don't get* (Verbatim comment by GSDR 3). Most male students who reported hating condom use emphasized that they did not get sexual pleasure when they used condoms. However, most female students, who were not happy about this behaviour, said they were upset that their boyfriends could contract STDs if they continued having sex with multiple partners without using condoms. Furthermore, the study has also uncovered that both female and male students with hearing impairments appeared not to

have much knowledge of female condoms. They also reported embarrassment, insertion errors and an indication of infidelity in using female condoms.

4.3.3 Protective mechanisms against HIV/AIDSs

On the part of how students with hearing impairment guarded themselves against HIV/AIDSs, six main themes, presented below, emerged from the study.

4.3.3.1 Having total abstinence from sex or sex with only virgins

From the study, it was discovered that most students with hearing impairments had multiple views of HIV/AIDSs transmission, its cure and prevention strategies. Some of the students were fully aware of the fact that HIV/AIDSs had no cure and could be contracted through sexual intercourse. For this reason, quite a number of them believed that the best way to prevent HIV/AIDSs was to avoid sexual intercourse completely until they were ready to marry. However, some few of them also said that since they could not abstain from sexual intercourse, the best way to prevent themselves from HIV/AIDSs infection was to have sex with partners who were virgins. That is, they said before they engaged in sexual activity with a person, they made sure that the person is a virgin or a trusted person. With this strong sense of belief, one of them said:

Our peer educator told us that there is no cure for AIDS. He said that even the Western and traditional medicine have no cure for AIDS. But my friends also said that there is a cure. There are some strong Western medicines that can cure AIDS now. They also said that once you have sex with virgins, there is no way you can get AIDS because virgins don't have AIDS (Verbatim comment by WSDR 8).

Another informant who experienced his first sexual intercourse when he was 14 years old said:

For me, I believed that the only way to avoid AIDs virus is to have virgin partners. I don't do sex with girls who are not virgins or pure. Those pure girls are free from AIDs. When I am going to marry, I will marry those who are virgins. I believe that even if you get AIDs and marry a virgin, the AIDs will go away (Verbatim comment by BSDR 3).

Although majority of students with hearing impairment in this study were fully aware that AIDs had no cure, some few students still believed that sex with virgins, some western medicine and powerful traditional medicine can cure HIV/AIDs.

4.3.3.2 Washing genitals after sex

Some students with hearing impairment in this study also said that they best way they could prevent HIV/AIDs infection was to wash their genitals after sexual intercourse. This believed appeared to be deeply rooted in the believe system and sexual life of some students with hearing impairments. Those students who believed in washing their genitals after sex said:

I don't like using condom. I used it two times and it was not good for me. I got some itches after sex. So I went back to my usual practice which is, washing my genitals after sex. This is very safer than using a condom. I don't mine using a condom, but I must know what is inside it. When I am washing my genitals I use soap and water, and I am okey with it. I have never had problems with that. I think is pretty safe (Verbatim comment by GSDR 5).

A female student, who has been in a relationship for almost seven years, disclosed that although students with hearing impairments have had information on HIV/AIDs several times, most of them still believe in washing their genital area after engaging in sexual intercourse. *“What they normally do is that they wash their penis before and after sex. But girls usually wash the genital area or bath after sex, and they think that is safe enough”* said the 19-year old girl. Another male student of 14 years said:

To prevent ourselves from getting HIV/AIDS, one can quickly withdraw your penis and wash immediately after sex. As for mother to child, yes, our teacher told us that the baby can get it from the mother. That one nobody can prevent it from happening. The washing of genitals after sex and withdrawal can prevent HIV/AIDS because the sperm will not enter the woman (Verbatim comment by WSDR 5).

Despite these beliefs, some of the students were optimistic that the best way to prevent HIV/AIDS infection is to avoid anything could expose them to AIDS virus.

4.3.3.3 Avoidance of high-risk sexual activities/relationship

Students with hearing impairment in this study had multiple views of what constituted high-risk sexual relationship and activities. Some argued that most high-risky sexual relationships were to engage in multiple sexual intercourses with many partners. Some mentioned unprotected sexual intercourse and sexual intercourse with unfamiliar persons, while others disclosed that deep kissing and genital fondling were all part of high risk sexual activities. Majority of the students with hearing impairment believed that HIV/AIDS could be prevented if they avoid engaging in high risky sexual activities. Although most of the students were aware of some of the risky sexual activities, they were engaged in the risky sexual activities. A sexually experienced female student narrated:

I do not demand to know my partner's HIV status before having sex with him because we cannot know. But what I am sure of is that I will not have sex with more than one partner because that will make me vulnerable to contracting HIV/AIDS. I use condom when I do not trust my partner, it is only when I do not have condom that I have unprotected sex. I do not know how to find out about my sex partner's status because we are told that it can only be done in the hospital and we cannot always be going there anytime we want to meet (Verbatim comment by BSDR 8).

Also, a 17-year old sexually active male student, who had multiple partners, disclosed:

I have had sex with more than one partner and this is because the two are not at the same place. They have agreed to stay with me alone. I have ever used contraceptives, but stopped when we agreed that they will not have sex with any other person. I will like to know my partner's HIV status but cannot because we cannot know. Personally I don't like kissing (Verbatim comment by SDR 1).

In spite of the fact that the students in this study had numerous views of high risk sexual activities, they were all confident of preventing themselves from acquiring the HIV/AIDS virus.

4. 3.3.4 Persuading sexual partners to use condom

Unwillingness to and inconsistent use of condoms were prominent behaviours exhibited among students with hearing impairments. Nevertheless, some few of them said that they were committed to encouraging and persuading their sexual partners to use condom consistently in order to guard themselves against HIV/AIDS infection. For example, a 17-year male student with hearing impairment, who supported condom use and had great self-efficacy to persuading his female sexual partner to use female condom, said: *"It is not once, not twice when I told my girlfriend to buy the female condom but she is always reluctant to do so. She is often embarrassed of what people say about us. But I don't mind, because it is better to use it than to get AIDS"* (Verbatim comment by GSDR 9). He explained that he had to put conscious efforts before his girlfriend agreed for him to use condom. He said:

At first she thought I did not trust her. But that was true. I didn't trust her at first because she was dating two of us. So, I didn't trust her because I didn't want to take chances. The boy she was dating doesn't have good behaviour. He was chasing many girls in school and in town. At the time, the boy had a hearing girlfriend who was also not correct. So, I didn't want to take any chance at all. So, the first time I used condom girlfriend was very angry with me. But as she got to know my life, she agreed to the condom (Verbatim comment by WSDR 5).

Some few students also disclosed that they have been educating their partners about the importance of using condoms and desisting from unprotected sexual intercourse.

4.3.3.5 The use of traditional medicine

In spite of the fact that some students with hearing impairments acknowledged that peer educators and some relatives informed them about the deadly nature of HIV/AIDs and its lack of cure, a handful of them believed that traditional medicine could cure HIV/AIDs and could prevent them from contraction HIV/AIDs virus. Some of them said that AIDs virus could also be inflicted upon by spiritual forces through ‘traditional medicine men and women, witches and magicians’. For example, a student, who hailed from a village in Volta Region, disclosed during a group discussion:

Yes, witches can do everything. They are very powerful people who can use AIDs to hurt others. They can also use their medicine to protect you from anything including sickness like AIDs. Our peer educator told us that the witches can kill people but cannot give us HIV/Aids. Me I don't believe him. If they can kill through their medicine, they can also give you AIDs (Verbatim comment by SDR 5).

Another student from northern region said:

My people say that AIDs is not a new sickness. It has been there for decays. Mostly, people get AIDs, when they happen to cough while having sexual intercourse. But they used to treat it. So, I don't understand why they say it has no cure. If you ask any old people in the northern region, especially Dagbambas, they will tell you that they have the medicine (Verbatim comment by SDR 1).

Some of the students narrated that their parents prepared them spiritually when they were at age. This spiritual medicine prevents them from all sort of sexual transmitted diseases. For example one of them said:

Traditionally there is a medicine known as ‘daðire tim’ which I have taken so that I will not get this disease. Traditionally we believe that when you having sex and lady coughs on you, you and the lady will get this sickness and so you will grow lean. This is a common knowledge in our area; so when one becomes an adult you father give that medicine to you and so anytime you has such a problem you take some and give some to the lady as well (Verbatim comment by SDDR 1).

Others said that they resort to prayers before having any sexual intercourse with their partners. The following statements exemplified some of their narratives:

Anytime one is to have sex, I pray to God to prevent all evil things and spirits from getting to me. We believe that when one is in that impure state, then one can easily be attached by these evils spirits and bad diseases (Verbatim comment by GSDR 1).

Also traditionally we perform the traditional form of sex where the woman lies down and the man is one top; this form of sex does not bring diseases. However these their modern form of sex and all of its other forms bring sickness (Verbatim comment by GSDR 6).

Others also said that the witches and traditional medicine people could only inflict sickness like AIDs to other people but had no power to prevent one from AIDs virus. What is important about the above revelation is that there are some students with hearing impairment who still believe that HIV/AIDs could be transmitted through spiritual means.

4. 3.3.6 Engaging in reduced frequency of sexual intercourse with strangers

In an effort to understand how students with hearing impairments guard themselves against HIV/AIDs infection, sex with strangers explored further. The study unveiled that some students

reported having no sex with stranger, whereas some reported having lower frequency of sexual intercourse with unfamiliar people. For example, one of the students said:

Not having sex with strangers is boyfriend songs he sings anytime I accuse him of unfaithfulness. Sometimes I accuse him intentionally to be sure that he doesn't flirt around. Because AIDS doesn't have mercy for anyone, I want to be sure who he meets besides me. Because whether you can hear or not, AIDS doesn't have mercy. So, I always accuse him so that he doesn't mess around. But anytime we talk about it he tells me that as for him he will never get AIDS because he doesn't sleep with strangers. I have only one person and that person is me. He said he is not the type who sleeps with anybody in the skirt ((Verbatim comment by BSDR 2).

Although statements such as *"I don't mess my life with strangers; I mess with only boys I know; and I sleep with only few unknown people"* were recurring statement in students with hearing impairments' narratives, the sexually experienced, who were deeply involved in messing around with very new face in their communities, said they reduced the frequency of sexual intercourse with unfamiliar people.

I try as much as possible to avoid sexual intercourse with someone I don't know very well or someone I don't trust. So anytime I meet someone I try to drag the courtship process for a while before I allow myself to into sexual relationship. I also pray to God take away all people with troubles and problems including the opposite sex from coming my way. As much as possible I pray so that such people with bad omen do not come my way ((Verbatim comment by BSDR 3).

it is not easy to use condom. I also try as much as possible to use condom. However, these days it has become so expensive that it is difficult to buy it anytime I need it. I have also tried to limit myself to one sexual partner at a time. This is also difficult because there are times that one sees very attractive girls of which they also seem to be interested in me. In cases like that once in a while I am not so faithful to my partner. It is in these cases that I also try to use condoms (Verbatim comment by GSDR 6).

Some also claimed that because some hearing people have difficulties with sign language; it reduced their sexual encounter with the hearing people. One of the students said: *Generally,*

because many people cannot speak the sign language of the deaf, this also serves as an impediment which helps to check the number new female friends I meet and therefore sexual encounters (Verbatim comment by GSDR 6). The above theme suggests that students with hearing impairments considered abstention from and a reduction in a sexual intercourse with strangers as among measures could guard them against HIV/AIDs infection.

4.4 Relationships between HIV/AIDs knowledge, Risky sexual behavior, age and level of education

Table 16: correlation between adolescent of HIV/AIDs and sexual behaviour, age and level of education

		HIV AIDS Knowledge	Sexual Behavior	Age	Level of Education
HIV AIDS Knowledge	Pearson Correlation	1.00	.850**	-.017	.079
	Sig. (2-tailed)		.000	.765	.164
	N	310	310	310	310
Sexual Behavior	Pearson Correlation	.850**	1.00	-.058	.111
	Sig. (2-tailed)	.000		.306	.051
	N	310	310	310	310
Age of Research Participants	Pearson Correlation	-.017	-.058	1.00	.129*
	Sig. (2-tailed)	.765	.306		.023
	N	310	310	310	310
Level of Education	Pearson Correlation	.079	.111	.129*	1.00
	Sig. (2-tailed)	.164	.051	.023	
	N	310	310	310	310

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

* . Correlation is significant at the 0.05 level (2-tailed).

A person correlation was performed to assess whether or not risky sexual behavior could be predicted from not having adequate knowledge of HIV/AIDs, age and level of education among students with hearing impairments. Scores were obtained from summed items of HIV/AIDs Knowledge scale (HKS) and risky sexual behavior scale (SB scales), administered to 310 students with hearing impairment in special schools in the three northern regions. Preliminary examination of the box plots, stem and leaf scattergram (Appendix B 1) showed that the distribution shapes were close to normal for either variable. Both distributions were skewed, and there were few outliers at the low end of the scale. However, the skewness were not judged severe enough to require data transformation or removal of outliers. The scattergram of risky sexual behavior suggested a positive linear relationship. The degree of freedom (df) for this correlation is given as $N-2$, therefore in this case the correlation has 308 df.

Table 16, therefore, the first cell provides information on the relationship between students' knowledge of HIV/AIDS and risky sexual behavior. The result indicates that there was a statistical significant relationship between students' knowledge of HIV/AIDs and Risky Sexual behavior. Person $r(308) = +.85, p < .00$ (two tailed)². The r^2 was .73; thus, indicating about 73% of the variances in risky sexual behavior could be predicted from lack of knowledge of HIV/AIDs. The positive sign implies positive relationship, implying that students who have knowledge of HIV/AIDS tend not to take risky sexual behaviors, whereas those with limited knowledge of HIV/AIDS are most likely to engage in risky sexual behaviors/practices. Based on the analysis, it is safe to reject the Alternative hypothesis (H_1) in favor of the Null hypothesis (H_0) which posited that there was a significant relationship between students with hearing impairments' knowledge of HIV/AIDs and risky sexual relationships.

The second and third cells on the top row present information on the relationship between students' knowledge of HIV/AIDs and students' age and level of education. The person's r results for age (-.017) and level of education (.079) showed negative relationship between them (age and level of education) since the two tailed significant levels, .765 and were greater than .05 (i.e. age, $p=.765$ and .164). Similarly, there was no significant relationship between risky sexual behavior age and level of education. The person r result for age (i.e. -.058) and level of education (.111) and their level of significant were greater than .05, $p=.306$ and $p=.051$ respectively. Since there is no significant relationship between students with hearing impairments knowledge, age and level of education, it is safe to reject the Null hypothesis (H_0) in favor of the alternative hypothesis (H_1), which asserted that there was no significant relationship between students' knowledge of HIV/AIDs, age and level of education.

The final bivarial correlation can be found on the last cell in the third row of Table 16. It shows the relationship between age of research participants and their level of education. The person's r value of .129 represents a positive correlation between age and level of education and significant at .05 (i.e. $p=.023$), that is, about 53 percent of the variances in risky sexual behavior could account for age and level of education of the participants. In other words, the results indicate that as students grow older and acquire more knowledge, they are likely to have increased knowledge of HIV/AIDs and tend not to involve in risky sexual behaviors.

4.5 Gender Differences in HIV/AIDs Knowledge

Table 17: Group statistics for adolescents’ knowledge of HIV/AIDs

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Students’ Knowledge of HIV AIDS	Male	176	46.27	13.045	.983
	Female	134	29.21	10.177	.879

Source: Field data, 2015

Table 18: Independent sample t test for HIV/AIDs knowledge

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-t.)	MD	Std.E.D.	95% CI	
								Lower	Upper	
Students’ knowledge of HIVAIDS	Equal variances assumed	13.26	.00	12.51	308.00	.00	17.06	1.36	14.38	19.74
	Equal variances not assumed			12.93	307.81	.00	17.06	1.32	14.46	19.65

Source: Field data, 2015

An independent sample *t* test output presented in Table 17 shows group statistics for students’ knowledge of HIV/AIDs for gender. It is obvious that HIV/AIDs knowledge mean score for 134 female students was 29.21 with a standard deviation of 10.18, while for 176 male students had a mean score of 46.37 with a standard deviation of 13.05. Undoubtedly, the group statics for HIV/AIDs knowledge indicated that there was a difference between female and male students’ mean scores.

An independent sample t test was performed to assess whether or not there was a gender difference in mean HIV/AIDS Knowledge scores. Preliminary screening indicated (Appendix B 1) indicated that scores on the dependent variable were normally distributed with only one outlier in each group (Appendix B). But because these outliers were not judged extreme enough to require data transformation, they were retained in the analysis. Levene test for equality of variances showed a nonsignificant difference between the variances; because the homogeneity of variance assumption did not appear to be violated, the pooled variance of the t test was used. The male and female groups had 176 and 134 participants, respectively. The difference in mean HIV/AIDS Knowledge score was found to be statistically significant, $t(308.00) = 12.51, p = .00$ ($p < 0.05$), two tailed. The mean HIV/AIDS Knowledge score for female ($M=29.21, SD= 10.18$) was higher than that of males ($M = 46.27, SD = 13.05$). The 95% CI for the differences between these group means, M_1-M_2 , had a lower bound of 14.38 and an upper bound of 19.74. This study suggests that male students with hearing impairments' knowledge of HIV/AIDS are significantly different from that of the females. Therefore, the alternative hypothesis (H_1), which claimed that there was no significant difference between male and female students' knowledge of HIV/AIDS, was rejected in favor of the Null hypothesis (H_0), which asserted that there was a significant difference between male and female students' knowledge of HIV/AIDS. Students were also investigated qualitatively to provide explanation to the quantitative study. Their views on gender differences are presented below.

The study revealed a rather surprising conclusion in the sense that qualitative interviews with both male and female students with hearing impairment revealed that the female students seemed to have more exposure to HIV/AIDS education than their male colleagues. The female students

with hearing impairment revealed that they usually receive information on HIV/AIDs in school and at home. Family members often think that they [students] are more vulnerable to sexual abuse, harassment, teenage pregnancy and HIV/AIDs than their age peers without disabilities. They claimed that parents and family members often counsel them, especially, whenever they realized that they [students] are of age and are likely to have close relationship with the opposite. For example, a fourteen (14) year old female research participant, who had two (2) sexual partners revealed:

The first time I heard of AIDs was when my elder sister realized that I was menstruating. She was surprised because of my age. I was thirteen by then. The first thing she did was to talk to me about how to protect myself. It was during this talk she mentioned AIDs. Of course, I heard of it in school, but I did not know that the disease was that dangerous. She told me to always use condom to protect myself against pregnancy and AIDs. Since then, I don't allow my boyfriends to do it without a condom. And he understands me better. That is why I love deaf partners because if hearing people have the sickness and they will never tell you (Verbatim comment by BSDR 2).

