UNIVERSITY OF EDUCATION, WINNEBA

HIV/AIDS KNOWLEDGE AND SEXUAL BEHAVIOURS AMONG ADOLESCENTS WITH HEARING IMPAIRMENTS IN SELECTED SPECIAL SCHOOLS FOR THE DEAF IN GHANA

CECILIA ALIMATU ISSAKA

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A Thesis in the Department of SPECIAL EDUCATION, Faculty of EDUCATIONAL STUDIES, submitted to the School of Graduate Studies University of Education, Winneba in partial fulfilment of the requirements for award of the Doctor of Philosophy (SPECIAL EDUCATION (EHI) degree

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DECLARATION

Candidate's 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: ……...

Supervisors 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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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 defenes 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
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

ABSTRACT

This study explored HIV/AIDs knowledge and sexual behaviours of adolescents with hearing impairments (HI) in some special schools in Ghana. The study employed mixed method designs to achieve its objective. A cluster sampling technique was used to sample the respondents. Self-constructed questionnaire, which was made up of HIV/AIDs Knowledge and sexual behaviour scales, was administered to three hundred and ten (N=310) adolescents from four (4) special schools in four regions of Ghana. Interviews and focus group discussions were used in gathering the data. The data analysis strategies used in the study included frequency distribution tables, mean scores, standard deviation, t-test and correlations through the use of SPSS software version 17.0. Open, axial and selective coding systems were used to analyse qualitative data. Results of the study showed that although adolescents with HI were aware of HIV/AIDs, they had limited knowledge of HIV/AIDs; most of them were engaged in sexual behaviours that placed them at high risk of contracting HIV, and that risky sexual behaviours could be predicted from adolescents with HI lack of knowledge of HIV/AIDs. There was a statistically significant difference between female and male adolescents' knowledge of HIV/AIDs as well as their involvement in risky sexual behaviours. It is recommended that all stakeholders should work collaboratively to intensify education on HIV/AIDs by using sign language to ensure that information needed by individuals with HI is captured and this should be part of the national HIV Strategic Plans (NSPs). Free health care and counselling services should be provided for persons with disabilities. Also emphasis should be placed on knowledge of HIV/AIDs when planning programmes for HIV/AIDs education and both genders should be involved.

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

This sequential explanatory mixed method study is about HIV/AIDs knowledge and sexual behaviours of adolescents with hearing impairments (HI). In Ghana, sex related issues are 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. Discussions on sexual promiscuity among the youth are issues nearly every parent would probably avoid rather than engage their children in. However, the issue STDs 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 new 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). In 2007, sub-Saharan Africa (SSA) was home to two thirds of the world's HIV population (WHO, 2008). 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 inflicts. The HIV epidemic is unpredictable and people the world over must be equipped with 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 was 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 remain 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 – thus, the disabled, the poor, women and children (Aderemi, 2011). A global mail survey on HIV/AIDS and disability indicates that HIV/AIDS is a significant and yet 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 & 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 support for the disabled 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 hearing impaired teenagers demonstrated sufficient gaps in the knowledge of how the disease is transmitted, its impact, prevention and attitudes that lead to its transmission (Amenyaku, 2004). Similarly, a 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. 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 from some professionals, such as medical practitioners and professionals in other fields or disciplines 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 is a language skill which is much more restricted to special schools for the deaf. This accounts for the reason why the use of sign language is not prevalent in Ghanaian communities (Naso, 2008). In effect, there are relatively fewer 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 communication 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 sort has be done (Disability act).

The hearing impaired persons, a vulnerable group whose major mode of communication in Ghana is sign language, have often been side-lined 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 is not disseminated in an appropriate way to suit the hearing impaired. Sleek (1998) argues that written materials are often incomprehensible to this group because sign language is structurally and grammatically different from the English language. The author further argues that the average deaf person reads at a fourth or fifth-grade level.

Similarly, Ellen (2003) contends that the literacy rate among the disabled individuals was as low as 3% globally. Quite 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 are diagnosed each year. In addition to this, about 25,000 deaf people are said to be living with the disease 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 some thematic areas of focus as follows:

- Policy, Advocacy and Enabling Environment
- Prevention and Behavioural 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, Owoage & Faseru, (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 if they decided to have unprotected sex just 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 Ghanaians infected with the virus, it is generally presumed 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. 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 are either not going down well with persons who are hearing impaired or that are 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 annually on

HIV/AIDS activities in Ghana. 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 developing 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, 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 first occurrence 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 wellbeing of persons with hearing impairment (Robert, 2006).

1.1 Statement of the problem

In the absence of a cure and/or vaccine, the best approach to HIV is to focus on prevention. However, the preventative measures that are presently available in Ghana seem not to target persons with hearing impairment, despite their vulnerability to the HIV infection. Comprehensive sex 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 programs of the government and by Non-Governmental Organizations (NGOs) are mainly done through the mass media and through educational materials. These methods often use spoken or written languages to which persons with hearing impairment often have limited access. This communication barrier is also present in medical settings as health care providers also do not use or understand sign language. The result is that the typical health education programme as a means of combating the spread of HIV and AIDS may not meet the needs of adolescents with

hearing impairments in special schools as well as 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. The practical problem to be investigated in this study is to explore the HIV/AIDs knowledge and sexual behaviours of adolescents with HI in some special schools in Ghana and how they guard themselves against HIV/AIDs infection.

Previous studies show that adolescents with disabilities are sexually active, like their peers without disabilities (Kef & Bos, 2006; Wiegerink, Roebroeck, 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 is that a man infected with HIV can be cured by having sex with a virgin and this is making such men have sex with women and girls with disability who are often assumed to be virgins (Groce & Trasi, 2004), thereby exposing persons with disabilities to the risk of contracting HIV. In addition, studies conducted in developing countries suggest that the 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 the possible high risk sexual behaviour of adolescents with hearing impairment, there is a pressing need to obtain data on the HIV/AIDs knowledge and sexual behaviours of adolescents with hearing impairment. This helped to provide adolescents with HI appropriate and comprehensive sexuality and HIV prevention education to reduce their exposure to HIV infection.

1.2 Purpose of the study

The purpose of this study was to explore HIV/AIDs knowledge and sexual behaviours of adolescents with hearing impairments in selected special schools in Ghana.

1.3 Objectives of the study

- Find out the level of HIV and AIDs knowledge among adolescents with hearing impairment in selected special schools in Ghana.
- Explore the sexual behaviours that place adolescents with hearing impairments at risk of contracting HIV/AIDs in selected special schools in Ghana.
- Explore experiences of adolescents with hearing impairment about their sexual partners' use of contraceptives (e.g. condom) in protecting themselves against HIV/AIDs in selected special schools in Ghana.
- Find out how adolescents with hearing impairment guard themselves against HIV/AIDs infection;
- Find out the relationships between adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviours.
- Find out whether female and male adolescents with hearing impairments' knowledge of HIV/AIDs and their sexual behaviours differ.

1.4 Research questions

The following questions raised guided the study:

1. What knowledge do adolescents with hearing impairments have about HIV/AIDs in selected special schools in Ghana?

2. What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDs in selected schools in Ghana?
3. What experiences do adolescents with hearing impairments have about their partners' use of contraceptives (e.g. their use of condom during sex) in selected special schools in Ghana?
4. In what ways do adolescents with hearing impairments guard themselves against HIV/AIDs infection in selected special schools in Ghana?
5. What is the relationship between adolescents' Knowledge of HIV/AIDS and their sexual behaviours?
6. In what ways do male and female adolescents with hearing impairment knowledge of HIV/AIDS and their sexual behaviours differ?

1.5 Hypothesis

Hypothesis one

H_0: There is no relationship between adolescents with hearing impairments' Knowledge of HIV/AIDs and their sexual behaviour.

H_1: There is relationship between adolescents with hearing impairments' HIV/AIDs knowledge level and their sexual behaviour.

Hypothesis two

H_0: There is no difference between male and female adolescents with hearing impairments knowledge of HIV/AIDs.

H_1: There is difference between male and female adolescents with hearing impairments knowledge of HIV/AIDs.

Hypothesis three

H_0: There is no difference between the sexual behaviour of male and female adolescents with hearing impairment.

H_1: There is difference in the sexual behaviour of males and females adolescents with hearing impairments.

1.6 Justification for the study

In Ghana, several studies have been undertaken to document HIV and AIDs knowledge, attitudes and sexual behaviours of adolescents. In recent times, however, the focus has been on determining effective interventions, though 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 is 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 population with hearing impairment in Nigeria (Groce et al., 2007; Olawuyi, 2006; Osowole & Oladepe, 2000). The remaining papers focused on people with hearing impairment and those 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 functional, hence this study will provide variable 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 behaviour 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 population of the people with hearing impairment.

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 channelled 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 behaviour. 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 behaviours of students with hearing impairment 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 among the hearing impaired and document the patterns and contexts of these knowledge, attitudes and sexual practices among students with hearing impairment in Ghana.

1.7 Delimitation of the study

Although adolescents with hearing impairment demonstrate different behaviours, this study however, focuses only on their knowledge of HIV and AIDs, the sexual behaviours that place them at risk of contracting HIV/AIDs, their experiences about

their sexual partners' use of contraceptives (e.g. condom) in protecting themselves against HIV/AIDs, how they guard themselves against HIV/AIDs infection, the relationships between their knowledge of HIV/AIDs, and their sexual behaviours, as well as establishing the relationship between knowledge of HIV/AIDs and their sexual behaviours. For this reason, the results and findings are limited to only persons with HI in the selected special schools in Ghana and cannot be used to generalize for all persons with disabilities in Ghana. Secondly, findings from the qualitative phase of the study, though can be used for internal generalization, may be limited in terms of its generalizability.

1.8 Limitation

One key challenge that the researcher encountered during study was the use of research assistants. For example, during data collection and analysis, research assistants were recruited to help administer questionnaires. Because the research assistants could not understand sign language, they depended on interpreters (staff of the special schools where the data were gathered) for translation and interpretation. This could have had an indirect influence on the data in one way or the other. This indirect influence was, however, minimal since questionnaires and interview scripts were returned to the adolescents with hearing impairment for any addition and subtraction of data considered irrelevant by the research participants.

1.9 Organization of the thesis

The thesis is organized into six chapters. Chapter one covered the introduction with the focus on background to the study, statement of the problem, purpose of the

study, objectives of the study, research questions and hypotheses, justification, operational definition of terms, delimitation and limitation. Chapter two discussed the theoretical framework of the study, empirical literature on HIV/AIDS knowledge and sexual behaviour of adolescent with hearing impairment (HI). Chapter three focussed on the various methodological traditions, research designs, data collection and data analysis procedure employed. Chapter four highlighted the research results presented using sequential explanatory procedures. In chapter five, key ideas from both theoretical and empirical literature are used to discuss research findings and results. Finally, chapter six discussed key findings, conclusions and recommendations made based on key findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the literature reviewed for the study. The areas covered are: the theoretical frame work and the review of the literature on the key themes raised in the research questions such as: HIV/AIDs knowledge of adolescents with hearing impairments, sexual behaviours that places adolescents with hearing impairments at risk of contracting HIV/AIDs, experiences of adolescents with hearing impairments have about their partners' use of contraceptives, ways of guarding against HIV/AIDs infection, relationship between adolescents' Knowledge of HIV/AIDS and their sexual behaviours as well as differences in male and female adolescents with hearing impairments knowledge of HIV/AIDS and their sexual behaviours.