In a similar vein, seventeen (17) year old male, who had a girlfriend without hearing impairment revealed how he got information about HIV/AIDs.

I am 17 years old. I have one girlfriend who is hearing. I got to know of HIV in hospital. I went with my mother because my little sister was sick. The doctor asked us to go for blood test. And we went to a wrong room, where many people who had the disease were waiting and watching TV. I was so scared. In the room, there were posters of people with the disease. When we came out I saw similar posters. And I took my time to read it. I was angry my mother did not tell me about the disease. But now, myself and my girlfriend take our time to read about it. We know HIV/AIDS is a bad disease. So we use condom to stop us from getting AIDS. My partner will not agree to have sex with me without condom. She told me there is no medicine for HIV/AIDS and that African people who get HIV/AIDS will die (Verbatim comment by GSDR 6).

Although both male and female students disclosed having access to HIV/AIDS knowledge and information, one might consider female students having tendency of being exposed to lots of information on HIV/AIDS than their male colleagues. For example, most of the female participants unearthed that they get information about HIV/AIDS and other sexual related diseases from parents, siblings, other family members and neighbors. Because of their disabilities, concerned parents, siblings and neighbors often consider them vulnerable enough to be coerced into unwanted and unprotected sexual activities, which could lead to unwanted pregnancies, HIV/AIDS infection and other sexual transmitted diseases. For this reason, females with hearing impairment are often being educated about unwanted teenage pregnancy, HIV/AIDS and related diseases.

4.6 Gender differences in students' sexual behaviors

Table 19: Group statistics for adolescent sexual behaviour

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Students' risky Sexual Behavior	Male	176	39.15	11.11	.84
	Female	134	26.37	9.45	.82

Source: Field data, 2015

Table 20: Independent sample t test for adolescent sexual behaviour

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-t)	MD	Std. ED	95% CI	
								Lower	Upper	
Sexual Behavior	Equal variances assumed	5.895	.02	10.69	308.00	.00	12.78	1.20	10.42	15.13
	Equal variances not assumed			10.92	304.19	.00	12.78	1.17	10.47	15.08

Source: Field data, 2015

An independent t test was performed to assess if there was a difference between the two independent groupings (female and male risky sexual behaviors. Male and female participants were 176 and 134, respectively. Preliminary data screening indicated that data were normally distributed in the gender grouping and there were no outliers to warrant data transformation. Leven test for equality of variances was performed. Result indicated that $F = 5.10$, $P = .02$ ($p < 0.05$), suggesting that there was no significant violation of equal variance assumption, therefore Equal variances can be assumed, and we test the hypothesis using the t test row of the results. The mean risky sexual behavior differed significantly, $t(308.00) = 10.69$, $p = .00$ ($p < 0.05$), two tailed. Mean risky sexual behavior for male group ($M = 39.15$, $SD = 11.11$) was higher than that of their female counterparts was ($M = 26.37$, $SD = 9.45$). The 95% CI for the differences between the male and female group means, $M_1 - M_2$, had a lower bound of 10.42 and an upper bound of 15.13. Therefore, we can reject the Alternative (H_1) in favor of the Null hypothesis (H_0) and conclude that a statistically significant difference exists between male and females' risky sexual behaviors. Again, the subsequent paragraphs through more light on the quantitative result.

On the qualitative of the study, the findings on students' sexual behavioral practices appeared to be in congruent with the quantitative results. In-depth interviews with most female and male students disclosed male students are most likely to engage in risky sexual behaviors than their female partners. For instance, a good number of male research participants said that they preferred having raw sex with their girlfriends to using condoms during sex. An interaction with a seven teen (17) year old male student on the use of condom during sex brought startling revelations. The male student said: *"I know AIDs is real. But I don't like using condom during sex because I derive more pleasure in having sex without a condom than when I don't use it.*

Every boy wants to get every drop of satisfaction from the girl friend". Most boys unveiled that they felt more comfortable asking for sex without a condom from their girlfriends than their girlfriends. For instance, a fifteen year old male students with a multiple sexual partners alleged: *"Asking her to do it without a condom and many other things won't make me lose my respect, but she cannot do that, she will feel shay to say don't use condom"*. Most of male students agreed that there was something "very hot" in being able to have sex without a condom. Although one male student said it was dangerous not to protect himself, he did admit that he preferred "going raw". But generally, both female and male students admitted to being more open about what they wanted during sex and more physically satisfied when they did not use condom and other contraceptives. In one of the interview scripts, a 24 year old female student complained:

Boys like the fastest way to having sex, their fantasy and the willingness to try new things is what matters to most boys when sex is concerned. They don't care about what happens now. It is their fantasies and sexual adventures that keep them moving. They prefer to sleep with the hottest girl in school or in town. They don't care if the girls have diseases or not. What they care for is sex. When you insist that they should protect themselves, they leave you and go for other girls. They may regret later. But it is always too late. When I was 15, I had 3 boyfriends. All of them were good, so we did not use condom. They used to wash their panes with water after sex. They use to say that condom is not good and sweat and it cannot stop AIDS.

But almost all research participants agreed that sex without a condom and unprotected sex were the quickest way to getting a satisfying sex when they felt the urge. They disclosed that boys with hearing impairment preferred sexual experiences with no drama and no obligations whatsoever. They preferred to have sex without preconditions or a reminder of all those diseases, contraceptives, unwanted pregnancy. *"What they need is sex and they want to have it instantly"*, a 19 year old female student said.

4.3 Summary

In this chapter, quantitative results and qualitative findings were presented sequentially. Quantitative results were presented as a form of primary data and augmented by qualitative findings. It indicated that majority of the participants were between the ages of 15 and 20 years old and came from northern region, Brong Ahafo region, upper east and upper west regions of Ghana. They participants were made up 176 Males and 34 females. With regards to participants' knowledge of HIV/AIDS, the study found that participants had limited knowledge of HIV/AIDS since their mean scores on the HAK scale was less than 3 on a 5-point rating scale. In terms of their sexual behavior, the study found that students with hearing impairments sometimes engage in risky sexual behavior, making them susceptible to HIV/AIDS infection. Their sexual behaviours included unprotected sexual intercourse with familiar and strangers; sexual intercourse with multiple partners; and unwillingness to buy and use contraceptives. Their preventive mechanisms included total abstinence from sex and sex with virgins; washing genitals after sex; persuading sexual partners to use condom and the use of traditional medicine.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This main thrust of the study was to investigate students' knowledge of HIV/AIDS, risky sexual behaviors/practices and how they used their knowledge of HIV/AIDSs to guard themselves against HIV/AIDSs infection. Central to this research was measuring the relationship between students' knowledge of HIV/AIDSs and the risky sexual behaviors, age and students' level of education as well as finding out the phenomenological experiences of female and male students regarding their sexual partners' use of contraceptives during sex. In this chapter, the central aim is to discuss key results/findings presented in the preceding chapter. The discussion starts with students' background data; knowledge of HIV/AIDSs; risky sexual behavior; relationships between students' knowledge of HIV/AIDSs and their risky sexual behaviors; male and female students' HIV/AIDSs knowledge and sexual behavior differences. The discussion ends with students' phenomenological experiences of their sexual partners' use of contraceptives (e.g. condom) during sex.

5.1 Background data and participants' sexual experiences

This study found that three hundred and ten (N=310) adolescents with hearing impairment participated in this study. The samples were taken from fifteen (15) special schools in the Northern, Upper East and West and Brong Ahafo regions of Ghana. The mean age was 18, minimum and maximum ages were 14 and 24, respectively. 84.2% were between ages of 15 and 20, representing the highest age group, while 14.2% were between 21 and above. This finding suggests that students who were between the ages of 15 and 20 were more willing to participate in the study than any other age group. Probably, this age group in particular falls between middle

and late adolescent period. At that age adolescent are more comfortable and willing to explore and share new ideas with others including strangers. Studies have shown that adolescent at this age group require belongings and friends to negotiate this stage successfully. Therefore, interactions with peers and others are vital in adolescents' life. Such interactions provide social comparisons through which the adolescent is able to judge social success (WHO, 1998; 2000). Similar studies have documented that there are biological and physiological changes that take place during adolescence (Arnett, 2006). Such biological and social factors such as maturity, social skills etc could even provoke the interest of adolescent between 15 and 20 to feel more comfortable to discuss issues of sex and HIV/AIDs than any other age group.

5.1.1 Gender

Participants in the study were made up of 56.8% (176) male and 43.2% (134) females. This means that many male adolescents with hearing impairment were more willing to discuss issues of sex and HIV/AIDs than their female colleagues. Although it is always said that females are more sociable than males, in some instances like initiating romantic relationships males lead the process, especial in the Ghanaian culture or context. Therefore, it is not surprising that the male adolescents were more than female in the study.

5.1.2 Age of first sexual experience

This study has also shown that almost fifty percent, 49.7% (154), of the participants had their first sexual experiences when they were between 10 and 12 years old. 31.3% (97) of the respondents were between 13 and 15 years old, 15.5% (48) aged between 16 and 18, whereas only 3.5% (11) were 19 years and above old. This result suggests that almost half of the

respondents had their first sexual intercourse before their fourteenth birth day. However, the finding is contrary to the popular belief that persons with disabilities are asexual beings. For instance, Anderson and Kitchin (2000) point out that there are many myths concerning sexuality of persons with disabilities abound. Myths such as persons with disabilities are not interested in sex; they are deviant and are unable to participate in sexual activities. The result of this study is in sharp contrast to those popular beliefs. From the standpoint of sexual scripting theory, this assertion is subjective and cannot be generalized to all persons with disabilities. For instance, depending on health condition, experiences and the exposure persons with disability gets at intrapsychic and cultural scenario levels, they develop capacity to decode sexual intentions and act sexually because it the sort of the sort sexual script that brings together one's desire to have sex and pleasure one drives from it.

Furthermore, this finding suggests that persons with disabilities including those with hearing impairments are human being like any other person. They have sexual feelings; and can also be infected with HIV/AIDs virus like those without disabilities. What seems shocking about this result is that majority of the participants, 49.7% (154), explored their sexuality at an early stage than normal since majority of the participants had their first sexual intercourse at ages of the ages of 10 and 12. Their early involvement in sexual activities including sexual intercourse could be explained from individual factors and environmental point of view.

First, pubertal development varies from one child to another. For example, studies have demonstrated that early maturation in boys and girls influence their early or late sexual initiation (Feiring, 2002; Brody, 2002). Brody (2002) argued that girls undergoing early sexual maturation

can show up different behaviours including exploring their sexualities. Also, Brook, Morojele, Zhang, and Brook (2006) argued that the number of sexually active adolescents kept rising with age, and that it is difficult to find people in their late adolescents period who have who have no experience of sexual intercourse by the age of 20. Similarly, study Nigeria showed that over three quarters of women reported having had their first sexual intercourse before their twentieth birth day, and, by their twenty-fifth birth day, nine in ten women were sexually experienced (Macro, 2003). However, Feiring (2002) asserts that early sex initiation or exploration is not all that bad because early romantic experiences in adolescent play a central role in their self development and their ability to develop intimate relationship with significant others in the adolescent's future marital life. Therefore, what needs to be done at this volatile time of life is to educate adolescents on the dangers involved in sexual exploration and the vulnerability of being infected with HIV/AIDS virus.

In addition, the adolescents with hearing impairments' early sexual initiation could also be influenced by environmental factors, for example: peer influence, home factors and the communities in from which they hailed. For example, parental influence or control has significant impact on adolescents' sexual behavior. Studies have shown that the way parents relates with their adolescents with and without disabilities make adolescent hinder or promote their children's early or late initiation of sexual intercourse (Dilorio, Dudley, Soet, & McCarty, 2004; Feirings, 2000). For instance, a male student with hearing impairment, whose girlfriend ended their relationship abruptly, said that her girlfriend's parents were happy and promoted their relationship:

We had been together, for two years. Her parents knew that we were friends because I used to go their house. Her parents were happy about our relationship because we learned together and used to go to school together().

In this case, the parents of the girl, probably, were happy for the relationship because the relationship seemed to be healthy, that is, the adolescents were learning together. Perhaps, if the parents were fully aware that the adolescents were practicing sexual activities, they might have agreed with the relationship. In most Ghanaian families, sexual relationships in boy-girl relationships are often not approved because there is high a tendency of them being engaged in sexual intercourse or activities. Therefore, depending on the family characteristics and education, adolescent with and without disabilities could get introduced into early sexual activities. For instance, Miller and Sneesby (1988) disclosed that, adolescents who have higher educational ambition and do well in school tend to delay first sexual intercourse and even do it less frequently (Ohannessian & Crockett, 1993).

Also, peer pressure, which can occur in many forms and at many different places, can also influence adolescents into early sexual intercourse and activities. Consistent with the work of Feiring (2000), study finds that adolescent romantic and sexual activities emerge in a peer group context. That is, it is the peer group that usually sets the stage to facilitate the initiation of friendship which in turn transit to relationships and into sexual activities with other sex. From chapter 2, social ecology theory explained that significant others of adolescent with HI play a pivotal role in holistic development of persons with disabilities. Members who matter to adolescent with HI are located at the mesosystem of the social ecology. Here, parents, siblings, friends, boy/girlfriends and sometimes teachers all form part of the mesosystem of the adolescent with HI. As they interact, share ideas, ideologies, aspirations and observed behaviours of

colleagues, they tend to learn and internalized those behaviours and ways of thinking passively or negatively. According to Bronfembrenner (1995) such experiences are central to the holistic development of actors in the mesosystem.

5.1.3 Sexual relationship

In respect of the sexual relationship of adolescent with HI, the study showed that more than half of the participants were engaged in active and romantic relationship, 50.3% (156), while 49.7 % (154) were not in relationship. Again, this finding is not surprising because research indicates that adolescents with and without disabilities show interest in other-sex, which often, lead to dating, love making and other sexual activities (Fierings, 2000;). All these activities are considered part of social processes through which adolescents practice and get experience of heterosexual relationship (Feiring, 2002; Brody, 2002). Also, Brook et al. (2006) found that most adolescent at this stage are sexually active and it is difficult to find an adolescent who is not involved in active sexual relationship. Also, the most shocking revelation was that about 37.4% (116) of the participants have been in relationship for 11 years, whereas 25.8 % (80) and 36.8 % (114) said they were in relationship for some weeks and months respectively. The long relationship, that is, those who had been in a relationship for 11 years, might suggest faithfulness in adolescent relationship. However, 40.3% (125) of the same respondents reported having had sexual intercourse with others besides their regular sexual partners. This result is consistent with the work of Friering (2000), which states that adolescents select their sexual partners based on stimulus characteristics, that is, desirable personality and physical attractiveness. This may indicate that adolescent could play around for some time until they meet partners with the right

stimulus characteristic. In this period of exploration, adolescents could have several girl or boyfriends.

Here again, sexual scripting theory helps in the understanding the sexual behaviour of adolescent with HI. The desire and capacity of adolescent with HI to engage in active sexual and romantic relationship also depend on the internalized scrip the adolescent with HI had at the intrapsychic, interpersonal and cultural scenarios levels of sexual scripting theory. By virtue of the nature of sexual scripts, interactions and instructional guide from the culture, which envelops broader ideologies; regions beliefs; traditions; current economic situations available to adolescent with HI, some may be initiated to early sexual relationship. Also, having more than one boy/girlfriend is social script learned at the cultural scenario level. Adolescent with HI cannot hear or experience significant difficulty in hearing what others say, but they have eyes to see what happens in their immediate environment. This paves the way for them to learn, internalized what is learned and then put them into practice. Therefore, social scripting theory argues here that whatever sort of behaviour adolescent with HI exhibits depends on the scripts available to them in the environment. The sad aspect of the finding is that adolescent with HI have the tendency to internalize sexual script negatively, thereby exposing themselves to risky sexual behaviours that might lead to HIV/AIDs infection.

5.1.4 Frequency of sexual intercourse

The most shocking revelation about the frequency of adolescent sexual activities in a month was that one person (3%) disclosed that he usually have sexual intercourse with 14 partners in a month, 47.7% (148) limited themselves to only 1 partner, while 34.8% (108), 7.1% (22),

3.5%(11) and 4.8 (15) had sexual intercourses with 2, 3, 4 and 5 sexual partners respectively in a month. This suggests that apart from 148 (47.7%) respondents who had been faithful to their partners, more than half of the respondents were not faithful to their sexual partners. that , they also had experiences of sexual intercourse with other people, whereas 185 (59.7%) indicated that they had no such sexual experiences with other partners. This finding goes to support early discussions, which indicated that almost half of the students with hearing impairment in this study had more than one sexual partners, suggesting unfaithfulness in a relation. This kind of disloyalty in a relationship put adolescents at risk of HIV/AIDs infection and other sexual transmitted diseases such as gonorrhoea, syphilis and candidates. Rohleder (2009) argues that all this behaviour occur due to lack of safe sex practices, lack of sex education, lack of knowledge of HIV and the adolescents' inability to hear. Although finding sounds dangerous, having one or more than one sexual partner depends on the type friends or actors adolescent with HI has in his or her meso, exo and macrosystem (Bronfennbrenner, 1997; Gagnon, n.d). Although frequency of sexual intercourse a person with and without disabilities has biological and health condition of a person, based on sexual scripting theory, it also has its social dimension. For instances, it is possible that adolescent with HI discuss their sexuality and sexual performance with age peers. Such discussions have the tendency of influencing others to explore their sexual performance. Therefore, at the level of interpersonal level of sexual scripting theory, adolescent with HI can be exposed to behaviours that can be considered positive or negative depending on the sort of cultural, religious and ideological background one comes from.