2.1 The theoretical background

The theoretical framework of the study was based on the social constructivist (Berger & Lukmann, 2011), social ecology theory (Bronfembrenner, 1994) and social scripting theory (Gagnon & Simon, 1973).

2.1.1 Social constructivist theory

According to the social constructivist theory, the conceptualization of HIV/AIDs and its concomitant risk factors (unprotected sexual intercourse, drugs and stringer use) begin in simple romantic/sexual relationships (Berger & Lukmann, 2011, 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. Since 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. 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.

2.1.2 Social ecology theory

Although Bronfembrenner (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, Bronfembrenner (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 1: Bronfembrenner's social ecology theory).

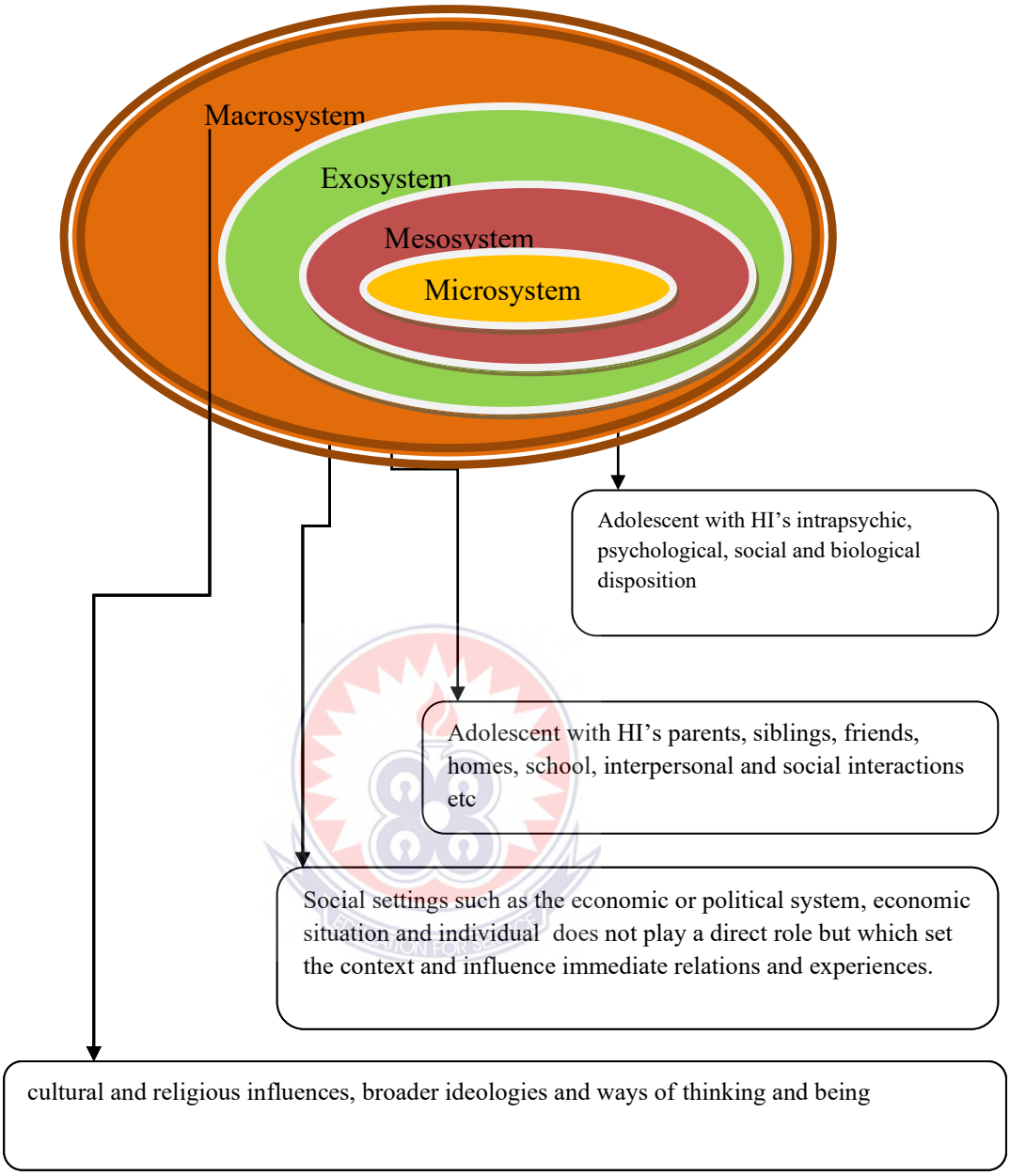


Figure 1: Bronfembrenner's theory of ecology of human development

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

The mesosystem is the second system of Bronfembrenner'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, has 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 behaviour 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 of parents' current or temporary financial difficulties, adolescents with HI may be influenced to succumb to sexual advances,

favours 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 Bronfembrenner (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 and Simon (1973) 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 (Matickay-Tyndale & Tyndale, 2012).

2.1.3 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, occur and influence by actors in the society. Gagnon and Simon (1973) proposed three levels of scripts and sexual situations (intrapsychic, interpersonal and cultural scenarios) which are similar to that of Bronfembrenner's theory of ecology of human development: microsystem, mesosystem and macrosystems (Gagnon, n: d; Maticka-Tyndale & the HP4RY Team, 2012; Bronfembrenner, 1994). Gagnon and Simon (1973) argued that sexual

practices/activities, relationships and interactions of individuals are influenced by those three layers of scripts: intra-psychic, interpersonal and cultural scenario levels (Figure 2: Sexual scripting theory).

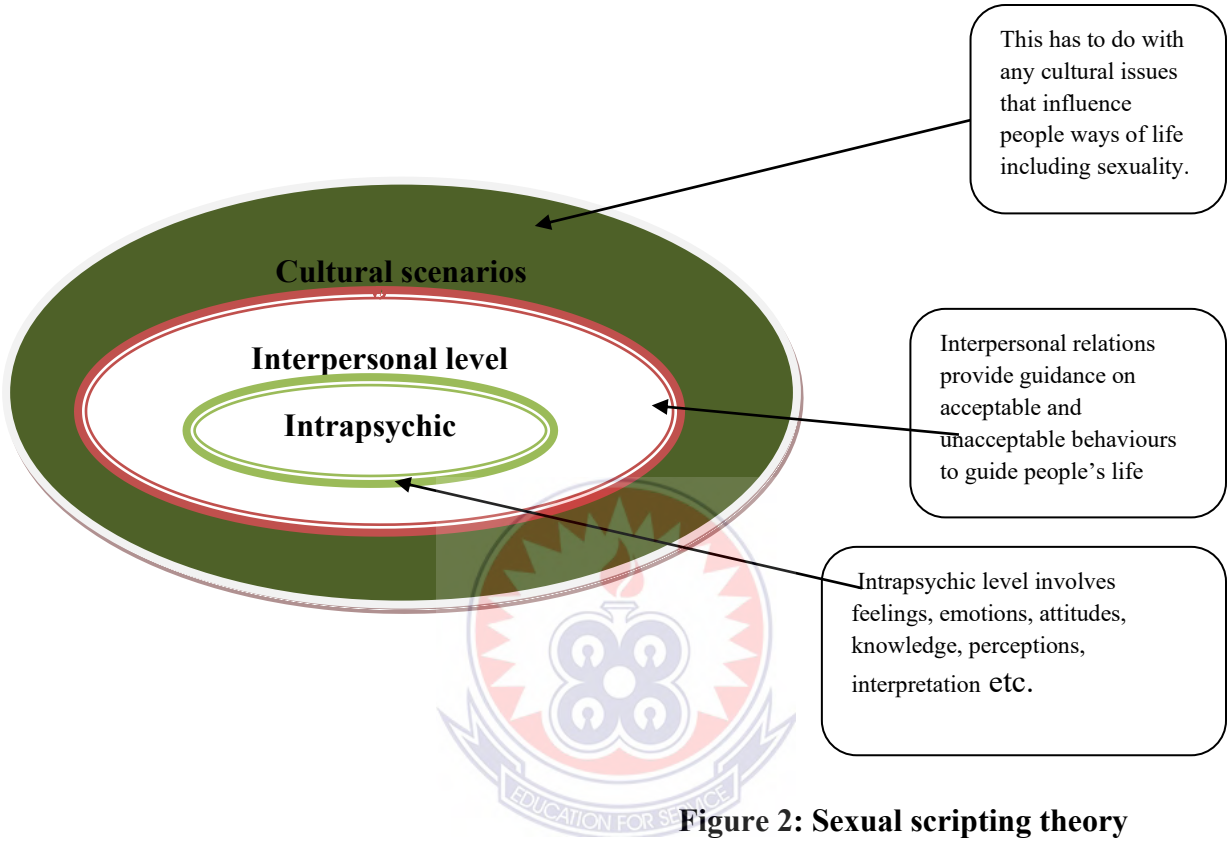


Figure 2: Sexual scripting theory

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 (intra-psychic, 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 determine who appropriate sexual partners are. 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: intra-psychic, interpersonal and cultural scenarios. The interest of sexual scripting is on all the three levels. Intra-psychic operates on the level of mental life. Broadly speaking, it is understood as a level that provides 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 intra-psychic level. Likewise, it is the intra-psychic 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 stake 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 a 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 sceniotic 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 and communities as well cultural settings and the scripts embedded in those cultures.

The central thrush 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.

2.2 Knowledge levels of adolescents with hearing impairments on HIV/AIDs

UNAIDS (2012) reports that a few studies on disability related HIV/AIDS have been conducted. Therefore, the proportions of disabled people who have knowledge of various types about HIV/AIDS are not known; the information hardly exists. A few studies which have been done on the prevalence of HIV infection among hearing-impaired populations suggest prevalence equal to or higher than that of the rest of the community (UNAIDS, 2012).

The prevalence of HIV and AIDs among youths especially adolescents with and without disabilities point to the fact that adolescents are sexually active and often take risks with little reflection on the consequences (Fakolade, Adeniyi, & Tella, 2005). Unfortunately, majority of these young adults especially adolescents with hearing impairment are grossly ignorant of consequences of unprotected and unguided sexual activity. This may be due to break in communication and information. However, numerous awareness campaigns have been carried out to inform the youths of the impeding danger of risk sexual behaviour. Majority of these campaigns focused on adolescents without disabilities (Fakolade, Adeniyi, & Tella, 2005; Osowole & Oladepo, 2001). The disabled especially the hearing impaired population is seriously at risk and

stand double jeopardy in relation to information and education on HIV/AIDS (Ademokoya & Oyewumi, 2001).

Doyle (1995) surveyed AIDS knowledge, attitude and behaviour among college deaf students found high and moderate in knowledge and attitude respectively among the participants. The result of this study however, did not provide enough evidence for generalization, but rather addressed the causes of poor knowledge, negative attitude and unhealthy decision making in relation to societal perception and neglect indicated special-needs students, especially those with hearing impairment, unlike non special-needs individuals, acquire less information from sources such as books, casual conversation and television (Ademokoya & Oyewumi, 2004). The reason assigned to this situation is that they experienced some challenges in internalizing verbal language and often confuse some human activities on electronic media because of their auditory dysfunction.

Akinyemi (1998) noted that the deaf adolescents' inability to hear and speak often make it very difficult to disseminate sex information to them. This impediment stems from the fact that most technical and scientific languages to be used have no sign language representation. The consequence is that they are heavily burdened in term of acquisition of information about sexuality and hence engage in risky sexual behaviour. This provides a potential dangerous situation where the uninformed, misinformed and insufficiently informed adolescent with hearing impairment continue to engage in unprotected sexual activities, thus spread the HIV/AIDS virus.

In another related study, Falaye & Moronkola (1999) documented that casual sex, teenage pregnancy, rising incidence of sexually transmitted infections (STIs) and

HIV/AIDS call for a more programmmes to address the issue. Such programme must be the one that will empower the adolescents and adolescents with hearing impairment the necessary skills and information that will positively affect their sexual health.

A recent World Bank Global Survey on HIV/AIDS and Disability indicated that in spite of the fact that they are a high-risk population, people with disabilities have been neglected (Groce, 2004). They are often excluded from HIV/AIDS prevention and outreach programmes for reasons relating to misconceptions or misunderstanding about their sexuality and risk for HIV infection. A number of studies (Job 2004; Wilson & Monaghan, 2006) have also documented the difficulties these people face in utilising information and services from mainstream sources. Consequently, their chances of getting quality information and services about HIV/AIDS prevention or safer sex are minimal (Wilson & Monaghan, 2006; Groce et al, 2007). Deaf people in particular, face greater access problems than other people with disabilities because mainstream sources of information are inaccessible to them (Fedorowicz, 2006; Heyederick, 2006; Wilson & Monaghan, 2006; Groce et al, 2007). They are less likely to obtain information from formal sources such as health professionals, discussions, books, brochures, and television broadcasts, than hearing people (Wilson & Monaghan, 2006). According to Roberts (2006), even the visual information that deaf people receive from television may not be accurate and may be incomplete, meaningless and misconstrued because most of it is not captioned or translated in sign language. It has therefore been estimated that deaf persons are up to 8 years behind the general population in their level of knowledge of disease prevention (Goldstein et al, 2008). In view of the difficulties encountered when accessing information from formal sources such as health

professionals and media, deaf people often turn to informal sources such as friends and family members for information (Heuttel & Ronstein, 2001; Mprah, 2011).

This often has dire consequences when it comes to learning about SRH issues. For instance, Heuttel and Ronstein (2001) observed differences in levels of knowledge pertaining to HIV/AIDS, between deaf American college students and their hearing counterparts. The authors noted that deaf students were less likely to have accurate knowledge because information from informal sources such as friends and family tended to have more factual errors, while hearing students obtained information from their teachers, TV, and reading materials. Although data suggests that deaf people in Ghana have limited knowledge about sexual and reproductive health issues (Tsiboe-Darko, 2008; Poku, 2008), pointed out that little is known about the extent and nature of the problem. The present study attempts to fill the gap by providing some information on the level of knowledge about HIV/AIDS among deaf people who communicate in the Ghanaian Sign Language (GSL). This would add to the existing literature and make information available for policy-making and programme designing.

According to (Adeniyi & Olubukola, 2014) 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 engage in all practices and behaviours that eventually can lead them to contracting HIV/AIDS. 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). This suggests that hearing impaired adolescents face similar risk factors as compared to non disabled 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.

2.3 Risky sexual behaviours and HIV/AIDs contraction

A study by Amos and Olaiwola (2016) showed that the most effective and reliable way to avoid the transmission of STIs is to abstain from sexual activity, or to be in a long – term mutual monogamous relationship with an uninfected partner. While, if sex is a must, the use of condom is more reliable for 88 – 98% to prevent unwanted pregnancy and STIs. The ignorance of the youths on sexual activities constituted a social problem, which to a greater extent threatens their health and future. The youths are exposed to the stringent health illness, such as: sexual transmitted infections and unwanted pregnancy. Sexually transmitted infections (STIs) are the diseases that spread through sexual contact e.g. HIV (*Human Immunodeficiency Virus)* which is transmitted through intimate body fluid contact such: as blood, semen, and virginal secretion and so on (Amos & Olaiwola, 2016).

Similarly, adolescent sexual behaviour has been recognized as an important health, social and demographic concern in the developing world (Mukhopadhyay & Chaudhuri, 2010). Adolescent pregnancy is associated with adverse maternal, fetal and neonatal outcomes (Duvan, et al, 2010; Yadav, et al, 2008). Teenage girls who get

pregnancy suffer from social and economic consequence and they are more likely to drop out of school. Furthermore, unwanted pregnancy poses a big problem among young adults in developing countries (Sahin, 2008; Somba, et al, 2014).

Sunmola (2005) found that men and women reported that condoms hindered their sexual satisfaction, caused health problems for them and reduced their sexual interest. In Nigeria, sexual activity amongst adolescents and young adults is quite high; the practice is now a common disturbing phenomenon. One way of preventing STI's is by abstaining from sexual relationship. Another approach that is more pragmatic is the use of condom. Contraception is the act of preventing conception; this is made possible with the use of birth control methods (Alarape et al. 2008). Studies have suggested that people engage in unprotected sex with little or no regard for STIs and unwanted pregnancies (Ekanem, et al., 2005). Weiner (2006) reported that young women whose partners use condoms every time they have sex are 70% less likely to contract STI's than women whose partners use condom less than 5% of the time (Alarape, et al. 2008: 237).

The risk posed by unprotected sex in young people is reflected in disproportionately high rates of STD infection and unwanted pregnancy (Braverman & Strasburger, 1994; Maxwell, Bastani & Yan, 1995; Rosenthal & Reichler, 1994). Higher rates of STD infection have been associated, in at least one study, with earlier initiation of sexual intercourse (Rosenthal, Biro, Succop, Cohen & Stanberry, 1994). Educating adolescents on contraception, HIV, and STD prevention has been shown to be effective in reducing these unintended consequences (Daures, Chaix-Durand, Maurin, Viala & Gremy, 1989; Nafsted, 1992; National Committee on Health Education, 1978; Vincent,

Clearie & Schluchter, 1987). Unfortunately, parents, although keen to help their children, still do not communicate adequately with them about sex (Geasler, Dannison & Edlund, 1995; Postrado & Nicholson, 1992). Many parents feel inadequate to the task (Geasler et al., 1995). Further, children are often reluctant or too embarrassed to approach parents with the topic (Goldman & Goldman, 1981), and therefore have turned, particularly in more recent times, to more formal sources of sexual health education such as school-based lessons (Wellings et al., 1995).

Young people's vulnerability is associated with several potentially risky situations, including experimental behaviour, initiation into sex, going beyond family traditions, alcohol and drug use and getting involved with different social groups (Bisol et al., 2008). Adolescent egocentrism, belief in their invincibility, the need for self expression and sensation seeking, which reaches its peak in late adolescence and the early twenties, make young people prone to engage in physical, social, financial and legal risk taking behaviours (Plattner, 2010). These behaviours are often part of the transition from childhood to adulthood that is characterised by getting to know oneself, while usually lacking the information, will and skills that would enable young people to avoid high risk behaviours (Odu et al.,2008).

Anderson and Leigh (2010), Klein (2008), and Monaghan (2006) in their respective studies concluded that persons who are deaf may be engaging in higher levels of risky sexual behaviour. Risky behaviour is an important health issue among school age children. Youths are prone to high risky health behaviours because of their susceptibility to peer influence. Oyediran and Oladimeji (2000) reported that they seek information from magazines, newspapers and movies which place the youth at health

risks. Isaiah (2010) reported that risky health behaviours are often exhibited by secondary school students with hearing impairment because majority of them are adolescents who want to engage in risky behaviours like sexual activities, smoking, drinking, stealing, bullying, and all other kinds of behaviours that are inimical to their health. This suggests that risky sexual behavior is not limited to youth but also adolescents with hearing impairment. In addition, Borofice (2004) and Aiyewa (2002) asserted that adult behaviour pattern, including drinking, smoking and sexuality issues are established during the secondary school period, and these constitute the major health problems of the secondary school students. In search for identity and autonomy that is characteristic of secondary school students, risky behaviours frequently come into play. Social factors that are likely to predict risky health behaviours among students with hearing impairment include discrimination, home factor, health awareness, peer influence, and false belief. Economic conditions such as poverty and limited purchasing power could also predict their risky health behavior.

According to Berman, Harris, Enright, Gilpin, Cathers and Bucovy (1999), adolescent with disability may be uninformed or misinformed about sexual matters and safe sex practices. Busari and Danesy (2004) noted that adolescents are at risk because no one, including parents, counsellors or health workers taught them about HIV/AIDS and how to protect themselves and others. The scarcity of materials on reproductive health and personal safety issues and the fact that not many people understand sign language which is their language of communication further compounded the problem.

Okanlawon (2004) argues that most adolescents do not belief that they are at risk. Osowole (2004) reported that many misconceptions about the sexuality of persons

with disabilities exist. Many believe that persons with disabilities are asexual and consequently do not need education about their sexuality. Risky sexual behaviour is a concern for all young adults, deaf or hearing. Perhaps the most accurate assessment of condom use among collegiate adults is conducted by The American College Health Association which administers the National College Health Assessment to a large sample of post-secondary students in the United States (American College Health Association [ACHA], 2010). The measure is administered to randomly selected classrooms among postsecondary institutions in the United States and the data are published in a publicly available format (ACHA, 2010). The published information collected in 2010 included over 100 postsecondary institutions across the United States, sampling over 87,000 students-one of the most representative samples of postsecondary students' health behaviours in research to date (ACHA, 2010). The ACHA measure examines recent sexual behaviour (behaviour within the past 30 days), differentiated by type of sexual contact (oral, vaginal, and anal). Recent findings indicated that most US postsecondary students engage in sexual contact, though few consistently use a condom. For instance, ACHA (2010) indicated that only about half of the participants studied constantly used condoms during vaginal intercourse.