5.1.2 HIV/AIDs knowledge

Students with hearing impairments' knowledge of HIV/AIDs was determined using HIV/AIDs knowledge scale (The HAK scale), where: 1= Strongly Agree; 2 = Agree; 3 = Neutral; 4 =

Disagree; and 5 = Strongly Disagree. With this scale in mind, this study finds that adolescents with hearing impairments have no or limited knowledge of HIV/AIDs. Although there were some gaps in their knowledge of HIV/AIDs, composite mean score on the 5-point rating scale (M=2.16, DS= 1.45) was less than 3. This finding indicates that adolescent with hearing impairment agreed to most of the items on the HAK scale, suggesting that their knowledge of HIV/AIDs in this regard is limited. For example, participants were not certain with item 3, which said that *“having unprotected sex with several people makes a person susceptible to contracting HIV”*. Also, they agreed to item 1, which said that *“people with can acquire HIV and AIDs from being bewitched”*. Their agreement with and uncertainty in most of the items on the HAK scale suggest that they have limited or no knowledge of HIV/AIDs.

Also, in the qualitative phase of the study, although participants demonstrated some level of knowledge of HIV/AIDs in certain situations, they also demonstrated accurate knowledge of HIV/AIDs. This was especially clear when majority of them said that HIV/AIDs was real and could be transmitted through sexual intercourse. However, they displayed inaccurate knowledge when they said that they preferred having sexual intercourse with multiple partners and without the use of condom; HIV/AIDs could be transmitted through coughing and sneezing; sharing a class of water; and that it could also be cured by traditional medicine men and women; and could be inflicted upon others by powerful spiritualist. This finding implies that majority of the participants' knowledge of HIV/AIDs was limited. This finding is consistent with Aderemi (2011), who found that knowledge of HIV/AIDs transmission among adolescents' secondary school students in Nigeria, was also very low.

In addition, the finding sits very well with Tun's et al., (2013) study of persons with disabilities and HIV/AIDS. They found that due to persons with disabilities' lack of knowledge, inaccessibility to information (sex education, information about safe sex practices) and poverty persons with disabilities were exposed to HIV. In addition, they also found that because of limited knowledge of HIV/AIDSs some of the persons with disabilities were sexually abused.

Several reasons could explain why adolescents with HI may lack adequate knowledge of HIV/AIDS. First, the sources of information for adolescent with HI were limited to only peer educator. In many instances in the qualitative research finding, adolescent with HI stated that their peer educator in school talked to them about HIV/AIDSs. It was only in some few instances they mentioned what parents and siblings said about HIV/AIDSs. Also, adolescents, in some few cases, mentioned that they got information about HIV/AIDSs through personnel from NGO, hospital and church. This obvious finding confirms the theories presented in chapter two. These theories emphasized that the immediate environments (micro and mesosystems) of adolescents with HI plays a central role in HIV/AIDSs knowledge of adolescent with HI. Bronfennbrenner (1994) argued that what children experienced or events that occur at home affects children behave in school and vice versa. That is, home and school relationship plays central role in shaping the social life and cognitive behaviour of everyone including adolescent with HI. In the case of HIV/AIDSs knowledge of adolescent with HI, peer educators played a pivotal role in shaping their knowledge of HIV/AIDSs. This again confirms the interconnectedness between home and school. Information gotten from peer educator has the tendency to influence the cognitive and sexual behaviour of adolescent with HI. Again, students did not mention what their teacher taught them about HIV/AIDSs. While this finding might imply that students with HI live

and operate in their own world, it also goes to establish that either HIV/AIDS is not part of syllabi of in special schools or it is not taught in the school the research was conducted.

5.1.3 Sexual behaviour of students with HI

The aim of research question 3 was to establish whether or not behaviours of students with HI placed them at risk of being infected with HIV/AIDS. To measure this, students' the mean scores of students' sexual behaviours were measured on a 3-point rating scale (SB), where: 1 = Always; 2 = Sometimes; and 3 = Not at all. Based on this scale, the study found that mean composite score for adolescent with HI sexual behaviours was 2.3, suggesting that the adolescents with HI sometimes engage in risky sexual behaviors. When individual scores were considered, the result showed that item 9 (I do engage in deep kissing with strangers); 2(I do have sex with risky sexual partners once they agree to stay with me) and 3(I do use contraceptives) have the highest mean score of 2.99 (SD=1.41); 2.93 (SD=1.54); 2.90 (SD=1.51), respectively. Given that the most of the mean scores are less than 3 on the SB Scale, the study suggests that adolescent with HI in this investigation are sometimes engaged in sexual behaviours, placing them at high risk of getting HIV/AIDS infection.

This finding is congruent with other investigations that found that adolescent with disabilities engaged in sexual intercourse with multiple partner; unprotected sexual intercourse; having multiple partners; and tobacco and marijuana use were higher than their non-disabled colleagues (Choquet, Du Pasquier Fediaevsky, and Manfredi, 1997). However, other researches argued that adolescents are prone to risk taking behaviours irrespective of their ability or disability. For example, Arnett (1992) concluded that adolescents in general are extremely prone to risk taking

and impulsivity including unprotected sexual activity; drug use, and unintentional injuries through accidents. Similarly, others asserted that adolescent are more predisposed to risk taking behaviours due to their biological, environmental and personal factors (Resnick, et al., 1997).

Also, in spite of the consistent result, these findings resonate the fact that adolescent with HI including those with other disabilities are sexually active and can participate in sexual activities as other people without disabilities. Their involvement in sexual activities is natural. This is because students with HI are at an adolescent stage, where development is taking place in all aspects of their life: physically, cognitively, emotionally, and behaviorally (Feirings, 2000). It is also natural for adolescents to develop sexual feelings within themselves and for the opposite sex. Studies have shown that feelings of love; sex; displaying and receiving affection are nothing but basic human needs (Murphy & Elias, 2006). Therefore, students with HI have sexual feelings like any other person without disability. However, their current state, that is, being adolescents and having hearing impairment put them at high risk of contracting STDs including HIV/AIDs if they continue to engage in risky sexual behaviours. For instance, Appiah-Agyekum and Suapim (2013) argued that adolescents' age places them at high risk to be infected with HIV/AIDS since they are sexually active and may have unprotected sexual intercourse with multiple partners.

This finding reechoes sexual scripting theory which argues that sexual desire and activities operate on three interconnected levels: intrapsychic, interpersonal and cultural scenarios. All the three levels provide instructional guide for sexuality of every one including adolescent with HI. Therefore, the capacity of adolescent with HI to engage in sexual conducts is natural. However, what sort of sexual conduct they engage in must be guided by the sexual scripts internalized from

home, peers and in the community. That is, any behaviour and practices internalized at this level has two huge effects. The adolescent with HI can develop positive or negative behaviours. They can also develop both depending on the situation they find themselves. Therefore, behaviours learned from home, school, and community and from peers have the tendency to guide adolescent with HI to engage in responsible sexual activities or misguide him/her to engage in risky sexual behaviour.

5.1.4 Phenomenological experiences of partners' sexual activities

On the part of the phenomenological experiences of sexual partners' activities, the investigation revealed that many students with HI complained of their sexual partners continued to have unprotected sexual intercourse; had sexual intercourse with multiple partners; sexual partners felt embarrassment to purchase and use contraceptives such as condom; sexual partners considered the use of condom as a sign of infidelity/promiscuity; sexual partners encountered formidable challenges in inserting condom correctly; sexual partners felt that condom use reduces sexual pleasure.

This finding confirms the result found in the quantitative phase of the study. It is clear that students with HI in this study are engaged in sexual behaviours which might place them at risk of contracting sexual transmitted disease including HIV/AIDS. For example, students with HI reported that their partners were engaged in unprotected multiple sexual intercourse and felt embarrassed to purchase and use condoms and other contraceptives. It is clear from this finding that students with HI impairments are at risk of contracting STDs including AIDS virus once they are engaged in unprotected and multiple sexual partnership. With regard to the students' use of

condom, it is negative attitudes about the use of condom that persist. Similar findings were found in America, where even adolescents without disabilities were engaged in unprotected sexual intercourse. They also reported that condom use reduced physical pleasure; they felt embarrassed to purchase condoms and saw condom use a sign of disloyalty in a relationship; difficulty in using condoms and that the prevalence of condom use has been inconsistent among adolescents (Kennedy, Nolen, Applewhite, Pann, Shamblene & Vanderhoff, 2007).

Several observations derived from this finding is that majority of the students with HI reportedly talked to their sexual partners to use condom or preventive measure to guard themselves against HIV infection. Such findings have significant implications for programme development for this vulnerable populations regarding the incorporation and strengthening of program components on peer education in schools.

5.1.5 Knowledge of HIV/AIDs prevention

The item was aimed to measure HIV/AIDs prevention knowledge of students with HI. The study found that students with HI used several strategies to prevent HIV/AIDs infection. Those strategies included: Having total abstinence from sex or sex with only virgins; washing genitals after sex; avoidance of high-risk sexual activities/relationship; persuading sexual partners to use condom; the use of traditional medicine; and engaging in reduced frequency of sexual intercourse with strangers. Similar to these findings, previous researches reported that adolescents often engaged in lower frequency of sexual intercourse with strangers to prevent their chances of contraction HIV/AIDs. They also increased their condom use and sometimes abstained from sex to guard themselves against the deadly disease (Kennedy et al. (2007).

Although adolescents with hearing did not report circumcision as one of their established strategy for HIV/AIDS prevention strategy, Weiss (2007) reported circumcision as an established preventive measure of HIV in male. Weiss (2007) found that male circumcision decrease the risk of HIV infection among heterosexual men by up to 66%' (Weiss, 2007:66-72). However, circumcision must be done with due medical diligence. Without the due medical diligence, medical instruments used in the circumcision can expose males to infections including HIV. Paradoxically, most African men are known to be circumcised, but HIV is rapidly spreading in Africa more than perhaps any other region in the world, thus lending a suspect to the potency of male circumcision as emerged from the randomized trial. However, traditional mode of circumcision using crude instruments to circumcise as many men as possible without thorough sterilization which is rife in most African villages may well add to the increasing risk of transmitting HIV from one individual to the other (Weiss, 2007).

Also, the study revealed that some students with HI held on to the traditional practices such as washing genitals after sex and using traditional medicine and praying to God before and after sex to prevent them from the transmittable diseases including HIV. This suggests that even those some of the students with HI had no knowledge of the dangers and mode of HIV/AIDS transmission. It also gives credence to the fact that HIV/AIDS education for persons with disabilities is still low. Amoah (2005) argued that in some parts of Africa HIV/AIDS infection was high because in most African countries there was low sex education; weak health systems; and talking about sex was considered a taboo.

At the theoretical level, Gagnon (n:d) called influences that come the culture, region and ideologies cultural scenario, considered as the third level of their sexual scripting theory (Gagnon & Simon, 1973). In it, they argued that cultural scenarios involves all instructions, guidance, and education received from culture and religion to guide sexual life, ways of thinking and doing things. Here, adolescents' knowledge of HIV/AIDs prevention is influenced by the norms, rules, values, beliefs surrounding sexual behaviours, practices in their cultural and religious background. For example, when adolescent with HI asked of the HIV/AIDs prevention mechanism, they tended to mention: abstinence from sex; sex with virgins; washing of genitals after sex; avoidance of high-risk sexual activities/relationship; persuading sexual partners to use condom; the use of traditional medicine; and engaging in reduced frequency of sexual intercourse with strangers. It is clear, the strategies mentioned were influenced by the context in which adolescent with HI came from. For example, sex with virgins and washing of genitals are beliefs embedded in some culture and these beliefs could be internalized by some people including adolescents with HI. Therefore, all cultural activities including folktales, cautionary tales and proverbs about sexuality, gender, and negative cultural scenarios (e.g. if you masturbate you have stunt growth; having sex in the middle of room, you give birth to imbeciles etc) and traditions influence and guide the sexual activities of individuals depending on one's cultural, religious and ideological background.

5.1.4 Relationships between knowledge of HIV/AIDS and sexual behavior age and level of education

The central aim of this item question was to find out whether or not knowledge of HIV/AIDS, age and level of education predicted sexual behaviours. Several observations were derived from the findings.

5.1.4.1 Relationship between knowledge of HIV/AIDS and sexual behaviour

The result indicates that there was a statistical significant relationship between students' knowledge of HIV/AIDS and Sexual behavior. Person $r(308) = +.85, p < .00$ (two tailed)². The r^2 was .73; thus, indicating about 73% of the variances in risky sexual behavior could be predicted from lack of knowledge of HIV/AIDS. The positive sign implies positive relationship, implying that students who had knowledge of HIV/AIDS tended not to take risky sexual behaviors, whereas those with limited knowledge of HIV/AIDS are most likely to engage in risky sexual behaviors/practices. Based on the analysis, it is safe to reject the Alternative hypothesis (H_1) in favor of the Null hypothesis (H_0) which posited that there was a significant relationship between students with hearing impairments' knowledge of HIV/AIDS and risky sexual relationships.

This finding demonstrates that students with HI engaged in sexual behaviours such as having unprotected sexual intercourse with partners, having multiple partners and washing their genital before and after sex with the knowledge that once they washed their genital they were not going to be infected with HIV/AIDS. They acted this ways because they had no or limited knowledge of HIV/ AIDS and how it is transmitted. In this case, their knowledge of HIV/AIDS predicted

their sexual behaviours. Had they accurate knowledge of HIV and its various ways of transmission, they would have probably behave differently. This also explained why some of the participants were careful and encouraged their partners to use contraceptives such as condoms. They persuaded their partner to engage in safe sexual practices because they had accurate knowledge of how HIV/AIDS transmitted. Therefore, it is safe to conclude that knowledge of HIV/AIDS predicts the sort of sexual behaviours people exhibit towards their sexual partners.

5.1.4.2 Relationship between knowledge of HIV/AIDSs, age and level of education

On the part relationship between students' age and level of education inheriting the level of students' knowledge of HIV/AIDSs, the study found no significant relationship. This implies that students' age and level of education cannot predict their knowledge level in HIV/AIDSs. The person's r results for age (-.017) and level of education (.079) showed negative relationship between them (age and level of education) since the two tailed significant levels, .765 and were greater than .05 (i.e. age, $p=.765$ and .164). Similarly, there was no significant relationship between knowledge of HIV/AIDSs, age and level of education. The person r result for age (i.e. -.058) and level of education (.111) and their level of significant were greater than .05, $p=.306$ and $p=.051$, respectively.

This finding is surprising in that as students with HI grow in age and in sexual relationship and acquire more education, it is expected that their knowledge base of HIV/AIDS should also increase to commensurate with their age and level of education. In this case, that did not happen. Their age and level of education did not increase their knowledge of HIV/AIDSs to assist them engage in safe sexual practices. With this increased in knowledge of HIV/AIDSs, they should

develop a capacity to identify acceptable and dangerous sexual behaviours, and to be able to avoid behaviours that put their lives at risk. In this case, since students' age and educational level could not enhance their knowledge of HIV/AIDs, they could not help in predicting their sexual behaviours.

Furthermore, the possible explanation might be that majority, of the participants were in basic 7(135=43.5%) and 8 (126=40.6%), which are equivalent to Junior high 1 and 2. At this stage, their level of education might not be strong enough to build their capacity to think as adults. In addition, because of their disability, they are in away excluded from certain activities and information, denying them vital societal information and social competencies. In this regard, Di Giulio (2003) argued that society often deny persons with disabilities the need for love, affection, and fulfilling relationships. As a result, they are denied social competency exemplified by opportunities to learn and explore their sexuality; information about socially acceptable ways of expression their sexuality; and effective sexual communication methods. In addition, persons with disabilities are frequently misinformed about sexuality to discourage them from participation in sexual relationships or activities (Di Giulio, 2003). All these factors can hinder adolescents and those with other disabilities cognitive development and their capacity to choose safe sexual practices.

5.1.4.2 Relationship between sexual behaviour age and level of education

The final bivarial correlation showed that there was a significant relationship between age of students with HI and their level of education in predicting sexual behaviours. Person's r value of .129 represents a positive correlation between age and level of education and significant at .05

(i.e. $p = .023$), that is, about 53 percent of the variances in risky sexual behavior could account for age and level of education of the participants. In other words, the results indicate that as students grow older and acquire more knowledge, they are likely to have increased knowledge of HIV/AIDS and tend not to involve in risky sexual behaviors.

Several observations could be derived from this finding. For example, in some few cases of the qualitative phase of the study, participants consistently and correctly referred to what their peer educator taught them. For example, in section 4.3.3.5, a participant said *“Our peer educator told us that the witches can kill people but cannot give us HIV/Aids. Me I don’t believe him. If they can kill through their medicine, they can also give you AIDs”*. Another student narrated:

To prevent ourselves from getting HIV/AIDS, one can quickly withdraw your penis and wash immediately after sex. As for mother to child, yes, our teacher told us that the baby can get it from the mother. That one nobody can prevent it from happening. The washing of genitals after sex and withdrawal can prevent HIV/AIDS because the sperm will not enter the woman.

These two statements capture the brief but intense nature of students with HI education on HIV/AIDS in school. Also, all these narratives give credence to the fact that the level of education and what they learned about HIV/AIDS in school through peer educators support them to choose safe sexual practices. As part of adolescents’ education and healthy future relationship, Feirings (2000) argued that early romantic relationship provides healthy structure and context for healthy future relationships. Similarly, Wyatt & Riederle, (1994) and Thornton, (1990) found that most early adolescents’ romantic relationships; romantic partnership and steady dating predicts sexual behavior often provide the context for sexual experimentation and may also exert pressure for sex.

In some cultures and tradition, superstitious are rife. Adolescents with HI including those without disabilities who come from such cultural backgrounds are more likely to hold onto such beliefs. In doing, adolescents with hearing impairments will behave and act according to what been internalized from cultural scenarios (Berger & Luckman, 2011; Gagnon, n: d Maticka-Tondale & the HP4RY Team, 2012).

5.1.5 Differences in Knowledge of HIV/AIDs by gender

Hypothesis was tested to find out whether or not there was a significant difference between HIV/AIDs knowledge of female and male students. Result showed that the difference in mean HIV/AIDs Knowledge score was found to be statistically significant, $t(308.00) = 12.51, p = .00$ ($p < 0.05$), two tailed. The mean HIV/AIDs Knowledge score for males ($M = 46.27, SD = 13.05$) was higher than that of males ($M=29.21, SD= 10. 18$).

Contrary to this finding, Kennedy et al. (2007) found that African American males are affected by HIV/STD-related health consequences. They were more likely to personally know someone with HIV/AIDS and STDs and who had died of AIDS than females. These findings strongly suggest that African American males are significantly impacted by the psychosocial and/or health-related consequences of HIV/STD-related infections and therefore should have more knowledge of HIV/AIDs than their female colleagues.