Since 1995, there has been no direct assessment of condom use among deaf young adults. To circumvent this lack of research, the prevalence of HIV within the deaf population may act as an estimate for condom use. Monaghan (2006) examined the data on every individual (deaf or hearing) tested for HIV at state-established centres in Mryland. The analysis of the data showed a stark contrast between deaf and hearing HIV-positive individuals in Maryland: proportionally, the deaf group had twice as many

HIV-positive cases than the hearing group (Monaghan, 2006). When taking into account the estimates of deaf persons living in Maryland against the general population, the author predicted that deaf individuals were ten-times more likely to become infected with HIV than hearing individuals (Monaghan, 2006). Other studies (e.g., Gaskins, 1999; Heuttel & Rothstein, 2001; Kennedy & Buchholz, 1995; Mallinson, 2004; Peinkofer, 1994; Roberts, 2006) have explained through anecdotal evidence that adults who are deaf are at a higher risk for HIV infection. The prevalence of HIV is only an estimate of condom use, though it does suggest infrequent prophylactic use within the deaf population. Although outdated, Doyle (1995) conducted one of the most direct assessments of condom use among the deaf population. Studying deaf college students, Doyle (1995) examined condom use, differentiated by type of sexual contact, vaginal, anal, and oral. The results-similar to patterns found in other studies of condom use among similar-aged and educated participants (e.g., ACHA, 2010)-indicated infrequent condom use among

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).

2.4 Experiences of adolescents with hearing impairments and partners' use of contraceptives

With regard to the use of contraceptive among adolescents with hearing impairment, studies have shown that major factors responsible for the spread of HIV among women, men, boys and girls include harmful socio-cultural practices that violate their rights as well as the dire economic conditions in which they find themselves. The point however must be made that women experience greater level of abuse of their rights than their male counterparts. Studies have shown that exposure to violence is a strong predictor of HIV infection. Gender-based violence which affects women and girls irrespective of their race, ethnicity, class, age, economic or educational status, religious or cultural divide etc. therefore exacerbate women's exposure to HIV infection (Legal Environment Assessment for HIV/AIDS Response in Nigeria, 2015).

The traditional subordinate status of women in many cultures in Nigeria as well as the unequal power relations between them and their male counterparts often make it very difficult for women to negotiate safer sex in marital and other forms of relationships, thereby increasing their level of vulnerability to HIV infection. The cultural practices that impact on women's human rights and leave them vulnerable to HIV&AIDS include female genital mutilation, widowhood rites, wife inheritance, domestic violence, denial of women's inheritance and property rights, poor access to reproductive health (RH) information with a resultant effect of poor health seeking behaviour among others (Legal Environment Assessment for HIV/AIDS Response in Nigeria, 2015).

The conditions of some women make them more vulnerable than others e.g. Women Living with Disabilities, Sex Workers, Women of Racial/Ethnic minorities, Refugees and Internally Displaced Women etc. Often easily forgotten are women with disabilities; they face stigma, discrimination, violence and poverty; in addition to the fact that their sexual and reproductive health issues have not received the desired attention over the years. They have limited access to health and social services; their sexuality has been ignored and their reproductive rights denied. They are seldom included in HIV-prevention, care and support programs, policies and programmes (LEA for HIV/AIDS RN, 2015). According to Louise Arbour and Peter Piot (2006) in the foreword to the International Guidelines on HIV/AIDS and Human Rights "vulnerability to HIV infection and to its impact feeds on violations of human rights, including discrimination against women and violations which create and sustain poverty". The high prevalence of HIV among the key population highlighted above has called for urgent attention.

Dependency on others for survival and morbidity as well as widespread discrimination in access to services often place persons with disabilities at a higher risk of HIV infection (Interagency Coalition on AIDS and Development, 2008). Girls and women of all ages with any form of disability are among the more vulnerable and marginalized of society. Data on issues of persons with disabilities and HIV/AIDS in Nigeria is scarce and level of knowledge of information on HIV and how to prevent infection is adjudged very low among persons with disabilities especially adolescents with hearing impairment (Adeniyi and Olufemi-Adeniyi, 2014).

Several human rights are related to HIV/AIDS. HIV/AIDS can either hinder the enjoyment of such rights or the lack of enjoyment of such rights can make one vulnerable to HIV infection. Such rights have been articulated to include "the right to life; the right to liberty and security of the person; the right to the highest attainable standard of mental and physical health; the right to non-discrimination, equal protection and equality before the law; the right to freedom of movement; the right to seek and enjoy asylum; the right to privacy; the right to freedom of expression and opinion and the right to freely receive and impart information; the right to freedom of association; the right to marry and start a family; the right to work; the right to equal access to education; the right to an adequate standard of living; the right to social security, assistance and welfare; the right to share in scientific advancement and its benefits; the right to participate in public and cultural life; and the right to be free from torture and other cruel, inhuman or degrading treatment or punishment" (OHCHR). Unlike the Court in India, the position of the Nigerian Courts on the enforceability of socio-economic rights is not clearly defined (Aborishade, 2013).

Busari and Danesy (2004) noted that young girls in many countries seek support from men by trading sex as a result of economic hardship. According to them, this practice is encouraged by parental expectation of financial support from their children. They also observed that economic hardship and civil unrest have pushed more and more young boys and girls away from home into towns and cities to look for jobs.

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).

According to Groce, 2003; Health and Disability Working Group, 2004, hearing Impaired people are 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 on 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 with 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 and Olubukola (2014) report 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.

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 who 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 behaviours'(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 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 (Rohleder, 2009). 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 to 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 Counselling (HTC) services are physically inaccessible, do not offer

counselling 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).

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 manoeuvres 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) 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'.

2.5 Measures against HIV/AIDs infection

The youths are prone to diseases; if they get involved in unprotected sex. Orubuloye (2004) assert that, "the young people constituted a high risk group and the number of the young people with HIV/AIDS may have doubled since 1980s". This

statement shows the level of vulnerability of youths to sexually transmitted infections which can actually be averted by adopting necessary measures such as the use of condom and/or sexual abstinence. The youth sexual activeness is coupled with problem of unwanted pregnancy. Idowu & Omotoso (2015), posit that, "the use of contraceptive is basically for the prevention of unplanned pregnancy, early age pregnancies death from illicit abortion, and sexually transmitted infections (STIs). An increase in availability of contraception will lead to decrease in the number of births by the teenage youths".

The highest rates of STIs are found among young adults within the ages of 20 and 24, followed by adolescents aged 15 - 19 years (Wolfers, Zwart & Kok, 2011) and adults in this age categories comprise about 20% of the world's population and they also account for 60% of the new HIV infections each year (UNAIDS, 2010). Although the usage of condoms and abstinence have been recommended as a measure for curtailing the spread of STIs among young adults (Family Health International Youth Lens, 2003) their adoption as a preventive measure is found to be low in Nigeria (FMH, 2008). Condoms were found to be difficult to use for the sexually inexperienced, detract from sensual pleasure and also embarrassing to suggest (Kehinde et al. 2014:53).

Although there have been several attempts, through 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 this drug does is that it 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 also inconveniences the infected person. Therefore, Lindsay (2001) argues that knowing the inconveniences and the challenges involved in acquiring the medicine, the best method to handle HIV/AIDs 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 abstaining 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 behaviours' (Caley, 2004; Lindsay, 2001). The ABC acronym was coined 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 reduce 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 it can expose men to transmittable infections including HIV (Wise, 2007). Paradoxically, most African men are known to be circumcised yet 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/AID virus infection (Wise, 2007).

Use of contraception and STD prevention has been reported to vary across adolescence according to the age at which initiation occurs. Condoms (Kraft, Rise & Træen, 1990) and contraception (Faulkenberry, Vincent, James & Johnson, 1987; Mosher & Bachrach, 1987; Zelnik & Shah, 1983) are more likely to be used the later sex is initiated. Education on these topics has been found to modify that pattern and appears to be more effective if given prior to first intercourse. According to Kisoon et al (2002) a rights-based approach to HIV/AIDS programming "means locating the needs of those infected and affected by HIV/AIDS in human rights that can be claimed and asserted, whatever an individual's, a community's or a government's view on AIDS might be. It means using the language of rights to name and to understand certain practices". Reports

have shown that a rights-based approach to HIV/AIDS offers the best way to respond to the challenges posed to the society by the disease (Kisoon *et al.* 2002).

A rights based approach to HIV/AIDS addresses not just the infection but all issues and circumstances surrounding it. According to Kisoon *et al.*, a check-list of rights ensures 'a greater chance of preventing a skewed response to the pandemic'. In addition to this, a rights-based approach will put at the centre of any response programme, the human beings involved and thereafter the infection. Any comprehensive HIV prevention strategy therefore must include combinations of interventions for populations most at risk for HIV infections (Fatusi, 2007).

The centrality of human rights to any HIV/AIDS response cannot be over emphasized (UNAIDS, 2013). Failure to address the violation of human rights of people living with HIV/AIDS can cause a lot of harm which was why many infected and affected persons died at the initial stages of identification of the disease. The UNAIDS Reference Group on HIV and Human Rights (2013) has emphasized the 'critical need for human rights leadership in a number of areas, such as consistent support for harm reduction, as well as addressing HIV-related stigma and discrimination, and criminalization (i.e., the criminalization of HIV exposure, drug use, sex work and homosexuality)'. A human rights-based response on HIV/AIDS prevention among IDUs requires the implementation of a comprehensive package of nine interventions as defined by WHO, UNODC and UNAIDS and are referred to as harm reduction services for HIV. The components of such programmes are: needle and syringe programmes (NSPs); opioid substitution therapy (OST) and other evidence-based drug dependence treatment programmes; HIV testing and counselling (HTC); antiretroviral therapy

(ART); prevention and treatment of sexually transmitted infections (STIs); condom programmes for people who inject drugs and their sexual partners; targeted information, education and communication (IEC) for people who inject drugs and their sexual partners; prevention, vaccination, diagnosis and treatment of viral hepatitis; prevention, diagnosis and treatment of tuberculosis (TB).

According to UNAIDS (2014), evidence has shown that the most successful HIV prevention intervention among IDUs is one that combined the first four components. Although the National Policy on HIV/AIDS (2009) and the Nigerian Minimum Prevention Package Intervention Implementation Guide (MPPI) commits Nigeria to the provision of harm reduction services to IDUs, this is not backed by law. 'The National Drug Law Enforcement Agency (NDLEA) continues to focus on supply control and demand reduction via seizures and arrests. IDUs are routinely harassed, raided and detained in already overcrowded prisons in the attempt by the NDLEA to control drug availability' (Rhodes et al (2010) in Harm Reduction Int. 2012). Reports including drug surveillance system over the last several decades continue to show that prices of drugs have dropped significantly making access to drugs to be less difficult for users.

In relation to MSM, UNAIDS (2014) posits that to be able to provide evidence-informed and rights based response there must be an understanding that 'structural factors such as societal norms, policies, laws and economic factors influence HIV risk'. Hence, it is absolutely necessary to adopt a multi-sectoral strategy that will ensure supportive legislation, policies and financial commitments; community empowerment; address stigma and discrimination; as well as prevent violence.

Highly beneficial gains will be derived from the following health interventions: comprehensive condom and lubricant programming; behavioural interventions; HIV testing and counselling; sexual and reproductive health services; HIV treatment and care; substance use related harm reduction interventions; prevention and treatment of tuberculosis (TB); prevention and treatment of viral hepatitis (UNAIDS, 2014).

Apart from socialization of the young ones, Low utilization of contraception has also been attributed to limited capacity of the health care system and structure within which family planning services are offered (Masoda & Govebder, 2013). Furthermore, individual factors such as risk perception, fear of side effects, opposition from male partners, health service limitations and insufficient knowledge needed to make informed choices have been reported as barriers for utilization of contraception (Abiodun & Balogun, 2009; Haggan, 2012). One way of preventing STI's is by abstaining from sexual relationship. Another approach that is more pragmatic is the use of condom. Contraception is the act of preventing conception; this is made possible with the use of birth control methods (Alarape et al. 2008). Studies have suggested that people engage in unprotected sex with little or no regard for STIs and unwanted pregnancies (Ekanem, et al., 2005). Weiner (2006) reported that young women whose partners use condoms every time they have sex are 70% less likely to contract STI's than women whose partners use condom less than 5% of the time (Alarape, et al. 2008). Consistent and correct condom use has been shown to be an effective preventive strategy for HIV, STIs, and unwanted pregnancy prevention.

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 neighbour 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 was established to take charge of HIV/AIDs activities in the country. Also, the capacity of Ghana Ministry of Health service was built 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 generalize HIV/AIDs findings in Ghana.

2.6 Relationship between knowledge of HIV/AIDS and sexual behaviours

The disabled are among the poorest, least educated, and most stigmatized of all the world’s citizens. A global study on HIV/AIDS and Disability (Groce, 2004) found that people with disabilities face all known vulnerability factors for HIV and AIDS (poverty, illiteracy, stigma and marginalization), and are at equal or increased risk of

HIV infection compared to their non-disabled peers. Sub-groups such as women, adolescents and orphans were seen to be at even greater risk. To date, however, HIV and AIDS initiatives have rarely targeted individuals with disability or taken into account their unique circumstances and needs.

HIV/AIDS knowledge and health-related behaviour of hearing and deaf indicated wide differences in health-related attitude and behavior (Bisol, Sperb, Brewer, Kato & Shor-Posner, 2008). The deaf were found to be sexually abused and large numbers of female deaf adolescents have AIDS infected friends. A similar revelation was made by Osowole and Oladepo (2001) in their study on knowledge, attitude and perceived susceptibility to AIDS among 304 deaf secondary school students. The result revealed a high level of awareness of HIV/AIDS with demonstrated gap in knowledge of causation, transmission and prevention coupled with low attitudinal disposition. Bekele (2008) and Groce, Yousa Fzai and Van-der Mass (2008) also found that adolescents with hearing impairment have low knowledge of the spread of sexually transmitted infections especially HIV/AIDS. Fakolade, Adeniyi, and Tella (2005) in their study recorded similarity in the awareness of HIV/AIDS by adolescents with and without hearing impairment but discovered a wide gap and disparity in knowledge about HIV/AIDS transmission or spread.

Studies reveal that Knowledge about HIV transmission among urban and rural students from Delhi University reduced high risk behaviours and practices (Kumar et al., 1996). Since young people are at the centre of the epidemic, it is important to document, not only how much they know about HIV/AIDS but to identify factors that are associated with their knowledge or ignorance about HIV/AIDS (Tawil, Vester, &

O'Reilly, 1995). The studies recommended that documentation of the factors that can predict young people's knowledge about HIV/AIDS should be useful to policy makers, organisations, parents and groups with the wherewithal to make a difference in the fight against HIV infection. Knowledge about HIV/AIDS is among the most important tools for fighting the epidemic (Kiragu, 2001) especially among young people who have been identified as a key group for HIV related prevention activities. Until people are knowledgeable about HIV/AIDS and its devastating consequences, all efforts to curb its rapid spread will be in vain (Aggleton, 1996).

A study conducted in Maryland USA shows that Deaf people are 2 to 10 times as likely as their hearing counterparts to be HIV positive. This has been attributed to the challenges deaf people experience including poor access to 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 (Gaskins, 1999; Monaghan, 2003).

HIV prevalence among people with disabilities may be equal to if not greater than infection rates among the non-disabled population. For example, a study conducted in 2003 in Uganda found that over one-third of people with disabilities had a sexually transmitted infection (Mulindwa, 2003). However, a study conducted in Rwanda and Uganda in 2004 indicates that feelings of dependency and low self-esteem among young people with disabilities made them less likely to be able to negotiate safe sex (Yousafzi & Edward, 2004).

In Tanzania, an estimated 4 million people live with disability, almost half of them being children in 2008 (TACAIDS et al., 2009). In poor countries like Tanzania, people with disability are given a low priority for scarce and precious resources for schooling and healthcare. As a result very few disabled people have access to basic services related to HIV/AIDS or even know whether they exist. The majority of people with disabilities are relegated to the fringes of society, where they live in poverty with little access to services and other support.

While the United Nations Convention on the Rights of Persons with Disabilities (CRPD) addresses disability as a human rights issue, disability continues to be seen only as a medical concern. However, social scientists have highlighted the fact that the greatest barriers faced by persons with disabilities are social inequality, poverty, and the violation of their human rights. In many countries across sub-Saharan Africa, where these factors are pervasive, a person who has a disability and who is HIV positive often experiences double discrimination (Yousafzai & Edwards 2004). Some factors that increase vulnerabilities of persons with disabilities to HIV include poverty, lack of education, lack of sex education, lack of knowledge about HIV and safe sex practices, sexual abuse, substance abuse, poor access to health services, and stigma and discrimination (Rohleder et al. 2009). In the past few years, more attention has been given to the issues related to disability and HIV, and there is growing recognition of the heightened vulnerability of persons with disabilities to HIV. As a result, some countries now include disabilities as part of their National HIV Strategic Plans, and some countries in Africa have HIV programs that are either inclusive (i.e., mainstream programs that are accessible for persons with disabilities) or have targeted HIV

programms that are specifically for persons with disabilities (Groce, Yousafzai and van der Maas 2007).

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 behaviours towards HIV/AIDS (Molla et al., 2009).

Studies in many parts of the world have shown 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 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.

2.7 Gender differences in the knowledge of HIV/AIDS and sexual behaviours

Research has shown that female sex workers (FSWs) are disproportionately vulnerable to HIV infection in many parts of the world (Vandepitte et al., 2011). Nzioka (2001) for instance, found out that in Kenya, boys perceive sexual activity as part of their initiation into manhood, and getting a girl impregnated makes one to be respected as a real man, while contracting a sexually transmitted infection is a sign of being initiated into manhood.

According to UNAIDS (2014), “gay men and other men who have sex with men have been profoundly affected by HIV, and have a 13 times higher HIV prevalence than the rest of the population. New HIV infections among men who have sex with men are driving or substantially contributing to national epidemics in all regions, accounting for 10% or more of new infections in Côte d'Ivoire, Ghana and Nigeria; 33% in the Dominican Republic; and 56% in Peru. HIV prevalence among men who have sex with men has been found to be as high as 38% in Jamaica, 25% in Ghana, 43% in coastal Kenya, 25% in Thailand and 19% in both Côte d'Ivoire and Guyana”. Beyrer et al (2013) argues that 'Ignoring this epidemic among all MSM and particularly Black race MSM, amounts to direct or reckless negligent genocide, homophobia and specifically, Black-race phobia and ethnic targeting. For reasons yet unexplained fully by epidemiologists and social scientists, Blacks are disproportionally at greatest risk of infections with HIV and AIDS death. The numbers are simply depressing'. Awareness of HIV is generally high among women and men with rates at 93% and 96% respectively. Awareness is however higher in urban areas (97.3%) than in rural areas (89.2%). Fifty four percent of women and seventy percent of men are aware that

condom usage can help reduce the risk of HIV infection. Rate of awareness of the importance of condom usage in preventing infection does not necessarily correspond with rate of usage (Legal Environment Assessment for HIV/AIDS Response in Nigeria, 2015).

Burgoya and Drumond (2008) report that comparatively, women in Africa are more affected with HIV/AIDS than is the case with their counterpart the men. According to Gahagan (2012) her investigation in Canada indicates that there is an increase in the number of women contracting HIV/AIDS which constitutes the reason for further investigation into gender inequality in the contraction of HIV/AIDS. She goes on point out many societies place the gender role of women in a position which makes it rather difficult for women to protect themselves against HIV/AIDS transmission. For examples, making it difficult to practice safer sex and being unable to avail themselves with HIV prevention services; women have less access to education, income, employment. In the long run these hold the women's limitations in their negotiation for safe sex and access to prevention and available prevention services.

According to research findings, there exists a dichotomy in the HIV/AIDS knowledge genderly. Mwamwenda (2014) examined gender differences in the belief that adolescents are not at risk of HIV/AIDS infection. The investigation comprised 366 male and female participants selected from Kenya, South Africa and Tanzania. There were statistically significant gender differences in the belief that adolescents were not susceptible to HIV/AIDS transmission. In Tanzania, men had a knowledge score of 76.7 per cent compared to a sore of 73.2 per cent for women. Kenya male participants scored 79.8 per cent, whereas women had a score of 80.6 per cent. For South Africa, men

scored 77.4 per cent compared to 73.4 per cent for women. In all the three countries, the gender differences were statistically significant; with males in South Africa and Tanzania outperforming females, whereas in Kenya the female respondents outperformed male respondents. In Nigeria, Aluede, Imhonde, Maliki and Alutu (2005) assessed university students level of knowledge about HIV/AIDS with a sample comprising 900 undergraduate students consisting of 520 male and 380 female students. The results showed that the respondents had a highly favourable knowledge regarding HIV/AIDS. Furthermore, the results showed a statistically significant gender differences in HIV/AIDS knowledge with male students showing higher knowledge of HIV/AIDs than was the case with female participants.

Terry, Mhloys, Masavaure and Adlis (2005) investigated gender differences in HIV/AIDS knowledge among 933 university students in Zimbabwe on the basis of cultural, sociological and economic variables. Male participants expressed the views that: they had the right to dominate women, and that they were the ones to decide the use of condom. In contrast, the women participants acknowledged the gender cultural attitude towards women and went further by asserting their support for women's rights to sexual activity.

In a similar investigation, Ugbona, Kooffeh and Nwauche (2011) examined gender differences in students' knowledge of HIV/AIDS on a sample of 1748 secondary school students aged 12-19 years of age drawn from 12 schools. Their knowledge was high as it stood at 80%. However, there was no gender difference in their knowledge of HIV/AIDS Montosh, Asagwara and Meriamu (2011) carried out a study of 2399 university students in Lagos, Nigeria, in which participants had a moderate knowledge

of HIV/AIDS. It was also reported that female participants were predisposed to contracting HIV/AIDS, because of their engaging in high risk sexual behaviour for financial reasons. In terms of gender difference in HIV/AIDS, no difference of significance was observed. According to a cross-national survey carried out in Ethiopia, Mali and Nigeria 97-98% of men had knowledge of HIV/AIDS compared to 86-90% for women who were just as knowledgeable. Similar survey carried out in Kenya and Madagascar showed gender difference showing that men showed more than women. The study carried out in Rwanda, however, showed no gender difference in HIV difference in HIV/AIDS between females and males.