However, this finding is surprising because female students generally are expected to have more knowledge of HIV/AIDs than their colleagues male students. Several factors account for this argument. First, female students seem to have more exposure to sex education than male

students. For example, females often receive some sort of sex education immediately they start experiencing their menstruation. For instance, one of the female students explained:

The first time I heard of AIDs was when my elder sister realized that I was menstruating. She was surprised because of my age. I was thirteen by then. The first thing she did was to talk to me about how to protect myself. It was during this talk she mentioned AIDs. Of course, I heard of it in school, but I did not know that the disease was that dangerous. She told me to always use condom to protect myself against pregnancy and AIDs. Since then, I don't allow my boyfriends to do it without a condom. And he understands me better. That is why I love deaf partners because if hearing people have the sickness and they will never tell you.

This statement is not consistent with the test result which concluded male students had more knowledge of HIV/AIDs than female. Furthermore, Kennedy et al. (2007) found that female African American reported experiencing sexual events at relatively young ages than their males age peers. Feiring (2000) argued that female develop intimacy skills in relationship speed up faster than boys. For example, females are more likely than boys to report sharing feelings, acceptance, and understanding of each other sexuality. In the context of Ghana, males are highly likely than females to openly express or initiate sexual relationship. In this sense, females stand more chance than their male peers to have access to sex education and information on HIV/AIDs than their female age peers. This is because the females experience sexual events more than their male peers. Also, Feiring (2000) asserted that male do not show strong developmental increases in intimacy in same sex friend and they do not report reaching as high a level of disclosure as females.

5.1.6 Differences in sexual behavior/practices by gender

In addition to knowledge of HIV/AIDs, a t test was performed to determine whether significant difference exists between female and male students' sexual behaviours/practices. The t test result indicated that $F = 5.10$, $P = .02$ ($p < 0.05$) and $t(308.00) = 10.69$, $p = .00$ ($p < 0.05$), suggesting that the mean sexual behaviour differed significantly. Mean sexual behaviour for male group ($M = 39.15$, $SD = 11.11$) was higher than that of their female counterparts ($M = 26.37$, $SD = 9.45$).

This finding is not surprising because male students in the study appeared to place their lives at risk than their female friends. They reported engaged in many risky sexual practices such as unprotected sex, having multiple sexual partners and seemed not to worry much of the person they had sex with. For example, in the qualitative phase of the study, some of the male participants reported having multiple partners and preferred raw sex with their girlfriends to using condoms. For instance, a 17-year old male student said: *"I know AIDs is real. But I don't like using condom during sex because I derive more pleasure in having sex without a condom than when I don't use it. Every boy wants to get every drop of satisfaction from the girl friend"*. In general female students with HI were less likely to start a new sexual behaviour. Typical characteristics of those sexual behaviours multiple sexual partners; uncommitted sexual relationship or disloyalty; requesting raw sex etc were all initiated by male students with HI. For instance, a fifteen year old male students with a multiple sexual partners alleged: *"Asking her to do it without a condom and many other things won't make me lose my respect, but she cannot do that, she will feel shay to say don't use condom"*.

Kennedy et al. (2000) revealed that 10% (14) of their research participants (African American males) had their first sexual intercourse at the age of 9 years old or younger, 10%, (13); and 12% (16) at ages of 10 and 11 years old, and at 12 years old, respectively. In general, most of the male research participants males reportedly had their first sexual encounter before research 15 years of age. Consistent to Kennedy et al. (2007) findings, majority of the participants 154(49.7%) in this study had their first sexual experience when they were between 10 and 12 year old. Overall, this study found that male students with HI had engaged in risky sexual behaviors than their female counterparts.

5.7 Summary

In this chapter, background variables including age, educational level and age of first sexual encounter were discussed to provide a prelude for further discussion. Also, HIV/AIDS knowledge and sexual behaviours of students with HI were thrashed out. More light was shed on participants' phenomenological experiences, which complemented most of the qualitative results. In addition, more room was created to discuss the relationship between HIV/AIDS knowledge and sexual behaviours of students with hearing impairment. It was concluded that the sexual behaviours displayed by students with HI were predicted by their knowledge of HIV/AIDS. Similarly, significant differences between knowledge of HIV/AIDS; sexual behaviours of male and female students with HI were tested. In each of the cases, the result showed that male students with HI had more knowledge of HIV/AIDS than their female age peers. The male students were also more likely than female students to engage in risky sexual behaviours.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This sequential explanatory research project represents an initial step in understanding adolescents with hearing impairments (HI) knowledge of HIV/AIDs and sexual behaviours. It was set out with five central objectives and research questions. The first objective was aimed at finding out HIV/AIDs knowledge level of adolescents with HI and their opinion/views of HIV/AIDs infection. Secondly, the study was aimed at finding out sexual behaviours that place adolescents with HI at risk of contracting HIV/AIDs and the strategies they employ to guard themselves against HIV/AIDs infection. Thirdly, the study sought to phenomenological experiences of students with HI about their partners' sexual activities. Finally, it was also aim to find out whether or not female and male students' knowledge of HIV/AIDs and sexual behaviour differed significantly. The conclusions of the study are presented based on the research question.

6.1 Research question one

The research question one (What knowledge do students have about HIV/AIDs and how do they use their knowledge to guard themselves against HIV/AIDs infection?) sought to find out HIV/AIDs knowledge of students with HI. The HIV/AIDs knowledge of students with HI was measured using a self constructed HIV/AID Knowledge Scale (HAK scale), which was scored and interpreted as follows: 1= Strongly Agree; 2 = Agree; 3 = Neutral; 4 = Disagree; and 5 = Strongly Disagree. Results of the investigation showed that the HIV/AIDs knowledge of students with HI was limited since their composite mean score was less than 3 on a 5-point rating scale. To support these findings, qualitative phase of the study also revealed similar finding.

Therefore, the conclusion is that students with HI in this particular study had no or limited knowledge of HIV/AIDs, mode of transmission and preventive strategies.

6.2 Research question two

The central objective of research question two (What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDs? And how do they guard themselves against HIV/AIDs infection?) was to find out sexual behaviours that place students with HI at risk of HIV/AIDs infection. The mean composite scores of students' sexual behaviours determined based on a 3-point rating scale (SB), where: 1 = Always; 2 = Sometimes; and 3 = Not at all. The results showed that the mean composite scores of students' sexual behaviours was 2.3. Since the composite mean score was less than 3 on a 3-rating scale, it implied that students with HI, in this regard, sometimes engaged in risky sexual behaviors. The qualitative study revealed that most students with HI had preferred raw sexual intercourse to using condoms; some had multiple sexual partners; unprotected sex and some had narrated having sex with partners with multiple sex partners. The conclusion is that students with HI who engaged in unprotected sexual activities; sex with partners with multiple sex partners; sexual intercourse without the use of condoms are more likely to contract HIV/AIDs infection.

6.3 Research question three

The phenomenological experience of students with HI was aimed at meanings and importance students attached to their partners' sexual behaviours. In this way, more sexual behaviours of students with HI were intended to be discovered. The study revealed that some students were engaged in unprotected sexual intercourse and sex with multiple partners. Another important discovery was that some students said their sexual partners felt shy or embarrassed to buy as well

as use condom during sexual intercourse. Those who built confidence and were willing to use condom expressed dissatisfaction when condom was used. Others encountered formidable challenges in inserting condom. In addition, students with HI considered condom use as a sign of infidelity/promiscuity.

In addition, they also used several strategies to protect themselves against HIV/AIDs. Some said they they practice total abstinence from sex or sex with only virgins. Others said they washed their genitals before and after every sexual encounter, as well avoidance of high-risk sexual activities/relationship. While some said they persuaded their sexual partners to use condom, others were applied traditional medicine. Finally some agreed to have a reduced frequency of sexual intercourse with strangers.

6.4 Research question four

Research question four (Are there relationships between adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour/practices, age and level of education?) was aimed at determining whether or not there was a significant relationship between sexual behaviours and HIV/AIDs knowledge of students with HI.

The result showed that there was a statistical significant relationship between students' knowledge of HIV/AIDs and Sexual behavior. Person $r(308) = +.85, p < .00$ (two tailed)². The r^2 was .73; thus, indicating about 73% of the variances in sexual behavior could be predicted from lack of knowledge of HIV/AIDs. Therefore, it is safe to reject the Alternative hypothesis (H_1) in favor of the Null hypothesis (H_0) which posited that there was a significant relationship between students with hearing impairments' knowledge of HIV/AIDs and risky sexual relationships.

The result also showed that there was no significant relationship between students' knowledge, age and level of education. The person's r for age (-.017) and level of education (.079) showed negative relationships at significant levels of .765 and were greater than .05 (i.e. age, $p = .765$ and .164). Similarly, relationship between sexual behavior age and level of education was not significant since person r result for age (i.e. -.058) and level of education (.111) and their level of significant were greater than .05, $p = .306$ and $p = .051$ respectively.

The result of the study showed that there was a significant relationship between age and educational levels of students with HI. The result showed a Person's r value of .129 representing a positive correlation between age and level of education and significant at .05 (i.e. $p = .023$), accounting for about 53 percent of the variances in sexual behavior could account for age and level of education of students with HI. This question further required that hypotheses was tested:

Result of hypothesis 1:

H_0 : There is a significant relationship between adolescents with hearing impairments' Knowledge of HIV/AIDs and their sexual behavior, age and level of education.

Based on the above analysis, it is safe to reject the Null hypothesis (H_0) in favor of the alternative hypothesis (H_1), which asserted that there was no significant relationship between students' knowledge of HIV/AIDs, age and level of education.

6.5 Research question five

Research question five (Do adolescents with hearing impairments' knowledge of HIV/AIDSs and their sexual behavior differ significantly due to their gender?) sought to determine the extent at which HIV/AIDSs knowledge and sexual behaviours of students with HI differed.

Result of hypothesis 2:

H₀ Female adolescents with hearing impairments have more knowledge of HIV/AIDSs than their male colleagues.

Result of the study showed that difference in mean HIV/AIDSs Knowledge score was found to be statistically significant, $t(308.00) = 12.51, p = .00 (p < 0.05)$, two tailed. The mean HIV/AIDSs Knowledge score for female (M=29.21, SD= 10. 18) was higher than that of males (M = 46.27, SD = 13.05). Based on the above analysis, the alternative hypothesis (H₁) hypothesis 2, which claimed that there was no significant difference between male and female students' knowledge of HIV/AIDSs, was rejected in favor of the Null hypothesis (H₀), which asserted that there was a significant difference between male and female students' knowledge of HIV/AIDSs.

Result of hypothesis 3:

H₀ Male adolescents with hearing impairments more likely to engage in risky sexual behaviors than their female colleagues.

Result of the investigation found that mean sexual behavior differed significantly, $t(308.00) = 10.69, p = .00 (p < 0.05)$, two tailed. Mean sexual behavior for male group (M = 39.15, SD =11.11) was higher than that of their female counterparts was (M = 26.37, SD = 9.45). Therefore,

we can reject the Alternative (H_1) in favor of the Null hypothesis (H_0) and conclude that a statistically significant difference exists between male and females' risky sexual behaviors.

6.6 Recommendations

The findings from this study have serious implication to children with disabilities and the Ghana as a country. In particular, adolescent with hearing impairment are more vulnerability to HIV/AIDS infection since majority of hegemonic culture (the hearing) do not understand sign language. It is, therefore, imperative that special education department of Ghana education service, parents, the Government to consider implementing the following recommendations in their educational institutions, policy planning and homes in order to support adolescent with hearing impairment from acquiring HIV/AIDS virus. The recommendations should include national, family, school level programming and intervention:

Policy level programming and intervention

At the policy level, since Ghana is already a signatory to numerous rights and conventions, it is appropriate to:

- Ratify all of the international legal instruments including the CRPD to which she is a signatory, and pass them into law.
- Include issues of disabilities as part of national HIV Strategic Plans (NSPs)
- Provide persons with disabilities with the same range, quality, standard and free health care
- Provide affordable healthcare programmes in area of sexual and reproductive health and population-based programmes.

- Recognise persons with disabilities are subject to multiple levels of exclusion from HIV/AIDS education, and shall take measures to ensure that they are afforded the opportunity.
- Ensure representation of PWD, including HI, in Ghana AIDS Commission to infuse disability issues into policy design, implementation and evaluation at all levels.
- Develop age and culture sensitive, tailored sexuality and HIV/AIDS education for persons with diverse types of disability, including HI, in Ghanaian schools.
- Develop programmes and specialised legal support for the prevention of sexual abuse of girls with HI.
- Train and support teachers of learners with disability on how to provide sexuality and HIV/AIDS prevention education in appropriate formats to learners with diverse kinds of disability, including the hearing impaired.
- Develop policies and programmes that support collaboration between stakeholders – parents, teachers, educational authorities/administrators and the community – involved with learners with HI.

Family Level intervention

At the family level, parents, siblings and the immediate family members and all those who matter to children with hearing impairments in the community should:

- Ensure that they provide adequate information to adolescents with hearing impairment in their families and communities. This will help fill the HIV/AIDS information gap between the hegemonic culture (the hearing) and the persons with hearing impairment.

- Promote strong community mobilization to support families with HI in appropriate ways. For example, provide families with concrete information materials on HIV/AIDs, refer families to resources centers where children with hearing impairment can receive support on HIV/AIDs.
- Coordinate community support efforts to target families as a whole, while recognizing the specific needs of members with special needs regarding HIV/AIDS Education.
- Expand community home-based capacity building among community health workers in information dissemination.
- Support families and children with hearing impairment to evaluate how families their perceptions and attitudes towards HIV/AIDs. This will encourage them to test for their HIV/AIDs test to know their status.
- Assist individuals and families with HI to start and sustain income generation projects, e.g., crop sharing, livestock sharing, land sharing, petty trading, hawking and food through intervention like Livelihood Empowerment Against Poverty (LEAP)

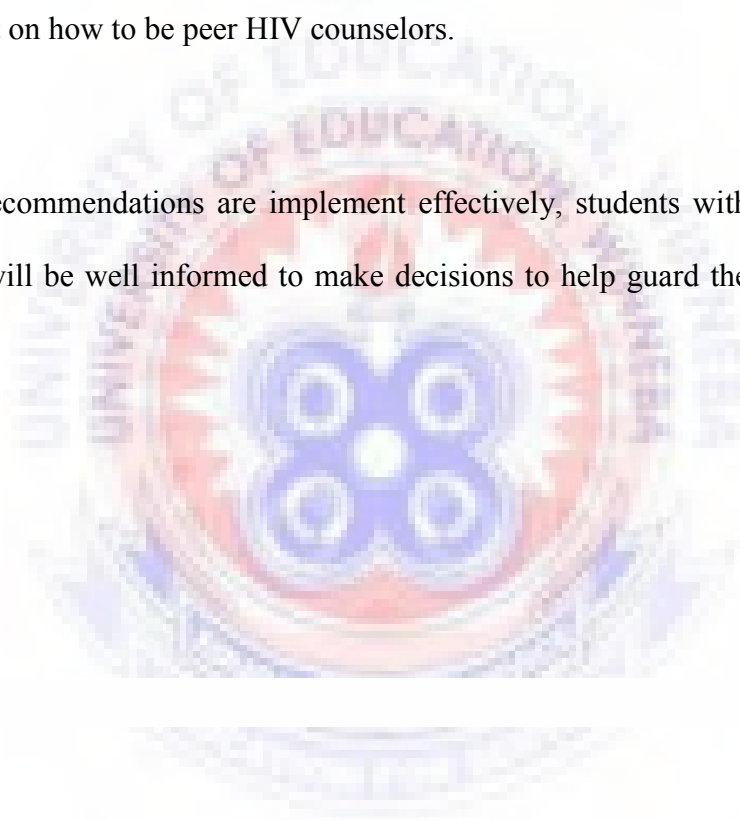
School level programming and intervention

Curriculum designers should include appropriate HIV/AIDS education programmes in their planning and programming. This will help meet the needs of students with hearing impairment students should consider the following. Specifically, curriculum designers and teachers at the classroom level should:

- Take care of the difficulties faced by hearing impaired students regarding prints/text, instructional methods must utilize explicit media e.g. interactive instructional strategies like role-play, pictures, slides, and video.

- educators should not be judgmental during interactions and must assure students of confidentiality
- Educators should build on Learners' existing sexuality knowledge to identify misconceptions, fears, values and concerns and address them.
- Using Simple, short, clear, and concrete language to enhance understanding and recall.
- Provide peer HIV/AIDS educators, training and support to persons with hearing impairment on how to be peer HIV counselors.

Once the above recommendations are implemented effectively, students with HI and those with other disabilities will be well informed to make decisions to help guard them against HIV/AIDS infection.



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Appendices

Appendix A 1: Pilot test reliability test for the knowledge scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.937	20

Appendix A 2: Item-Total Statistics for the knowledge scale

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Homosaidshiv	56.3182	380.037	.528	.935
Aidshivfromwitches	56.0909	388.753	.416	.937
Havinghivnoaids	56.0000	372.000	.680	.933
Hivinfection1sex	55.7273	374.398	.621	.934
Phivnottuntilaids	55.8182	374.727	.599	.934
Upsexcontractshiv	56.0455	362.522	.764	.931
Hivnotc2ruas	56.2727	358.779	.879	.929
Hivt2ruvaginalsex	56.1818	374.156	.597	.934
Hivt2rusaliva	55.6818	366.323	.761	.931
Hivc2rutowelorcup	55.9091	371.610	.579	.935
Bloodt	55.7273	369.636	.691	.932
Pregwthivtob	56.4091	385.777	.505	.935
Hivt2rum	55.7727	374.660	.608	.934
Coughnsneezdontshiv	55.1364	376.695	.596	.934
Glassofwthiv	56.0455	375.665	.608	.934
Coitusphiv	56.1818	375.013	.639	.933
Analshiv	55.5909	374.348	.624	.934
Allpregthivtob	55.6364	376.909	.663	.933
Sngenwash	55.7727	370.946	.742	.932
Dkissing	56.0909	381.420	.501	.936

Appendix A 3: Pilot test reliability test for test of the attitude scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.757	9

Appendix A 4: Item-Total Statistics for the knowledge scale

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbac h's Alpha if Item Deleted
Condomwonder	22.1000	34.937	.395	.743
Testdiscri	21.2500	35.566	.510	.724
Condomnotn	22.3000	34.747	.418	.738
Testresults	22.3500	38.134	.332	.749
Hivaidsmeeting	22.4000	34.674	.482	.727
Condomcare	22.5000	33.947	.497	.724
Condomsaround	21.7500	35.461	.467	.730
Toilet f	22.0500	36.261	.362	.747
Tmedicinewaste	21.7000	37.589	.530	.729

Appendix A 5: pilot test Reliability test of the behavior scale

Reliability Statistics

Cronbach's Alpha	N of Items
.780	5

Appendix A 6: pilot test Item-Total Statistics

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach' s Alpha if Item Deleted
Hivtest	7.3000	4.747	.753	.678
Msexp	7.1500	5.082	.470	.769
Hivaidsworkshops	7.5000	5.105	.608	.724
Riskysp	7.3500	5.187	.464	.770
Hivnegativep	7.3000	4.853	.526	.751

Appendix A 7: pilot test Factor analysis for Knowledge scale

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.235
Bartlett's Test of Sphericity	Approx. Chi-Square	458.557
	df	190
	Sig.	.000

Appendix A 6a: pilot test Factor analysis for Knowledge scale

Communalities

	Initial	Extraction
Homosaidshiv	1.000	.514
Aidshivfromwitches	1.000	.720
Havinghivnoaids	1.000	.790
Hivinfection1sex	1.000	.772
Phivnottuntilaids	1.000	.772
Upsexcontractshiv	1.000	.911
Hivnote2ruas	1.000	.840
Hivt2ruvaginalsex	1.000	.687
Hivt2rusaliva	1.000	.839
Hivc2rutowelorcup	1.000	.763
Bloodt	1.000	.688
Pregwthivtob	1.000	.754
Hivt2rum	1.000	.743
Coughnsneezdontshiv	1.000	.806
Glassofwthiv	1.000	.603
Coitusphiv	1.000	.705
Analshiv	1.000	.817
Allpregthivtob	1.000	.827
Sngenwash	1.000	.804
Dkissing	1.000	.645

Extraction Method: Principal Component Analysis.