2.8 Summary

In this chapter, relevant literature on adolescents with hearing impairment (HI) and HIV/AIDs 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/AIDs knowledge and sexual behaviour. Key concepts on knowledge levels of adolescents with hearing impairments on HIV/AIDs, risky sexual behaviours and HIV/AIDs contraction, experiences of adolescents with hearing impairments about their partners' use of contraceptives, measures against HIV/AIDs infection, relationship between knowledge of HIV/AIDS and sexual behaviours, gender differences in the knowledge of HIV/AIDS and sexual behaviours.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology for the study. The following sub-headings were covered:

- Research design.
- Population.
- Sample size.
- Sampling techniques
- Instrumentation.
- Validity.
- Reliability.
- Procedure for data collection.
- Data analysis.

3.1 Research design

Mixed method design was considered most suitable. It was used because the research objectives were designed to cover a wide range of adolescents with hearing impairments. This enabled to gather detailed data on their knowledge and sexual behaviour and practices using multiple data sources for easy triangulation. In this way, quantitative and qualitative methods were used together to counterbalance and complement each other (Denzin 1984; Cohen, et al. 2000; Tashakkori & Teddlie, 2003, 2010; Johnson & Onwugbuzie 2004).

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. The study drew its philosophies freely from both quantitative and qualitative traditions (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). However only three are well known: sequential, concurrent and transformative mixed method designs (2009). In this study, the sequential mixed method design was used. The research design is schematically presented below:

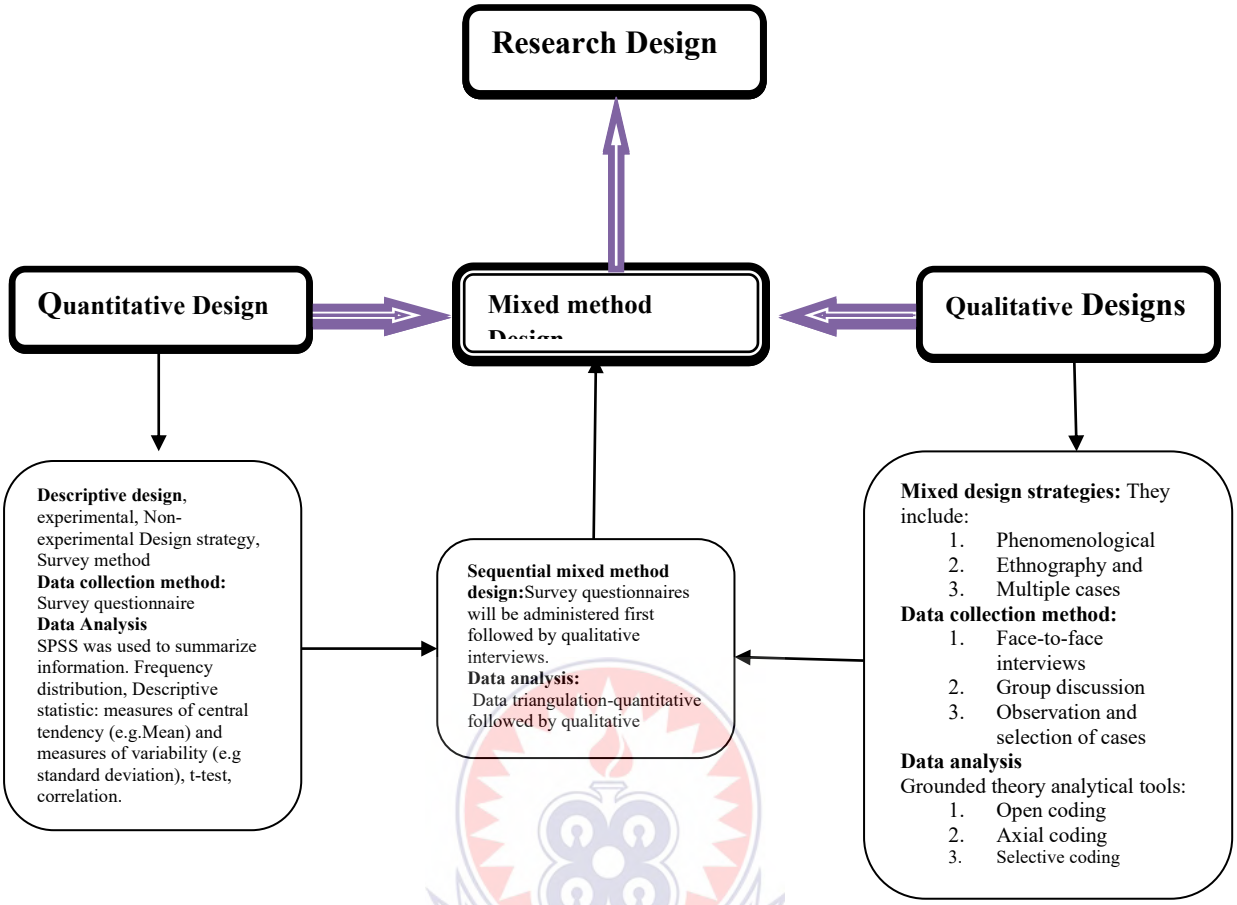


Figure 3: Sequential explanatory mixed method design (adapted from Kuyini, 2013)

The 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, was conducted in phases. Quantitative phase of the research was 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 three 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. 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 used to reach out to many respondents (Punch, 2004; Cohen, et al. 2000). This type of strategy utilized different groups of people who differed 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 behaviours). 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 behaviours.

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.

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 the phenomenology method. It did so to study the students' perspectives on their HIV/AIDs knowledge and sexual behaviours. 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 behaviour, 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 has proven 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 behaviours. 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).

Furthermore, the design indicates that face-to-face interview, semi-structured and group interview were used in the study. The three coding methods of grounded theory and interpretive phenomenological analysis were used to analyse data from qualitative phase of the study.

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

As seen above, the 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 analysed 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 used in this study revealed several benefits. It provided a more comprehensive exploratory and descriptive picture of students with hearing impairments knowledge of HIV/AIDs and their sexual behaviour 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 mono methods 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.

3.2 Population

The population of this study involves all students with hearing impairments in the Ghanaian special schools. The special schools include schools for the deaf, schools for the blind and schools for students with intellectual disabilities. In Ghana, the special

school system is still categorized into the major disability types-School for the blind, deaf, mental retardation and physical disabilities.

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. The break is: 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 endeavour.

The educational needs of students with hearing impairments are mainly cared for in special 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 1). The ages of the student were between 14 and 25 years, they were mostly found at the JHS level of education for the deaf.

3.3.1 Sample size

Bartlet, Kotrlik and Higgins (2001) advised strongly that good research work mush have appropriate and in-excessive sample size. Inappropriate sample size can lead

to sampling bias. To avoid sampling bias in the study, Calderon and Gonzales (2010) sampling size determination formula was used:

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

n = the size of the sample

N =the size of the population

e = the margin of error

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

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

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

$n = \frac{1360}{1+3.4}$, 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) was calculated. This was 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. Table 1 provides a summary.

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	AdjeiKojo 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 1 illustrates the distribution of students according to basic schools for the deaf in Ghana. These schools altogether had a student population of one thousand three hundred and sixty (1360) students with hearing impairment in Ghana.

3.4 Sampling techniques

Here, a description of technique of sample size determination was first discussed followed by the sampling techniques used for the quantitative phase of the study. This

section ends with the description of how research participants for the qualitative phase of the study were selected.

3.4.1 Sampling technique for quantitative phase of the study

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 method was used to select the sample from the sampling frame (Table 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 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 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).

3.4.2 Selection of participants for qualitative study

Selection of participants is an essential step in qualitative research (Onwuegbuzie & Leech, 2007). For this reason, special attention was paid to how participants for the qualitative study were selected. Three types of qualitative sampling

techniques were used: nested sampling technique, convenient and purposive sampling techniques.

3.4.3. Nested sampling techniques

This technique was used to ascertain 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). According to Onwuegbuzie and Leech (2007:222) 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.

The nested sampling design is presented schematically in Figure 4 below:

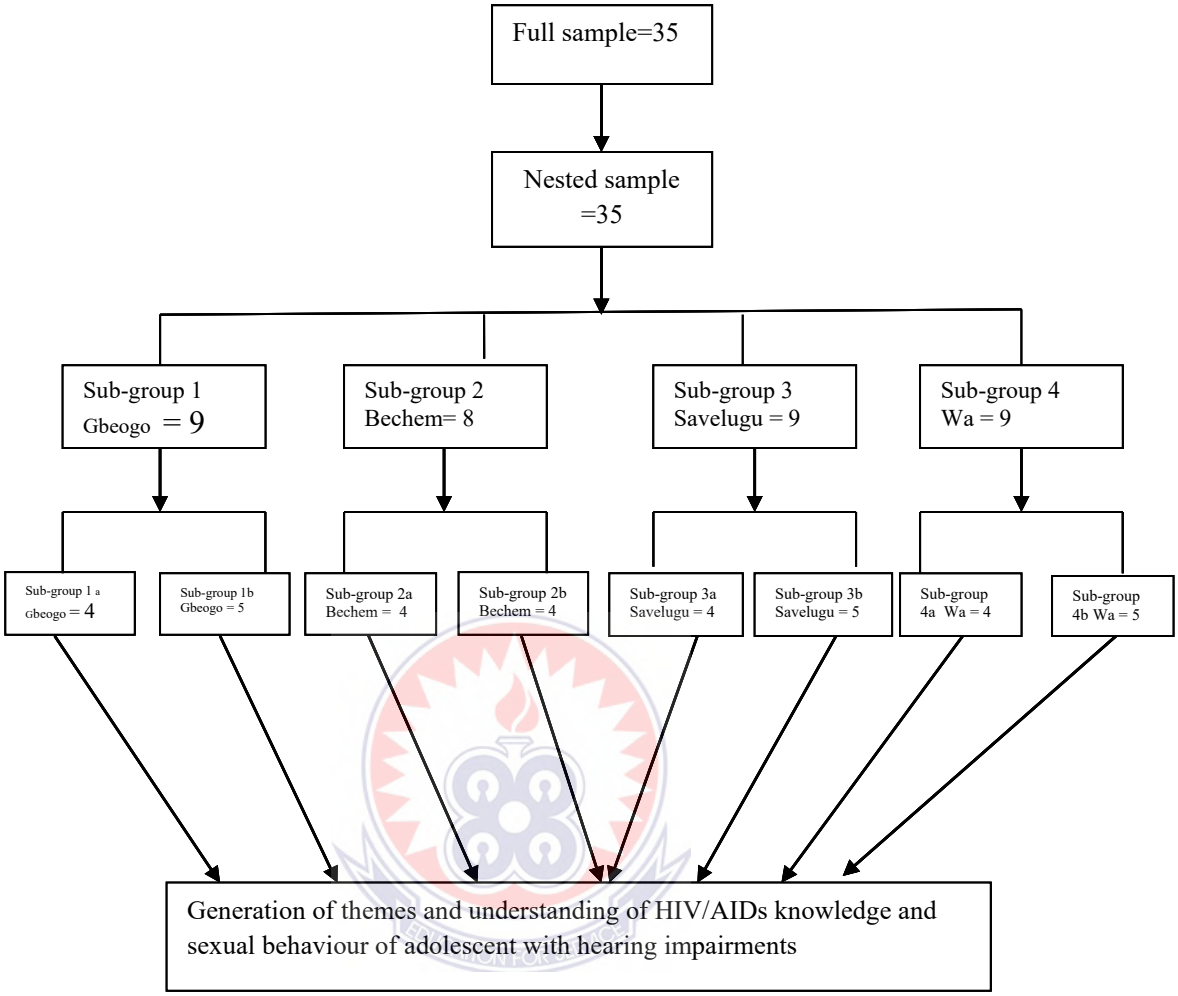


Figure 4: Qualitative sampling design

a. Convenient sampling strategy

At the apex of Figure 4, it can be observed that 35 research participants were selected conveniently from four special schools for the deaf (Gbeogo, Bechem, Savelugu and Wa schools for the deaf). The aim of using convenient sampling technique was to select participants for group interviews/discussion. The next step of the nested sampling was to divided the nested sample size of 35 into 4 sub-groups (sub-group 1, Gbeogo=9; sub-group 2, Bechem = 8; sub-group 3, Savelugu = 9, and sub-group 4, Wa

= 9). These groups took part in the group discussion using the interview-guide (Appendix E3).

Before the group discussion commenced, the purpose and objectives of the study were thoroughly discussed with the participants. 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, Savelugo and Wa, respectively, showed interest to take part in the research. Overall, more than 35 adolescents 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 each came from Gbeogo, Savelugu and Wa, while 8 came from Bechem respectively.

b. Purposive sampling technique

The next step of the nested sampling process was that 16 participants who demonstrated expertise of the subject matter of the study. For this reason, the 16 participants were identified and selected purposively for further detailed interviews. Purposive sampling technique is used in 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.

The processes of selecting the key informants started with the identification of the 16 key informants. They were identified during the group interviews and were 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 participant in the study. Those willing to participant 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.

The central thrust behind the use of the nested sampling procedure 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, 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).

3.5.1 Questionnaire

Research instrument (questionnaire) was developed to help solicit information to achieve the objective of the study. The questionnaire was made up of four (4) sections (section 1, 2, 3 and 4). Items on the questionnaire we developed through extensive review of literature on the knowledge of adolescents with hearing impairments about HIV/AIDs, risky sexual behaviours, condom usage during sex, safe guard against HIV/AIDs infection, relationship between Knowledge of HIV/AIDS and sexual behaviours and gender difference in knowledge of HIV/AIDS as well as sexual behaviours. Experts in the field were also consulted for their input. Guidelines, rules and recommendation for constructions of items on the questionnaire 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 questions should 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 items to determine the internal consistency of the items. The aim was to find out if the items were reliable and could yield consistent results. The output of the SPSS indicated that the items on the instrument were realisable with an average Alpha Cronbach reliability Co-efficient of .822, which indicates high 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 items used are discussed in section 3.4.3 of this chapter. The survey instrument consists of the following:

3.5.1.1 Background information

Section one of the questionnaire (see appendix E) was made up of twelve (12) demographic items. The items included participants' age, level of education, gender, sexual partner etc. The items 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 behaviour/practices will differ significantly due to their background variables).

3.5.1.2 HIV and AIDS knowledge Scale (HAK Scale)

Section two of the questionnaire captured items meant to accomplish the objective of the research question one (To find out the knowledge level adolescents with hearing impairments have about HIV/AIDs in selected special schools in Ghana). The section initially had 24 items, made up of several personal statements, describing participants' knowledge of HIV and AIDS. These statements demanded of the participants 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 pre- test and the confirmatory reliability test, the items reduced to 14, indicating good item reduction. An example of the items is presented. Table 2 provides a summary of the items on knowledge

Table 2: Items on knowledge level

knowledge level	SD	D	N	A	SA
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

SD=Strongly, Agree D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree

Table 2 shows that the scale reads from 1 to 5, where 1,2,3,4 and 5 represents "strongly agree; somewhat agree; neither agree nor disagree; somewhat disagree; and strongly disagree" respectively.3.5.1.2.

3.5.1.3 Sexual behaviour rating scale (SBR scale)

Section two of the research questionnaire was made up of individual statements about participants' sexual behaviour or practices *(SBR items)*. The SBR, made up of 13-items. These items were constructed specifically to achieve research objective two (2). Twenty-four (24) items on sexual behaviours/practices were developed through extensive literature review. The items were made up of series of personal statements from which participants were to choose one response to register their level of agreement or disagreement. Table 3 for example, highlights the items on sexual behaviour.

Table 3: Sexual behaviours

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

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

3.5.2 Interview

The qualitative instrument used for soliciting information for research was the interview-guide. It made the extraction of detailed information from students with hearing impairment very easy. The interview-guide was 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 behaviour/ practices.

e) Prevention of HIV/AIDs

f) Challenges/problems faced by persons with hearing impairment

Similar to the questionnaire, an interview-guide was developed via extensive literature review on HIV/AIDs, contraction and prevention of HIV/AIDS. Semi-structured interviews and naturalistic interviews were used to obtain data for all the items in the interview-guide.

3.6 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.

3.6.1 Validity of the quantitative 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 for deletion and addition of some items. For example, some items on behaviour scales which were originally captured and titled attitude scales were recommended to be part of sexual behaviour scale (Appendix D4). Supervisors 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 pre-tested in Savelugu School for the deaf. The central idea for pre-testing the instrument 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 pre-test also paved the way for Cronbach Alpha reliability test and factor analysis to be performed on the instruments.

3.6.2 Reliability of quantitative instruments

The reliability and factor analysis were performed to assess the consistency and the number of factors found in the items. The reliability was performed twice: during the pre- test and when the actual study was conducted. The second test was performed for confirmatory purposes. With the first reliability test (pre-test), the items in the sexual behaviour scale (*SB items*) were 10, and 5 items were deleted when the reliability test was performed. The result of the internal consistency (Cronbach alpha) of *SB item* was found to be 0.78, indicating a good data reduction (Warner, 2008). In addition to the reliability test, factor analysis was conducted to assess how the individual items were correlated with other items. The result of the factor analysis (appendix,) was found to have two factors. The first variable in factor one (1) had a highest loading of .88, the second variable had .77, the third variable had .68 while the fourth variable had .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 had salient loading above 0.44. Factors were defined based on the factor loading. Thus, a variable was considered salient if its loading factor was above 0.44. A variable was considered salient in determining a factor when the variable loadings are above 0.44 (Comrey, 1973; Acton & Miller, 2009).

Considering the number of variables in the *SB items* (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 items were again deleted, indicating good data reduction (Warner, 2008). Finally, the result of the reliability indicated Cronbach Alpha of .812 accounting for 12 items is illustrated in Table 4.

Table 4: Item on sexual behaviour (SB item)

Sexual behaviour	**1**	**2**	**3**
When I test for HIV/AIDS my results will be known to my colleagues	0.855		
I usually attend HIV/AIDS meetings, work	0.720		
I believe western medicine has a cure for AIDS	0.614		
I like attending HIV/AIDS meetings, workshops and seminars	0.566		
having sex with a virgin can cure you of AIDS	0.443		
I avoid risky sexual partners		0.758	
I can have many sexual partners once in use a condom		0.688	
. If I do HIV test, people will discriminate me if they found that I am HIV positive		0.576	
using a condom shows my partner that in care about him/her			0.809
my partner and I will not use a condom once we agree not to have sex with anyone			0.607
I can use the same toilet facility with the HIV positive people			0.535

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 items. The result showed three (3) factors with had values greater than 1.0, accounting for 50.449% of the total variance in scores (Appendix). Also, was 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 & Miller, 2009).

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

Table 5: 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 items (Table 5), the test revealed three (3) factors with values greater than 1.0 (Table 5), 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 were reliable.

3.6.3 Establishing validity and trustworthiness of qualitative instrument

According to Denzin and Lincoln as cited in Onwuegbuzie and Leech, (2007) if qualitative research is to the 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.

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.

3.6.3.1 Credibility

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

Again, 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 analysing 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 (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, the researcher was allowed to collect reliable data through in-depth interview with the research participants, hence, meeting trustworthiness and credibility criteria.

3.6.3.1 Dependability

Although qualitative research has 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.

3.6.3.2 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 in reducing investigator effect.

Furthermore, confirmability 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 immediately 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 include or delete. 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.

3.6.3.3 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. In depth descriptions' of the teachers' stories were, therefore, used to establish the accuracy of the findings and to control some of the "backyard" research issues.

3.7 Procedure for data collection

In this section, a discussion of how the researcher negotiated field access, access to research participants, ethical consideration and data collection methods are discussed.

3.7.1 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.

3.7.2 Access to participants

Hamersley and Atkinson (1996) 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 where the research was carried out, participants were informed. The heads of the school took the researcher round the classes (JHS 1, 2 and 3) to introduce the researcher to teachers and students and discuss with them the purpose of the research. Participants were informed of the research objective and that it was not compulsory. Many students volunteered to participate in the study after the discussion. To ensure that all participants understood the material, two teachers were assigned by the head teacher to support researcher in the administration of the questionnaire. The main role of this teacher was help in signing for the students who had difficulties in understanding the questionnaire.

After the survey questionnaire were retrieved and analysed, some of the students who met the criterion explained 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 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.

3.7.3 Ethical consideration

Students' knowledge of HIV/AIDs and sexual behaviour is a sensitive topic and requires, to some extent, an invasion into personal environment of the research participants. Therefore, I have 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 means 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.

3.7.3.1 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 duel 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 opportunity to the researcher to alleviate any form of anxiety the participants were likely to develop 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 schools. In addition to the group debriefing session, key

informants who were selected to participate 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, and respect for the rights of the research participants' legality of withdrawing from the research project without any legal bindings etc.

3.7.3.2 Informed consent

Participants were appropriately informed about the importance of the 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 chose not to participate in the study, for whatever reason, they would 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.

3.7.3.3 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.

3.8 Data collection methods

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

3.8.1 Questionnaire

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 as 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 and returned. Twenty nine (29) 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 were that its construction and distribution was very easy and inexpensive, and confidential information was also given freely.

3.8.2 Interviews

Face-to-face (individual) and group interviews were also used to extract 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 for the researcher to select participants (15) with deep knowledge and experiences of HIV/AIDs to be included in the individual interviews. Each group discussion took about 1 to 1 hour 30 minutes. 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. There were many reasons for which individual and group interviewees were used. The researcher was able to observe the non-verbal reactions or behaviour of the participants; the researcher and the participants could ask for further clarifications in case of misunderstanding of the questions; the method yield detailed information about the subject matter study.

3.9 Data 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.

3.9.1 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) 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.

3.9.2 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: Figures, 2 and 3); and scattergram/ scatterplott procedure. In this study, the stated procedures used were performed on age distribution; gender distribution; HIV/AIDs Knowledge distribution as well as risky Sexual behaviour 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.