Appendix A 6b: pilot test Factor analysis for Knowledge scale Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues	Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings ^a
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	Total	% of Variance	Cumulati ve %	Total	% of Variance	Cumulati ve %	Total
1	9.243	46.217	46.217	9.243	46.217	46.217	6.159
2	1.889	9.444	55.661	1.889	9.444	55.661	4.107
3	1.536	7.678	63.339	1.536	7.678	63.339	6.334
4	1.242	6.212	69.551	1.242	6.212	69.551	4.553
5	1.088	5.439	74.990	1.088	5.439	74.990	1.367
6	.941	4.705	79.694				
7	.797	3.987	83.682				
8	.734	3.671	87.353				
9	.683	3.416	90.769				
10	.481	2.403	93.172				
11	.405	2.024	95.196				
12	.322	1.610	96.806				
13	.216	1.082	97.888				
14	.169	.846	98.734				
15	.130	.648	99.382				
16	.079	.393	99.775				
17	.038	.192	99.967				
18	.006	.029	99.996				
19	.001	.004	100.000				
20	3.325E- 005	.000	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix A 6c: pilot test Factor analysis for Knowledge scale component matrix

	Component Matrix ^a				
	1	2	3	4	5
Homosaidshiv	.567	.114	.156	.383	.093
Aidshivfromwitches	.448	.510	.236	-.228	.389
Havinghivnoaids	.725	.092	-.322	.266	.286
Hivinfection1sex	.662	-.262	.309	-.168	.376
Phivnottuntilaids	.644	.451	-.190	-.315	-.138
Upsexcontractshiv	.813	-.210	-.448	-.069	.011
Hivnote2ruas	.903	-.033	-.026	-.103	-.108

Hivt2ruvaginalsex	.634	-.045	.415	-.278	-.185
Hivt2rusaliva	.810	-.064	-.361	.011	-.219
Hivc2rutowelorcup	.618	.560	.113	-.230	.034
Bloodt	.727	-.096	.277	.176	-.207
Pregwthivtob	.550	.279	-.064	.589	-.148
Hivt2rum	.664	-.404	-.317	-.017	.194
Coughnsneezdontshiv	.622	.358	.442	.303	.064
Glassofwthiv	.657	-.234	.242	-.211	-.119
Coitusphiv	.685	-.465	.082	-.106	-.043
Analshiv	.673	-.355	.332	.069	-.352
Allpregthivtob	.711	.334	-.302	.042	-.342
Sngenwash	.782	.060	-.237	-.261	.255
Dkissing	.546	-.281	.067	.317	.403

Extraction Method: Principal Component Analysis.

a. 5 components extracted.



Appendix A 6d: pilot test Factor analysis for Knowledge scale patter matrix

Pattern Matrix^a

	Component				
	1	2	3	4	5
Homosaidshiv	.118	.106	-.041	.588	.160
Aidshivfromwitches	-.055	.851	.050	.057	.143
Havinghivnoaids	-.218	.183	-.642	.435	.150
Hivinfection1sex	.451	.317	-.204	-.081	.489
Phivnottuntilaids	.092	.547	-.349	.008	-.428
Upsexcontractshiv	.139	-.006	-.877	.031	-.064
Hivnote2ruas	.468	.197	-.436	.140	-.105
Hivt2ruvaginalsex	.769	.270	.099	-.058	-.056
Hivt2rusaliva	.239	-.037	-.680	.193	-.271
Hivc2rutowelorcup	.114	.728	-.043	.141	-.213
Bloodt	.610	-.022	-.020	.394	-.005
Pregwthivtob	-.045	-.054	-.104	.847	-.139
Hivt2rum	.141	-.093	-.781	-.028	.222
Coughnsneezdontshiv	.265	.388	.278	.641	.112
Glassofwthiv	.691	.097	-.142	-.075	.034
Coitusphiv	.625	-.117	-.382	-.066	.162

Analsthiv	.871	-.230	-.002	.202	-.023
Allpregthivtob	.108	.165	-.421	.353	-.513
Sngenwash	.059	.452	-.666	-.078	.057
Dkissing	.077	-.019	-.324	.339	.540

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 20 iterations.

Appendix A 6e: pilot test Factor analysis for Knowledge scale structure matrix

Structure Matrix

	Component				
	1	2	3	4	5
Homosaidshiv	.375	.319	-.321	.672	.170
Aidshivfromwitches	.212	.833	-.165	.274	.100
Havinghivnoaids	.267	.400	-.746	.632	.147
Hivinfection1sex	.652	.459	-.466	.230	.525
Phivnottuntilaids	.367	.682	-.512	.315	-.430
Upsexcontractshiv	.516	.268	-.943	.369	-.018
Hivnotc2ruas	.749	.492	-.728	.498	-.053
Hivt2ruvaginalsex	.784	.461	-.275	.242	.001
Hivt2rusaliva	.555	.273	-.827	.487	-.222
Hivc2rutowelorcup	.377	.824	-.314	.408	-.231
Bloodt	.741	.282	-.406	.595	.055
Pregwthivtob	.249	.215	-.350	.851	-.134
Hivt2rum	.458	.127	-.816	.253	.268
Coughnsneezdontshiv	.484	.583	-.151	.750	.112
Glassofwthiv	.759	.316	-.436	.228	.100
Coitusshiv	.747	.140	-.603	.233	.240
Analsthiv	.867	.092	-.382	.420	.069
Allpregthivtob	.405	.429	-.608	.577	-.494
Sngenwash	.458	.611	-.780	.297	.068
Dkissing	.372	.163	-.486	.469	.561

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix A 6f: pilot test Factor analysis for Knowledge scale component correlation matrix

Component Correlation Matrix

Component	1	2	3	4	5
1	1.000	.300	-.426	.328	.094

2	.300	1.000	-.251	.295	-.042
3	-.426	-.251	1.000	-.335	-.037
4	.328	.295	-.335	1.000	.003
5	.094	-.042	-.037	.003	1.000

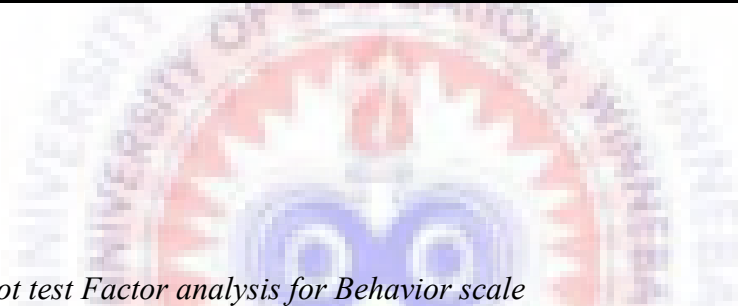
Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix A 7: pilot test Factor analysis for Behavior scale

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.597
	Approx. Chi-Square	35.459
Bartlett's Test of Sphericity	df	15
	Sig.	.002



Appendix A 7a: pilot test Factor analysis for Behavior scale

Communalities

	Initial	Extraction
	1	
Hivtest	1.000	.821
Msexp	1.000	.564
Hivaidsworkshops	1.000	.740
Riskysp	1.000	.607
Hivnegativep	1.000	.513
Talkwsp	1.000	.719

Extraction Method: Principal Component Analysis.

Appendix A 7b: pilot test Factor analysis for Behavior scale total variance explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	2.780	46.334	46.334	2.780	46.334	46.334	2.571
2	1.183	19.717	66.051	1.183	19.717	66.051	1.661
3	.819	13.644	79.695				
4	.704	11.726	91.421				
5	.343	5.719	97.140				
6	.172	2.860	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix B

Appendix B 1: confirmatory reliability test knowledge scale

Reliability Statistics

Cronbach's Alpha	N of Items
.822	14

Appendix B 2: confirmatory reliability test knowledge scale

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
people can acquire HIV and AIDS from being bewitched	35.2817	116.466	.388	.815
people who are HIV positive cannot transmit the virus until they have AIDS	35.1786	113.733	.417	.813

having unprotected sex with several people makes a person susceptible to contracting HIV	35.3730	119.095	.290	.821
HIV cannot be contracted through anal sex	35.5556	113.571	.437	.811
HIV can be transmitted through saliva of a person who is HIV positive	35.3373	112.487	.485	.808
a person can get HIV by sharing a towel or cup with someone who has HIV	35.3413	112.146	.498	.807
blood transfusion is unsafe because of the risk of contracting HIV	35.4286	114.381	.434	.812
coughing and sneezing do not spread HIV	35.3770	114.507	.427	.812
sharing a glass of water with someone with HIV can transmit the disease	35.4048	114.210	.451	.810
withdrawal prevents a woman from contracting HIV during sex	35.3254	113.471	.460	.810
a man can get HIV having anal sex with a man	35.5000	112.570	.508	.806
all infected pregnant women will have their babies born HIV positive	35.5317	111.836	.516	.806
showering and washing your genitals after sex can reduce the chances of being infected	35.6151	113.178	.506	.807
people are likely to contract HIV by deep kissing if their partners are HIVpositive	35.5556	113.746	.465	.809

Appendix B 2: confirmatory factor analysis

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.839
Bartlett's Test of Sphericity	651.5
Approx. Chi-Square	65

Appendix B 2a: Confirmatory factor analysis Communalities

Communalities		Extraction
		n
people can acquire HIV and AIDS from being bewitched	1.000	.470
people who are HIV positive cannot transmit the virus until they have AIDS	1.000	.457
having unprotected sex with several people makes a person susceptible to contracting HIV	1.000	.524
HIV cannot be contracted through anal sex	1.000	.326
HIV can be transmitted through saliva of a person who is HIV positive	1.000	.584
a person can get HIV by sharing a towel or cup with someone who has HIV	1.000	.458
blood transfusion is unsafe because of the risk of contracting HIV	1.000	.584
coughing and sneezing do not spread HIV	1.000	.302
sharing a glass of water with someone with HIV can transmit the disease	1.000	.292
withdrawal prevents a woman from contracting HIV during sex	1.000	.411
a man can get HIV having anal sex with a man	1.000	.385
all infected pregnant women will have their babies born HIV positive	1.000	.428
showering and washing your genitals after sex can reduce the chances of being	1.000	.577
a person can become infected with HIV during one sexual contact	1.000	.627

Extraction Method: Principal Component Analysis.

Appendix B 2c: Confirmatory factor analysis total variance explained

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.962	28.298	28.298	3.962	28.298	28.298	3.207
2							

2	1.438	10.273	38.570	1.438	10.273	38.570	1.535
3	1.026	7.330	45.901	1.026	7.330	45.901	3.051
4	.988	7.055	52.955				
5	.893	6.377	59.332				
6	.831	5.933	65.265				
7	.811	5.790	71.055				
8	.706	5.044	76.099				
9	.648	4.629	80.728				
10	.612	4.372	85.100				
11	.578	4.129	89.229				
12	.573	4.091	93.319				
13	.517	3.692	97.011				
14	.418	2.989	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix B 2d: Confirmatory factor analysis Component Matrix

Component Matrix^a

	Component		
	1	2	3
all infected pregnant women will have their babies born HIV positive	.619	.205	-.053
a man can get HIV having anal sex with a man	.615	-.082	-.005
a person can get HIV by sharing a towel or cup with someone who has HIV	.606	-.014	.300
showering and washing your genitals after sex can reduce the chances of being	.596	.305	-.360
HIV can be transmitted through saliva of a person who is HIV positive	.594	-.077	.475
HIV cannot be contracted through anal sex	.554	-.077	-.117
withdrawal prevents a woman from contracting HIV during sex	.542	-.291	-.180
people who are HIV positive cannot transmit the virus until they have AIDS	.542	-.404	.011
sharing a glass of water with someone with HIV can transmit the disease	.531	-.029	.098
coughing and sneezing do not spread HIV	.523	.066	-.157
people can acquire HIV and AIDS from being bewitched	.482	-.309	.378

a person can become infected with HIV during one sexual contact	.160	.748	.204
having unprotected sex with several people makes a person susceptible to contracting HIV	.357	.613	.143
blood transfusion is unsafe because of the risk of contracting HIV	.539	.012	-.542

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Appendix B 2e: Confirmatory factor analysis Pattern Matrix

Pattern Matrix^a

	Component		
	1	2	3
blood transfusion is unsafe because of the risk of contracting HIV	.837	-.084	-.199
showering and washing your genitals after sex can reduce the chances of being	.727	.258	-.105
coughing and sneezing do not spread HIV	.469	.082	.122
withdrawal prevents a woman from contracting HIV during sex	.468	-.261	.238
all infected pregnant women will have their babies born HIV positive	.443	.258	.220
HIV cannot be contracted through anal sex	.436	-.037	.226
a man can get HIV having anal sex with a man	.367	-.001	.363
a person can become infected with HIV during one sexual contact	-.025	.794	.010
having unprotected sex with several people makes a person susceptible to contracting HIV	.139	.672	.110
HIV can be transmitted through saliva of a person who is HIV positive	-.098	.146	.784
people can acquire HIV and AIDS from being bewitched	-.097	-.118	.716
a person can get HIV by sharing a towel or cup with someone who has HIV	.080	.155	.611
people who are HIV positive cannot transmit the virus until they have AIDS	.277	-.312	.450
sharing a glass of water with someone with HIV can transmit the disease	.225	.070	.391

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 15 iterations.

Appendix B 2f: Confirmatory factor analysis Structure

	Structure Matrix		
	Component		
	1	2	3
blood transfusion is unsafe because of the risk of contracting HIV	.739	.001	.171
showering and washing your genitals after sex can reduce the chances of being	.709	.334	.230
all infected pregnant women will have their babies born HIV positive	.570	.316	.429
withdrawal prevents a woman from contracting HIV during sex	.545	-.200	.436
coughing and sneezing do not spread HIV	.533	.139	.335
HIV cannot be contracted through anal sex	.532	.020	.419
a man can get HIV having anal sex with a man	.529	.055	.527
a person can become infected with HIV during one sexual contact	.068	.791	.032
having unprotected sex with several people makes a person susceptible to contracting HIV	.263	.692	.201
HIV can be transmitted through saliva of a person who is HIV positive	.268	.168	.746
people can acquire HIV and AIDS from being bewitched	.210	-.099	.668
a person can get HIV by sharing a towel or cup with someone who has HIV	.370	.189	.653
people who are HIV positive cannot transmit the virus until they have AIDS	.443	-.263	.561
sharing a glass of water with someone with HIV can transmit the disease	.407	.111	.494

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix B 2f: Confirmatory factor component correlation matrix

Component Correlation Matrix			
Component	1	2	3
1	1.000	.111	.447
2	.111	1.000	.042

3 .447 .042 1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix B 3a: Reliability for sexual behavior scale

Reliability Statistics

Cronbach's Alpha	N of Items
.812	12

Appendix B 3b: Reliability for sexual behavior scale Item-Total Statistics

Item-Total Statistics

	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Deleted
i usually attend HIV/AIDS meetings, work	30.1932	89.069	.494	.795
i avoid risky sexual partners	29.9735	92.361	.359	.807
if i do HIV test, people will discriminate me if they found that i am HIV positive	30.0303	87.961	.531	.791
my partner and i will not use a condom once we agree not to have sex with anyone	30.3144	88.855	.491	.795
when i test for HIV/AIDS my results will be known to my colleagues	30.2045	88.179	.538	.791
i like attending HIV/AIDS meetings, workshops and seminars	30.2955	88.863	.499	.794
using a condom shows my partner that i care about him/her	30.5379	95.238	.292	.812
i can have many sexual partners once i use a condom	30.1970	91.033	.444	.799
i can use the same toilet facility with the HIV positive people	29.9811	91.403	.441	.800
i believe western medicine has a cure for AIDS	30.1515	88.981	.489	.795
i believe traditional medicine has a cure for AIDS	30.1742	88.624	.513	.793

having sex with a virgin can cure you of AIDS	30.1553	91.021	.424	.801
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Appendix B 4: Factor analysis sexual behavior scale KMO and Bartlett's Test

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.843
Approx. Chi-Square	672.494
Bartlett's Test of Sphericity	df
	66
	Sig.
	.000

Appendix B 4a: Factor analysis sexual behavior scale Communalities

Communalities	Initial	Extraction
i usually attend HIV/AIDS meetings, work	1.000	.575
i avoid risky sexual partners	1.000	.544
if i do HIV test, people will discriminate me if they found that i am HIV positive	1.000	.529
my partner and i will not use a condom once we agree not to have sex with anyone	1.000	.537
when i test for HIV/AIDS my results will be known to my colleagues	1.000	.651
i like attending HIV/AIDS meetings, workshops and seminars	1.000	.418
using a condom shows my partner that i care about him/her	1.000	.601
i can have many sexual partners once i use a condom	1.000	.529
i can use the same toilet facility with the HIV positive people	1.000	.455
i believe western medicine has a cure for AIDS	1.000	.428
i believe traditional medicine has a cure for AIDS	1.000	.457
having sex with a virgin can cure you of AIDS	1.000	.330

Extraction Method: Principal Component Analysis.

Appendix B 4a: Factor analysis sexual behavior scale Total Variance Explained

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.958	32.980	32.980	3.958	32.980	32.980	3.343
2	1.090	9.087	42.067	1.090	9.087	42.067	2.389
3	1.006	8.382	50.449	1.006	8.382	50.449	2.088
4	.931	7.762	58.211				
5	.880	7.333	65.544				
6	.818	6.821	72.364				
7	.717	5.972	78.336				
8	.619	5.158	83.494				
9	.581	4.845	88.339				
10	.534	4.452	92.791				
11	.486	4.049	96.840				
12	.379	3.160	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix B 4b: Factor analysis sexual behavior scale Component Matrix

	Component Matrix ^a		
	Component 1	Component 2	Component 3
i usually attend HIV/AIDS meetings, work	.612	-.439	-.085

i avoid risky sexual partners	.457	.578	.017
if i do HIV test,people will discriminate me if they found that i am HIV positive	.646	.334	-.018
my partner and iwill not use a condom once we agree not to have sex with anyone	.600	-.173	.384
when i test for HIV/AIDS my results will be known to my colleagues	.664	-.303	-.344
i like attending HIV/AIDS meetings, workshops and seminars	.611	-.211	-.021
using a condom shows my partner that i care about him/her	.378	-.203	.646
i can have many sexual partners once i use a condoms	.549	.476	.042
i can use the same toilet facility with the HIV positive people	.548	.069	.387
i believe western medicine has a cure for AIDS	.600	-.086	-.248
i believe traditional medicine has a cure for AIDS	.630	.020	-.244
having sex with a virgin can cure you of AIDS	.531	.074	-.206

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Appendix B 4c: Factor analysis sexual behavior scale Pattern Matrix

Pattern Matrix^a

	Component		
	1	2	3
i usually attend HIV/AIDS meetings, work	.720	-.229	.209
i avoid risky sexual partners	-.068	.758	.012
if i do HIV test,people will discriminate me if they found that i am HIV positive	.226	.576	.094
my partner and iwill not use a condom once we agree not to have sex with anyone	.218	.059	.607
when i test for HIV/AIDS my results will be known to my colleagues	.855	-.082	-.067
i like attending HIV/AIDS meetings, workshops and seminars	.536	.006	.216
using a condom shows my partner that i care about him/her	-.093	-.042	.809
i can have many sexual partners once i use a condoms	.035	.688	.090
i can use the same toilet facility with the HIV positive people	.036	.286	.535
i believe western medicine has a cure for AIDS	.614	.120	-.044

i believe traditional medicine has a cure for AIDS	.566	.240	-.057
having sex with a virgin can cure you of AIDS	.443	.260	-.062

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Appendix B 4d: Factor analysis sexual behavior scale Structure Matrix

Structure Matrix

	Component		
	1	2	3
i usually attend HIV/AIDS meetings, work	.706	.089	.414
i avoid risky sexual partners	.225	.735	.146
if i do HIV test, people will discriminate me if they found that i am HIV positive	.479	.682	.293
my partner and i will not use a condom once we agree not to have sex with anyone	.453	.268	.696
when i test for HIV/AIDS my results will be known to my colleagues	.800	.230	.215
i like attending HIV/AIDS meetings, workshops and seminars	.614	.256	.405
using a condom shows my partner that i care about him/her	.174	.091	.768
i can have many sexual partners once i use a condoms	.329	.720	.245
i can use the same toilet facility with the HIV positive people	.333	.412	.607
i believe western medicine has a cure for AIDS	.644	.345	.196
i believe traditional medicine has a cure for AIDS	.638	.444	.191
having sex with a virgin can cure you of AIDS	.521	.416	.147

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix B 4e: Factor analysis sexual behavior scale Structure Matrix

Component Correlation Matrix

Component	1	2	3
1	1.000	.381	.350
2	.381	1.000	.208
3	.350	.208	1.000

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.

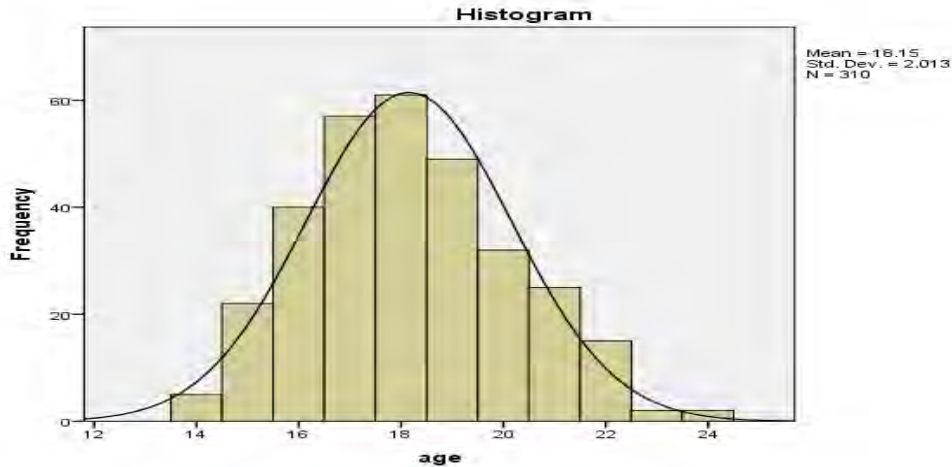
Appendix C: data cleaning

Appendix C1a: Age distribution, explore procedure

Statistics

age		
N	Valid	310
	Missing	0
Mean		18.15
Median		18.00
Mode		18
Std. Deviation		2.013
Variance		4.051
Skewness		.304
Std. Error of Skewness		.138
Kurtosis		-.337
Std. Error of Kurtosis		.276
Range		10
Minimum		14
Maximum		24
Percentiles	25	17.00
	50	18.00
	75	19.00

Appendix C1b: Age distribution Histogram



Appendix C2a: Gender distribution Descriptives

Descriptives

		gender	Statistic	Std. Error
		Mean	18.34	.160
		95% Confidence Interval for Mean	Lower Bound: 18.02 Upper Bound: 18.65	
		5% Trimmed Mean	18.30	
		Median	18.00	
		Variance	4.521	
	male	Std. Deviation	2.126	
		Minimum	14	
		Maximum	24	
		Range	10	
		Interquartile Range	3	
	age	Skewness	.300	.183
		Kurtosis	-.399	.364
		Mean	17.91	.158
		95% Confidence Interval for Mean	Lower Bound: 17.60 Upper Bound: 18.22	
		5% Trimmed Mean	17.88	
	fema	Median	18.00	
	le	Variance	3.360	
		Std. Deviation	1.833	
		Minimum	14	
		Maximum	22	
		Range	8	

Interquartile Range	2	
Skewness	.186	.209
Kurtosis	-.502	.416

Appendix C2b: Gender distribution Percentiles

		Percentiles						
	gender	5	10	25	50	75	90	95
Weighted Average(Definition 1)	male	15.0	16.0	17.0	18.0	20.0	21.0	22.0
	female	15.0	16.0	17.0	18.0	19.0	20.0	21.0
Tukey's Hinges	male			17.0	18.0	20.0		
	female			17.0	18.0	19.0		

Appendix C2c: Extreme Values for gender

		Extreme Values for gender			
	gender		Case Number	Value	
age	male	Highest	1	78	24
			2	147	24
			3	72	23
			4	169	23
			5	34	22 ^a
	female	Lowest	1	182	14
			2	86	14
			3	8	14
			4	301	15
			5	295	15 ^b
age	male	Highest	1	58	22
			2	59	22
			3	142	22
	female	Lowest	4	267	22
			5	304	22
			1	298	14
			2	31	14
			3	307	15

	4	204	15
	5	194	15 ^b

a. Only a partial list of cases with the value 22 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 15 are shown in the table of lower extremes.

Appendix C2c: Age Stem-And-Leaf Plot for Gender= Female

Frequency Stem & Leaf

```

2.00  14 . 00
.00   14 .
10.00 15 . 0000000000
.00   15 .
20.00 16 . 00000000000000000000
.00   16 .
28.00 17 . 00000000000000000000000000
.00   17 .
22.00 18 . 000000000000000000000000
.00   18 .
25.00 19 . 000000000000000000000000
.00   19 .
17.00 20 . 00000000000000000000
.00   20 .
5.00  21 . 00000
.00   21 .
5.00  22 . 00000
    
```

Stem width: 1
Each leaf: 1 case(s)

Appendix C2e: Age Stem-and-Leaf Plot for gender= male

Frequency Stem & Leaf

```

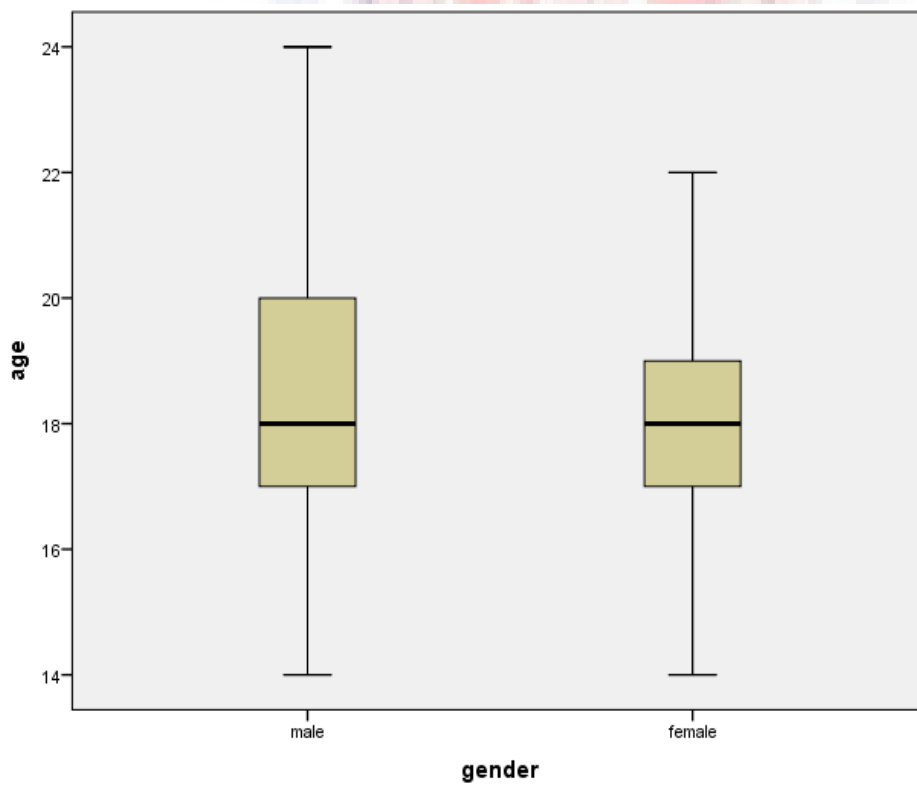
3.00  14 . 000
12.00 15 . 000000000000
20.00 16 . 00000000000000000000
29.00 17 . 00000000000000000000000000
39.00 18 . 00000000000000000000000000000000
24.00 19 . 00000000000000000000000000
15.00 20 . 0000000000000000
20.00 21 . 00000000000000000000
10.00 22 . 0000000000
2.00  23 . 00
    
```

2.00 24 . 00

Stem width: 1

Each leaf: 1 case(s)

Appendix C2d: Histogram



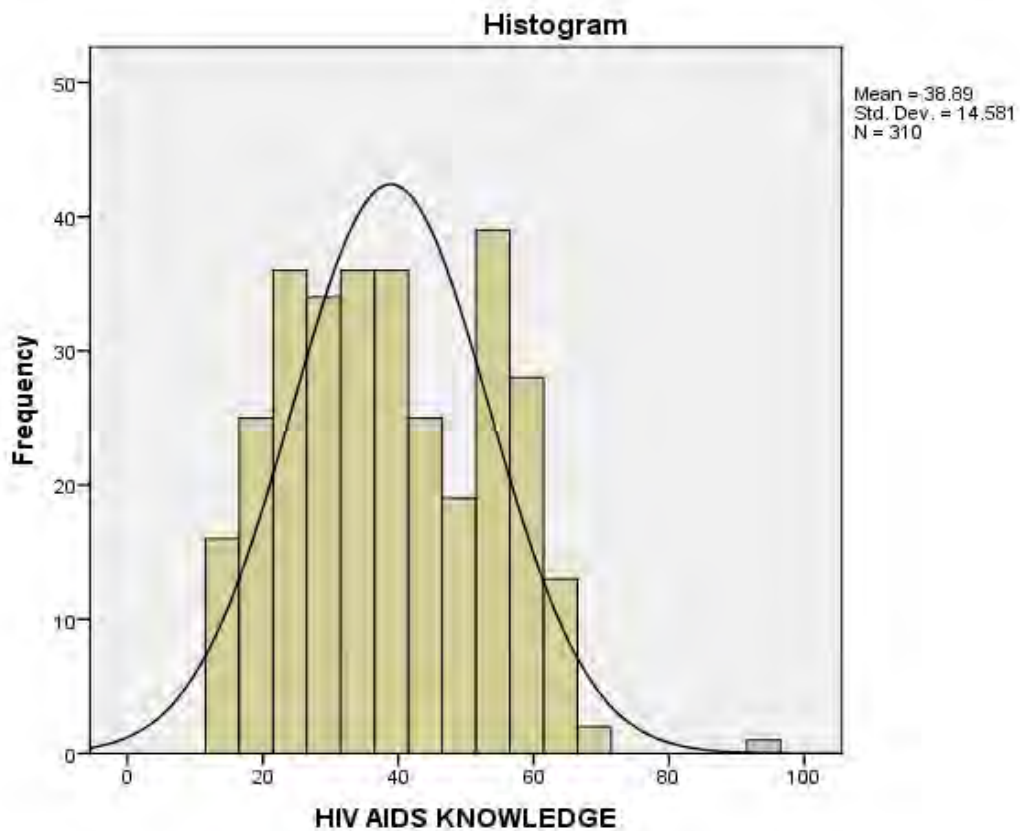
Appendix D1 : Normality Distribution for HIV/AIDS Knowledge Scale

Statistics

HIV AIDS KNOWLEDGE		
N	Valid	310
	Missing	0

Mean		38.89
Median		38.50
Mode		16
Std. Deviation		14.581
Variance		212.594
Skewness		.266
Std. Error of Skewness		.138
Kurtosis		-.550
Std. Error of Kurtosis		.276
Range		82
Minimum		14
Maximum		96
	25	26.75
Percentiles	50	38.50
	75	52.00

Appendix D1a: Normality Distribution for HIV/AIDS Knowledge Scale



Appendix D1b: Normality Distribution for HIV AND AIDS KNOW

Stem-and-Leaf Plot for gender= male

Frequency Stem & Leaf

10.00	1 .	6666666778
4.00	2 .	0123
13.00	2 .	5556677789999
23.00	3 .	00000111222222333444444
43.00	3 .	5555666666666666666677777778888888889999999999
34.00	4 .	000000001111122222222233333344444
22.00	4 .	555566666666667777777789
14.00	5 .	01111122333444
7.00	5 .	5568889
5.00	6 .	11233
1.00	Extremes	(>=96)

Stem width: 10

Each leaf: 1 case(s)

Appendix D1c: HIV AND AIDS KNOW Stem-and-Leaf Plot for gender= female

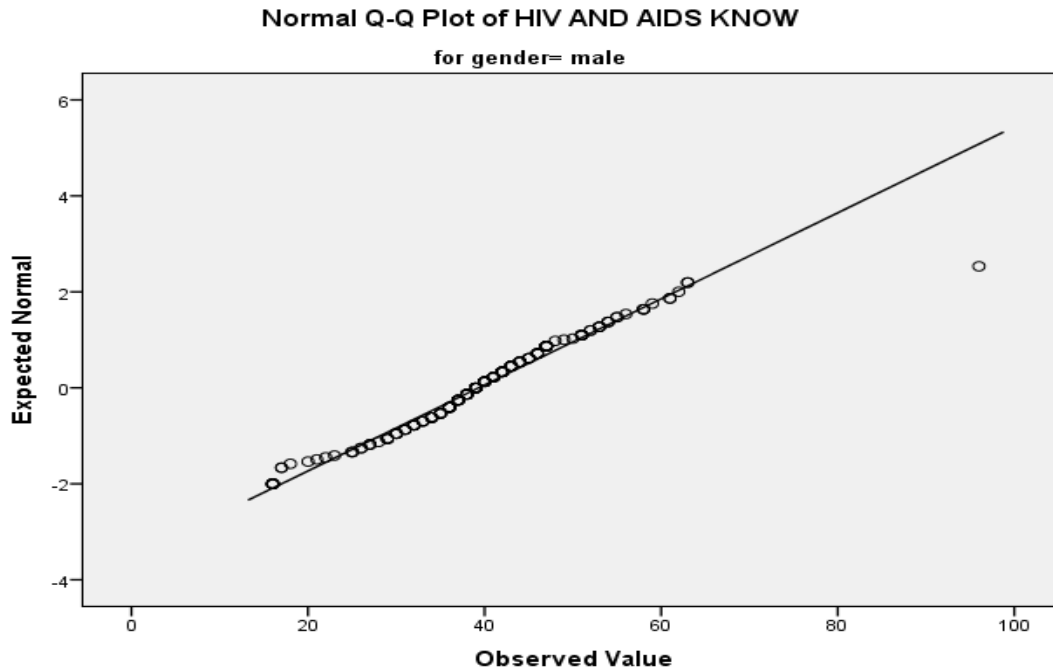
Frequency Stem & Leaf

1.00	1 .	4
11.00	1 .	66666666788
7.00	2 .	0011224
12.00	2 .	666788899999
26.00	3 .	000111122222233344444444444
17.00	3 .	55666669999999999
24.00	4 .	000001111122222233333344
14.00	4 .	55555666667899
14.00	5 .	00111222222444
3.00	5 .	679
3.00	6 .	234
1.00	6 .	5
1.00	Extremes	(>=68)

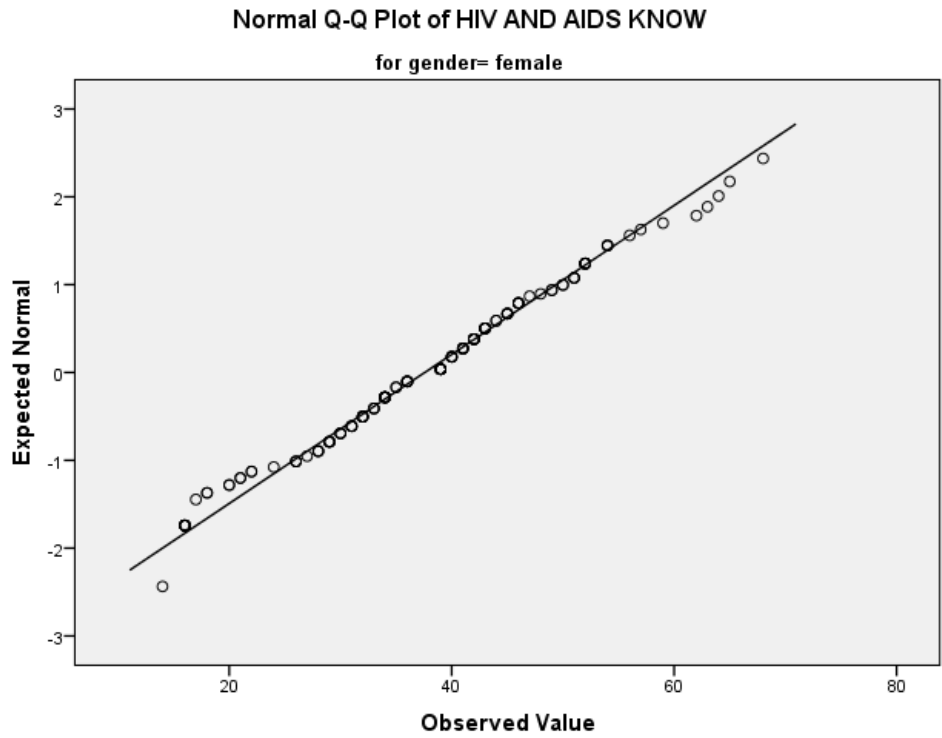
Stem width: 10

Each leaf: 1 case(s)

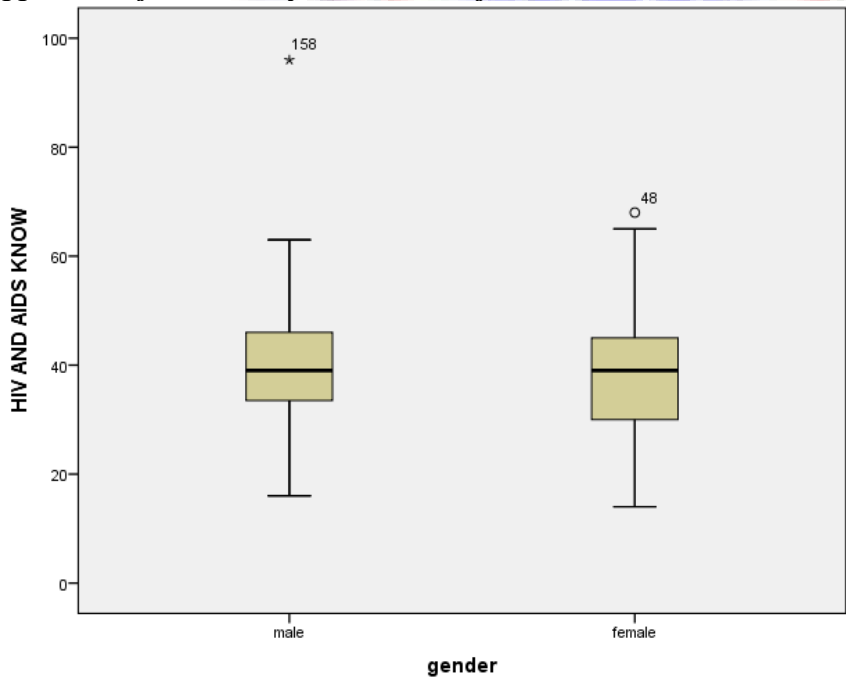
Appendix D1 d: Normality Distribution for HIV AND AIDS KNOW



Appendix D1e: Normality Distribution for HIV AND AIDS KNOW



Appendix Df: Normality Distribution for HIV AND AIDS KNOW



Appendix D2a: Normality Distribution for Sexual Behavior Scale

Statistics

SEXUAL BEHAVIOR

N	Valid	310
	Missing	0
Mean		33.63
Median		33.00
Mode		19 ^a
Std. Deviation		12.186
Variance		148.500
Skewness		.115
Std. Error of Skewness		.138
Kurtosis		-1.072
Std. Error of Kurtosis		.276
Range		47
Minimum		12
Maximum		59
Percentiles	25	23.00
	50	33.00
	75	44.00

a. Multiple modes exist. The smallest value is shown

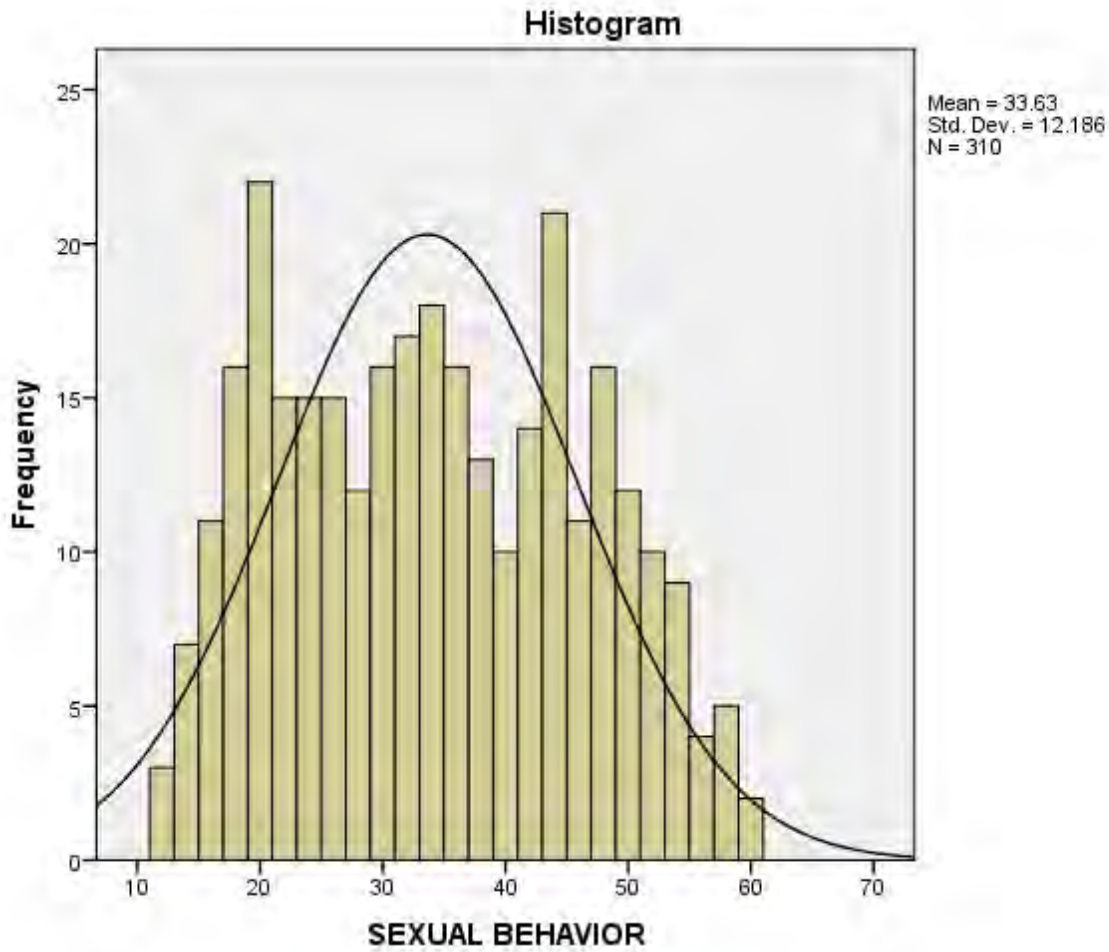
Appendix D2b: Normality Distribution for Sexual Behavior Scale Statistics

SEXUAL BEHAVIOR

N	Valid	310
	Missing	0
Mean		33.63
Median		33.00
Mode		19 ^a
Std. Deviation		12.186
Variance		148.500
Skewness		.115
Std. Error of Skewness		.138
Kurtosis		-1.072
Std. Error of Kurtosis		.276
Range		47
Minimum		12
Maximum		59
Percentiles	25	23.00
	50	33.00
	75	44.00

a. Multiple modes exist. The smallest value is shown

Appendix D2c: Normality Distribution sexual



Appendix D3a: Risky sexual behavior outlier

Stem-and-Leaf Plot for gender= male

Frequency Stem & Leaf

3.00	1 . 234
15.00	1 . 555667778899999
13.00	2 . 0000233334444
25.00	2 . 5555555556666667888899999
38.00	3 . 00000000000111111222222223333444444444
38.00	3 . 555555555566666666666666677777777888888889
29.00	4 . 000000111111222222222233334444
9.00	4 . 555666779
2.00	5 . 11
4.00	5 . 6779

Stem width: 10
 Each leaf: 1 case(s)

Appendix D3b: Risky sexual behavior outlier

SEXUAL BEHAVIOR Stem-and-Leaf Plot for gender= female

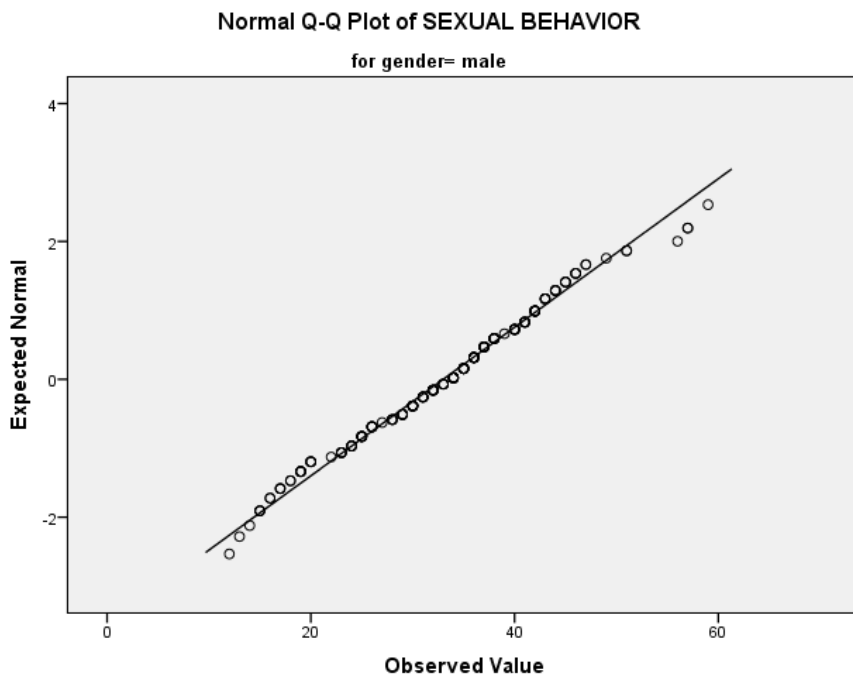
Frequency Stem & Leaf

```

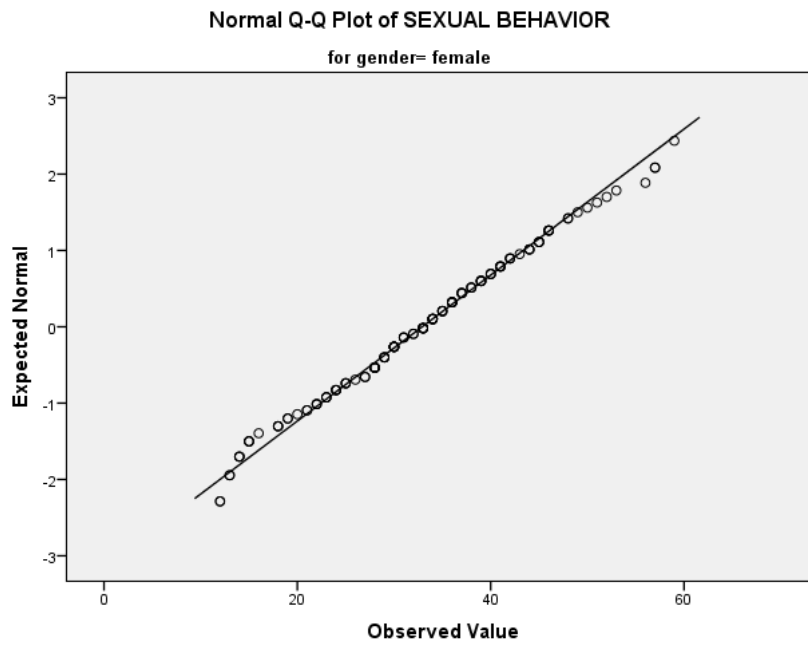
7.00  1 . 2233444
9.00  1 . 555688899
13.00  2 . 0112223334444
19.00  2 . 555677888888889999
28.00  3 . 000000000011122333334444444
24.00  3 . 5555666666666777788899999
15.00  4 . 000111112223444
11.00  4 . 55566666889
4.00   5 . 0123
4.00   5 . 6779
    
```

Stem width: 10
 Each leaf: 1 case(s)

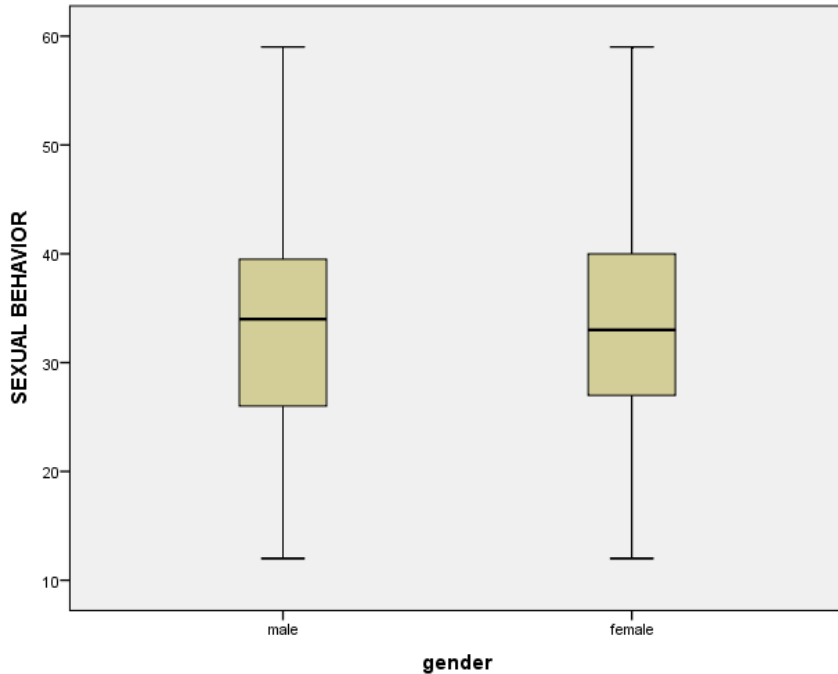
Appendix D3c: Risky sexual behavior outlier



Appendix D3d: Risky sexual behavior outlier



Appendix D3e: Risky sexual behavior outlier



Appendix E1: questionnaire

Appendix E: Questionnaire: HIV and AIDS and the deaf questionnaire

This research is towards a PhD degree. Please complete the questionnaire accurately and honestly. This questionnaire is being completed by students in many schools for the deaf in Ghana. No-one will know your individual answers. Please put a tick in the correct space

Questionnaire Number Date Name of School

General Instructions

This questionnaire is part of a study of Ghanaian deaf student and their knowledge, attitude and relationship behaviour related to HIV and AIDS. This questionnaire is divided into four sections: section 1,2,3 and 4.

Please fill in all details on this questionnaire as indicated in each section. Please answer all questions completely and as honestly and openly as possible. There are no right or wrong answers to the questions relating to your attitudes (section 3) and behaviour (section 4). Please do not write your name anywhere on this questionnaire. This is to ensure that your

answers remain confidential. If at any stage you feel you cannot continue answering the questionnaire or you have any questions, please alert the researcher or your teacher and they will help you. Individual answers will not be shared with anyone and this questionnaire will only be seen by the researcher.

Thank you.

Section One

1. Age: _____ 2. Educational level (please circle): Basic (7), (8), (9)
3. Male or Female. 4. Location: village/semi-urban/urban
5. Are you currently in a relationship; i.e. do you have a girlfriend, boyfriend, wife or partner? a. Yes, [] b. No [].
6. My partner is .. a. Male [] b. Female [].
7. How long have you been involved with your current partner? a.weeks, b.months, c.years.
8. How old were you when you first had sexual intercourse? _____ years.
9. At this time, do you have a regular sexual partner? Yes [], No []
10. Have you had sexual intercourse with someone other than your regular partner in the past year? Yes [], No [].
11. Over the last month, how many *different* persons have you had sexual intercourse with? (please include regular partner in this number, if applicable).....
12. What contraceptives do you or your partner use

Section 2: HIV/AIDS Knowledge Scale

1. The following questions concern HIV and AIDS related knowledge. Please read each statement and mark the option that best suits your belief.

HIV and AIDS Knowledge scale (HAK Scale)

Items/statements	Strongly agree	Some what agree	Neither agree nor disagree	Some what disagree	Strongly disagree
Homosexuals are responsible for spreading HIV and AIDS	1	2	3	4	5
People can acquire HIV and AIDS from	1	2	3	4	5

being bewitched					
A person can have the virus that causes AIDS but not have the symptoms	1	2	3	4	5
A person can become infected with HIV during one sexual contact	1	2	3	4	5
People who are HIV positive cannot transmit the virus until they have AIDS	1	2	3	4	5
A person can become infected with HIV during one sexual contact	1	2	3	4	5
People who are HIV positive cannot transmit the virus until they have AIDS	1	2	3	4	5
Having unprotected sex with several people makes a person susceptible to contracting HIV.	1	2	3	4	5
HIV cannot be contracted through anal sex	1	2	3	4	5
HIV is transmitted through vaginal sexual intercourse	1	2	3	4	5
HIV can be transmitted through saliva of a person who is HIV positive	1	2	3	4	5
A person can get HIV by sharing a towel or cup with someone who has HIV	1	2	3	4	5
Receiving a blood transfusion is unsafe because of the risk of contracting HIV	1	2	3	4	5
A pregnant woman can transmit HIV to her baby	1	2	3	4	5
HIV can be transmitted through mosquito bites	1	2	3	4	5
Coughing and sneezing do not spread HIV	1	2	3	4	5
A person can contract HIV virus by sharing a glass of water with someone who is HIV positive.	1	2	3	4	5
Withdrawing the penis before a climax (ejaculates) prevents a woman from contracting HIV during sex	1	2	3	4	5
A man can contract HIV if he has anal sex with a man	1	2	3	4	5
All pregnant women infected with HIV will have babies born HIV positive	1	2	3	4	5
Showering and washing your genitals after sex can reduce the chances of being infected with HIV	1	2	3	4	5
People are likely to contract HIV by deep kissing (putting their tongue in their partners' mouth) if their partners are HIV positive.	1	2	3	4	5

Section 4: Sexual Behavior scale

The following questions concern HIV and AIDS and relationship behaviour. Please circle the number that appropriately answers the question. At this time, you are reminded that your answers are completely confidential.

Sexual Behavior Rating Scale

Sexual Behaviours	Always	Sometimes	Not At All
I have done HIV test in the past year	1	2	3
I have many sexual partners	1	2	3
I usually attend HIV/AIDS meetings, workshops, and seminars	1	2	3
I avoid risky sexual partners	1	2	3
Using a condom takes the “wonder” of sex	1	2	3
If I do HIV testing, people will discriminate me if they found that I am HIV positive	1	2	3
My partner and I will not use a condom once we agree not to have sex with anyone else	1	2	3
when I test for HIV/AIDS my results known to my colleagues	1	2	3
I like attending HIV/AIDS meetings, workshops, and seminars	1	2	3
Using a condom shows my partner that I care about him/her	1	2	3
I can have many sexual partners once I use condoms.	1	2	3

only be seen by the researcher.

Thank you.

SECTION ONE

1. Age: _____ 2. Educational level (please circle): Basic (7), (8), (9)
3. Male or Female. 4. Location: village/semi-urban/urban
5. Are you currently in a relationship; i.e. do you have a girlfriend, boyfriend, wife or partner? a. Yes, [] b. No [].
6. My partner is .. a. Male [] b. Female [].
7. How long have you been involved with your current partner? a.weeks, b.months, c.years.
8. How old were you when you first had sexual intercourse? _____ years.
9. At this time, do you have a regular sexual partner? Yes [], No []
10. Have you had sexual intercourse with someone other than your regular partner in the past year? Yes [], No [].
11. Over the last month, how many *different* persons have you had sexual intercourse with? (please include regular partner in this number, if applicable).....
12. What contraceptives do you or your partner use

SECTION 2: HIV and AIDS KNOWLEDGE

1. The following questions concern HIV and AIDS related knowledge. Please read each statement and mark the option that best suits your belief.

HIV and AIDS Knowledge scale (HAK Scale)

Items/statements	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
AIDS is caused by HIV	1	2	3	4	5
Homosexuals are responsible for spreading HIV and AIDS	1	2	3	4	5
People can acquire HIV and AIDS from being bewitched	1	2	3	4	5
A person can have the virus that causes AIDS but not have the symptoms	1	2	3	4	5

A person can become infected with HIV during one sexual contact	1	2	3	4	5
People who are HIV positive cannot transmit the virus until they have AIDS	1	2	3	4	5
A person can become infected with HIV during one sexual contact	1	2	3	4	5
People who are HIV positive cannot transmit the virus until they have AIDS	1	2	3	4	5
Having unprotected sex with several people makes a person susceptible to contracting HIV.	1	2	3	4	5
HIV cannot be contracted through anal sex	1	2	3	4	5
HIV is transmitted through vaginal sexual intercourse	1	2	3	4	5
HIV can be transmitted through saliva of a person who is HIV positive	1	2	3	4	5
A person can get HIV by sharing a towel or cup with someone who has HIV	1	2	3	4	5
Receiving a blood transfusion is unsafe because of the risk of contracting HIV	1	2	3	4	5
A pregnant woman can transmit HIV to her baby	1	2	3	4	5
HIV can be transmitted through mosquito bites	1	2	3	4	5
Coughing and sneezing do not spread HIV	1	2	3	4	5
A person can contract HIV virus by sharing a glass of water with someone who is HIV positive.	1	2	3	4	5
Withdrawing the penis before a climax (ejaculates) prevents a woman from contracting HIV during sex	1	2	3	4	5
A man can contract HIV if he has anal sex with a man	1	2	3	4	5
Condoms are less than fifty per cent safe for the prevention of HIV/AIDS infection	1	2	3	4	5
All pregnant women infected with HIV will have babies born HIV positive	1	2	3	4	5
Showering and washing your genitals after sex can reduce the chances of being infected with HIV	1	2	3	4	5
I know of where and how I can do HIV testing and counselling, and the consequences of my testing	1	2	3	4	5
People are likely to contract HIV by deep kissing (putting their tongue in their partners' mouth) if their partners are HIV positive.	1	2	3	4	5

Attitude scale

Attitude/items	Strongly agree	Somewh at agree	Neither agree nor	Somewh at agree	Strongl y agree
----------------	----------------	-----------------	-------------------	-----------------	-----------------

	disagree				
A person can change their behaviour to reduce the risk of getting AIDS	1	2	3	4	5
Western medicine has a cure for AIDS	1	2	3	4	5
Traditional African medicine has a cure for AIDS	1	2	3	4	5
Having sex with a virgin can cure you of AIDS	1	2	3	4	5
Using a condom takes the “wonder” of sex	1	2	3	4	5
If I do HIV testing, people will discriminate me if they found that I am HIV positive	1	2	3	4	5
A condom is not necessary when you and your partner agree not to have sex with anyone else	1	2	3	4	5
I do not want to do testing because the person who conduct the testing will make my results known to my colleagues	1	2	3	4	5
I like attending HIV/AIDS meetings, workshops, and seminars	1	2	3	4	5
Using a condom shows my partner that I care about him/her	1	2	3	4	5
People who use condoms sleep around a lot	1	2	3	4	5
I can use the same toilet facilities with the HIV positive people	1	2	3	4	5
Traditional medicines are a waste of time in the HIV/AIDS intervention	1	2	3	4	5

I think peer educators can improve HIV/AIDS awareness 1 2 3 4 5

People who are HIV positive should mix with other people 1 2 3 4 5

SECTION 4: RELATIONSHIP BEHAVIOUR (sexual practices)

The following questions concern HIV and AIDS and relationship behaviour. Please circle the number that appropriately answers the question. At this time, you are reminded that your answers are completely confidential.

Sexual Behaviour Rating scale

Sexual Behaviours	Always	Sometimes	Not At All
I use condom during sex	1	2	3
I have done HIV test in the past year	1	2	3
I have many sexual partners	1	2	3
I usually attend HIV/AIDS meetings, workshops, and seminars	1	2	3
I avoid risky sexual partners	1	2	3
I only have sex with an HIV negative partner who only will have sex with me	1	2	3
I talk with my sexual partner about HIV/IDS before having sex with him/her	1	2	3
I always withdraw and wash my genitals (private parts) after climaxing (ejaculation)	1	2	3
I want to be involved with HIV/AIDS activities	1	2	3
I only have sex with people who had an HIV test	1	2	3

Thank you for your time and participation in this study; it is truly appreciated.

Appendix F : Coding of research participants for qualitative research

CODES FOR INTERVIEW LIST

Savelugu school for the deaf	Gbeogo school for the deaf	Wa school for the deaf	Bechem school for the deaf
SSDR1	GSDR1	WSDR1	BSDR1
SSDR2	GSDR2	WSDR2	BSDR2
SSDR3	GSDR3	WSDR3	BSDR3
SSDR4	GSDR4	WSDR4	BSDR4
SSDR5	GSDR5	WSDR5	BSDR5
SSDR6	GSDR6	WSDR6	BSDR6
SSDR7	GSDR7	WSDR7	BSDR7
SSDR8	GSDR8	WSDR8	BSDR8
SSDR9	GSDR9	WSDR9	BSDR9

THIS IS FOR ALL 35 RESPONDENTS, YOU MAY PICK FROM ANYWHERE.

Appendix G 1: Introductory Letters

APPENDIX E



DEPARTMENT OF SPECIAL EDUCATION

UNIVERSITY OF EDUCATION, WINNEBA

OFFICE OF THE HEAD OF DEPARTMENT

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LETTER OF – INTRODUCTION- TO WHOM IT MAY CONCERN

I write to introduce to you Ms Issaka Cecilia Alimatu. She is a second year PhD student at the Department of Special Education of the University of Education ,Winneba. She is currently working on her Thesis on the Topic: HIV/AIDS knowledge and sexual behaviours among adolescents with hearing impairments in some selected Special Schools in Ghana

I should be grateful if you could give her the needed attentions to enable her carry out with her work.

Counting on your Usual Cooperation.

Thank you
Yours faithfully,

Samuel K. Hayford
HEAD OF DEPARTMENT.

Appendix H: consent form

Department Of Special Education
UEW
P.O.BOX 25
Basic 7, 8, and 9
Schools for the Deaf
Ghana

Dear Students:

My name is Cecilia A. Issaka- a part-time PhD student in the Department of Special Education at the University of Education, Winneba. I am conducting a research study on “**Knowledge**”. Your school and class have been selected to participate in the study. I am therefore contacting you for your participation in this study. If you choose to participate, I will be prepared to share the findings with you after completion of the study. Your identity will be kept confidential. Your individual names will NOT be associated with the research findings in any way. Only your researchers will know your identity. Data collected from you will be treated strictly confidential

and will not be shared with any other participants and individuals outside of this study. There are no known risk and/or discomforts associated with this study. The expected benefits associated with your participation are the information about your knowledge level and sexual behavior of the pupils with hearing impairment in your class. If this study is later submitted and accepted for publication, a by-line will indicate the participation of all pupils in your class.

Enclosed, you will find an “**INFORMED CONSENT FORM**” which asks your permission to participate in this study. If you choose to participate in this study, kindly sign and submit it to your class teacher. I hope you will choose to participate in this study.

Thank you for your cooperation.

Sincerely,

Issaka Cecilia Alimatu (M. Phil, Special Education)

Appendix I: sample responses

MULTIPLE SEX PARTNERS

Respondent ONE

I am a twenty years old man. The truth is I have multiple sexual partners. For those I do not trust I use condom during sexual intercourse. I know my wife will be a good woman.

HIV/AIDS is a bad illness which do not have cure. If you want to have girlfriends then I will use condom some hospitals can help me if I get AIDS.

Respondent 3

I am 19 years old, I know HIV/AIDS. If when you go to hospital you will see pictures, want to protect you can use condom and ABC because Africa do not have medicine for HIV/AIDS.

I have many lovers (Girls) they are in school and at home. I have a room in my house and my friends come to me. When I want to have sex with one school I sometimes buy condom, but if it is the house I use water to wash my penis after sex because using condom is not good and sweat last year I had HIV/testing so I do not have.

Respondent 4

I am a twenty year old, I stay alone and have two lovers. I stay faithful to one but use condom with the other one. The one I use condom with is not faithful. I want to stay positive and know my status. I do not like condom but because I don't trust my one partner. When I am not using condom with my other partner, he knows I am faithful and caring.

Sometime they are telling lies people have some medicine for HIV. Somewhere last year I had a lover who help me with my needs, he did not like the condom so he never use condom. If I want to learn about HIV/AIDS I look at pictures.

Respondent 8

I am 18 years and have 2 sexual partners, they help me with things. I let them use condom when I don't want to be pregnant because i don't like sex with condom. I know HIV/AIDS is a sickness but now it is gone they don't bring picture anymore. They say the sickness is now Ebola. All my sexual partners are deaf, me I don't love hearing people because they have the sickness.

AIDS HAS NO CURE

respondent ONE

I am a twenty years old man. The truth is I have multiple sexual partners. For those I do not trust I use condom during sexual intercourse. I know my wife will be a good woman.

HIV/AIDS is a bad illness which do not have cure. If you want to have girlfriends then I will use condom some hospitals can help me if I get AIDS.

Respondent

I am a twenty-one years boy. AIDS is a very bad disease. In Ghana there is not cure for AIDS but may be you can get treatment abroad. We have AIDS peer educators in our school.

I have only one partner now because my hearing girlfriend has kill her love. We use contraceptive during sex but if she agrees I will not use because she is also deaf so I can believe her. The hearing people have HIV/AIDS so I will not marry one. I will marry one. I will marry a deaf girl who has no HIV/AIDS

Respondent 3

I am 19 years old, I know HIV/AIDS. If when you go to hospital you will see pictures, want to protect you can use condom and ABC because Africa do not have medicine for HIV/AIDS.

I have many lovers (Girls) they are in school and at home. I have a room in my house and my friends come to me. When I want to have sex with one school I sometimes buy condom, but if it is the house I use water to wash my penis after sex because using condom is not good and sweat last year I had HIV/testing so I do not have.

Respondent 4

I am a twenty year old, I stay alone and have two lovers. I stay faithful to one but use condom with the other one. The one I use condom with is not faithful. I want to stay positive and know my status. I do not like condom but because I don't trust my one partner. When I am not using condom with my other partner, he knows I am faithful and caring.

Sometime they are telling lies people have some medicine for HIV. Somewhere last year I had a lover who help me with my needs, he did not like the condom so he never use condom. If I want to learn about HIV/AIDS I look at pictures.

Respondent 6

I am 17 years; I have one girlfriend who is hearing. We know HIV/AIDS so we use condom to stop us from getting AIDS. My partner will not agree to have sex without condom. She told me there is no medicine for HIV/AIDS and that Africa people who get HIV/AIDS will die.

In our school we sometimes attend workshops on IV/AIDS in the District.

AIDS HAS A CURE

Respondent 5

AIDS is a disease that is got from sexual intercourse. It is a killer disease. Some hospitals has medicine for AIDS, I get education about AIDS in pictures and hospitals. But they (hospital people) cannot explain because they cannot sign. We have peer educators who help us.

I do not have a sexual partner now but before I have three boyfriends I don't like using condom so I will look for boyfriend who is good so we don't use condom. Using a condom cannot stop AIDS. I am 19 years.

Respondent 7

I am a 21 years old boy who have a girl in my hometown who will be my wife. When we meet we don't use condom because the hearing people like knowing people matters. I will not use condom but if I am to test for HIV/AIDS I will be afraid. Because the hospital people will look at you. The hearing people like talking about people. The hospital in my hometown have medicine.

AIDS IS A BAD DISEASE

respondent ONE

I am a twenty years old man. The truth is I have multiple sexual partners. For those I do not trust I use condom during sexual intercourse. I know my wife will be a good woman.

HIV/AIDS is a bad illness which do not have cure. If you want to have girlfriends then I will use condom some hospitals can help me if I get AIDS.

Respondent

I am a twenty-one years boy. AIDS is a very bad disease. In Ghana there is not cure for AIDS but may be you can get treatment abroad. We have AIDS peer educators in our school.

I have only one partner now because my hearing girlfriend has kill her love. We use contraceptive during sex but if she agrees I will not use because she is also deaf so I can believe her. The hearing people have HIV/AIDS so I will not marry one. I will marry one. I will marry a deaf girl who has no HIV/AIDS

Respondent 5

AIDS is a disease that is got from sexual intercourse. It is a killer disease. Some hospitals has medicine for AIDS, I get education about AIDS in pictures and hospitals. But they (hospital people) cannot explain because they cannot sign. We have peer educators who help us.

I do not have a sexual partner now but before I have three boyfriends I don't like using condom so I will look for boyfriend who is good so we don't use condom. Using a condom cannot stop AIDS. I am 19 years.

HEARING PEOPLE HAVE THE VIRUS

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Respondent 8

I am 18 years and have 2 sexual partners, they help me with things. I let them use condom when I don't want to be pregnant because i don't like sex with condom. I know HIV/AIDS is a sickness but now it is gone they don't bring picture anymore. They say the sickness is now Ebola. All my sexual partners are deaf, me I don't love hearing people because they have the sickness.

HAVING KNOWLEDGE ABOUT THE VIRUS

respondent ONE

I am a twenty years old man. The truth is I have multiple sexual partners. For those I do not trust I use condom during sexual intercourse. I know my wife will be a good woman.

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Respondent

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Respondent 3

I am 19 years old, I know HIV/AIDS. If when you go to hospital you will see pictures, want to protect you can use condom and ABC because Africa do not have medicine for HIV/AIDS.

I have many lovers (Girls) they are in school and at home. I have a room in my house and my friends come to me. When I want to have sex with one school I sometimes buy condom, but if it is the house I use water to wash my penis after sex because using condom is not good and sweat last year I had HIV/testing so I do not have.

Respondent 4

I am a twenty year old, I stay alone and have two lovers. I stay faithful to one but use condom with the other one. The one I use condom with is not faithful. I want to stay positive and know my status. I do not like condom but because I don't trust my one partner. When I am not using condom with my other partner, he knows I am faithful and caring.

Sometime they are telling lies people have some medicine for HIV. Somewhere last year I had a lover who help me with my needs, he did not like the condom so he never use condom. If I want to learn about HIV/AIDS I look at pictures.

Respondent 5

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Respondent 6

I am 17 years; I have one girlfriend who is hearing. We know HIV/AIDS so we use condom to stop us from getting AIDS. My partner will not agree to have sex without condom. She told me there is no medicine for HIV/AIDS and that Africa people who get HIV/AIDS will die.

In our school we sometimes attend workshops on HIV/AIDS in the District.

Respondent 7

I am a 21 years old boy who have a girl in my hometown who will be my wife. When we meet we don't use condom because the hearing people like knowing people matters. I will not use condom but if I am to test for HIV/AIDS I will be afraid. Because the hospital people will look at you. The hearing people like talking about people. The hospital in my hometown have medicine.

Respondent 8

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USE OF CONDOMS AND CONTRACEPTIVES

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DON'T USE CONDOM

Respondent 5

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WASHING OF GENITALS

Respondent 3

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PEER EDUCATION

Respondent 2

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ATTENDING WORKSHOPS AND SEMINARS

Respondent 6

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AIDS IS NO MORE, EBOLA HAS TAKEN OVER

Respondent 8

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