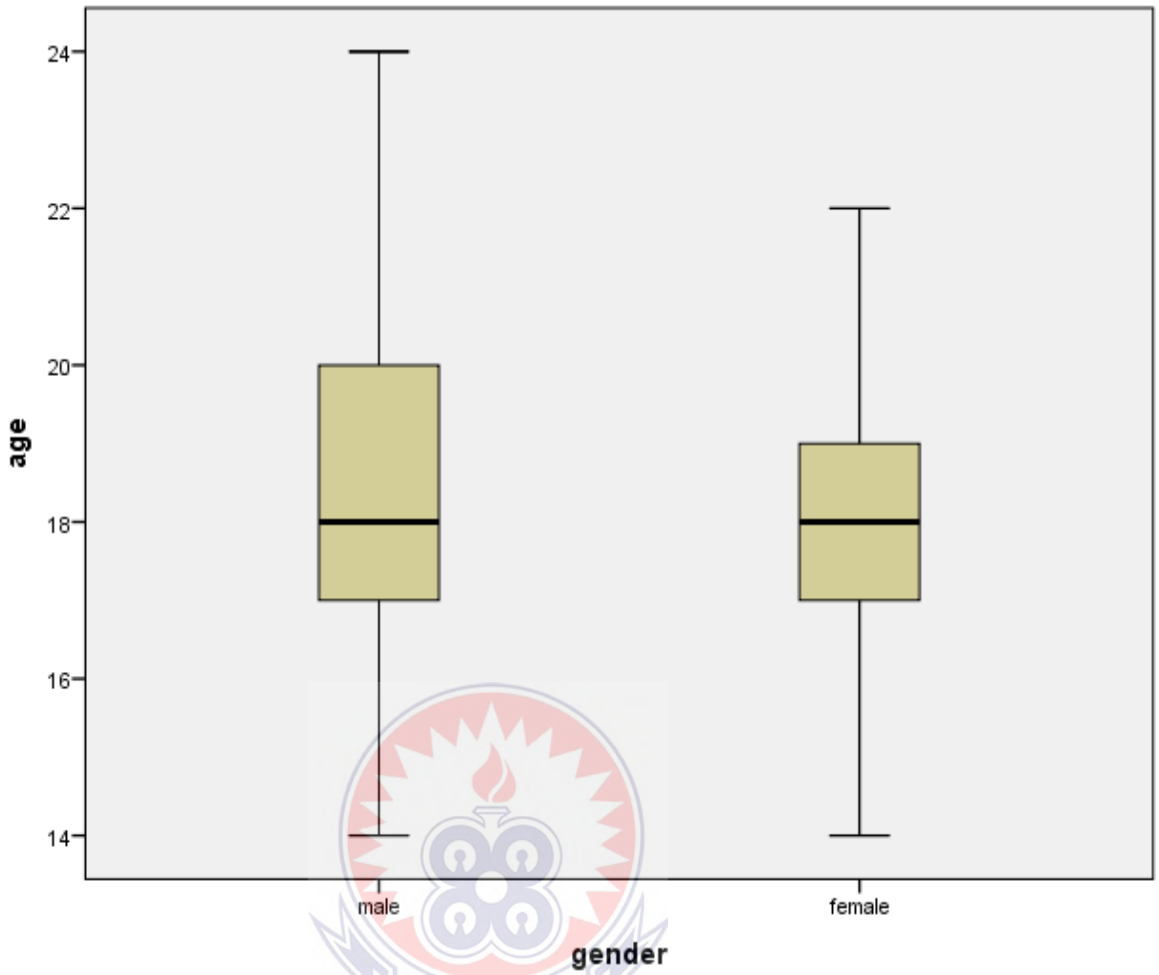


Figure 5: Boxplot from explore procedure

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 represents lower quartile (25th percentile) for each distribution, suggesting that 50 percent of the cases lie within this rage. 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 behaviour variables were examined thoroughly prior to final analysis.

3.9.3 Normality of sample distribution

In addition to data screening, normality of age, HIV/AIDs Knowledge and Risky sexual behaviour 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 behaviour 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 behaviour 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 behaviour 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 behaviour distributions were below two.

3.9.4 Meeting statistical assumptions

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).

3.9.5 Data analysis

Quantitative and qualitative data collected were analysed using quantitative and qualitative data analysis procedure.

3.9.5.1 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 behaviour sales. Confirmatory statistical tests were performed to test significant differences and relationship using t-test and analysis of variance (ANOVA) and Pearson 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 analysing the data:

3.9.5.2 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 since they both have set of systematic and transparent procedures for data

analysis. The procedures comprised of state 1, 2, and 3. In Table 6: categories and sub categories generated from the qualitative data analysis are presented.

Table 6: Qualitative data categories

Research question	Main categories	Sub-Categories
Question 1: What knowledge do adolescent with HI have about HIV/AIDs in selected special schools in Ghana?	1. 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: What sexual behaviours place adolescents with HI at risk of contracting HIV/AIDS in some special schools in Ghana ?	2. 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
Question 3: What experiences do adolescent with HI have about their partners' use of contraceptive (e.g. their use of condom during sex)?	3. 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
Question 4: In what ways do adolescents with hearing impairments guard themselves against HIV/AIDs infection in selected special schools in Ghana?	4. How the protective mechanisms against HIV/AIDs are used	4. Persuading sexual partners to use condom 5. The use of traditional medicine 6. Engaging in reduced frequency of sexual intercourse with strangers 1. Avoidance of high-risk sexual activities/relationship 2. The use of traditional medicine 3. Persuading sexual partners to use condom 4. Washing genitals after sex
Question 5: What is relationships between adolescents with HI' knowledge of HIV/AIDs and their sexual behaviour.	5. Gender Differences in HIV/AIDs Knowledge	1. Source of information on HIV/AIDS
Question 6: In what ways do female and male adolescents with HI' knowledge of HIV/AIDs and their sexual behaviour differ?	5. Gender differences in students' sexual behaviours	1. Boys engaging in more risky sexual behaviours

3.9.5.3 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 closely examined 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 (Table 4), 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 the following guide lines were strictly followed:

a) Interviewees' responses were compared, grouped and labelled according to similar responses.
b) The labelled responses were again categorized 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).

3.9.5.4 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 branded 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.

3.9.5.5 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 way. 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.

3.10 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 and interviews). Validity and reliability for quantitative and qualitative were discussed. The chapter delineated the type of qualitative and quantitative data analytical strategies used. In it, descriptive statistic, analysis of variance, and the grounded theory analysis procedures were to be applied to analyse 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 to investigate students' knowledge of HIV/AIDs, risky sexual behaviours 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 in selected special schools in Ghana?
2. What sexual behaviours place adolescents with hearing impairments at risk of contracting HIV/AIDs in selected schools in Ghana?
3. What experiences do adolescents with hearing impairments have about their partners' use of contraceptives (e.g. their use of condom during sex) in selected special schools in Ghana?
4. In what ways do adolescents with hearing impairments guard themselves against HIV/AIDs infection in selected special schools in Ghana?
5. What is the relationship between adolescents' Knowledge of HIV/AIDS and their sexual behaviours?
6. In what ways do male and female adolescents with hearing impairments knowledge of HIV/AIDS and their sexual behaviours differ?

Therefore, the results presented in this chapter start with respondents' background data followed by data on research question one through to research question five and result of the hypotheses. The chapter 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. Table 7 provides information on the age of participants.

Table 7: Age of respondents (N=310)

Age	Frequency	Percentage
10-14	5	1.6
15-20	261	84.2
21-25	44	14.2
Total	**310**	**100.0**

Source: Field data (2015)

The results in Table 7 indicate that majority of the research respondents were between the 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. The gender of the participants is highlighted in Table 8

Table 8: Gender of respondents (N=310)

Gender	Frequency	Percentage
Male	176	56.8
Female	134	43.2
Total	**310**	**100.0**

Source: Field data (2015)

Table 8 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 HIVAIDs than their female counterparts. The level of education of the participants is discussed in Table 9

Table 9: Level of education

Level	Frequency	Percentage
Basic 7	135	43.5
Basic 8	126	40.6
Basic 9	49	15.8
Total	**310**	**100.0**

Source: Field data (2015)

Table 9 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. Table 10 describes the location of the participants.

Table 10: Location of respondents

Regions	Frequency	Percentage
Northern Region	62	20
Upper East Region	98	31.6
Upper West Region	107	34.5
Brong-Ahafo Region	43	13.9
Total	**310**	**100.0**

Source: Field data (2015)

Table 10 shows that majority, 107 (34.2%), of the respondents came from the Upper west region. This was followed by 98 (31.6%), 62(20%) and 43 (13.9%) representing respondents from Upper East Region, Northern region and Brong Ahafo Region respectively.

Table11: Relationship

Response	Frequency	Percentage
Yes	154	49.7
No	156	50.3
Total	310	100.0

Source: Field data (2015)

Table 11 shows that (156) 50.3% of the respondents were in active relationships while 49.7 %(154) respondents were not in relationship at the time of the study.

Table 12: Duration of relationship

Duration	Frequency	Percentage
Weeks	80	25.8
Months	114	36.8
Years	116	37.4
Total	**310**	**100.0**

Source: Field data (2015)

Regarding the duration of the respondents' relationship, Table 12 shows that (116) 37.4% of the participants have been in relationship for 11 years, whereas (80) 25.8% and (114) 36.8 % said they were in relationship for some weeks and months respectively.

Table 13: Age of fist sexual experience

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

Source: Field data (2015)

Table 13 shows that (154) 49.7% of the sampled respondents had their first sexual experiences intercourse when they were between 10 and 12 years old. Ninety-seven (31.3%) 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 experienced sex prior to their fourteenth birth day.

Table 14: Sexual experience with other partners

Response	Frequency	Percentage
Yes	125	40.3
No	185	59.7
Total	**310**	**100.0**

Source: Field data (2015)

Table 14 reports that (125) 40.3% 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.

Table 15: Frequency of sexual intercourse with multiple partners in a month

Sexual with multiple partners	Frequency	Percentage
1	148	47.7
2	108	34.8
3	22	7.1
4	11	3.5
5	15	4.8
6	3	0.6
7	2	0.6
9	1	0.1
14	1	0.1
Total	**310**	**100.0**

Source: Field data (2015)

As Table 15 indicates, only one (3%) 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, respectively. 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 Research question one

What knowledge do adolescents with hearing impairments have about HIV/AIDs in selected special schools for the Deaf in Ghana?

To answer this question, the data for the research question were gathered using Likert Scale types items and made up 14 items on HIV/AIDs Knowledge scale.. The data are presented in Table 16:

Table 16: Descriptive statistic for HIV/AIDS knowledge scale

HIV/AIDS knowledge	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 16 shows the means (M) and standard deviation (SD) scores for the items of HIV/AIDs Knowledge items (HAK items). The HAK items was scored and interpreted as follows: 1= Strongly Agree; 2 =somewhat Agree; 3 =Neither agree or disagree; 4 =Somewhat 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 of the HAK items. The result was 2.16 (M) with a standard deviation of 1.45. Since the composite mean score (2.16) was less than 3 on a 5-point rating scale, it meant 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 items. This implied that students' knowledge of HIV/AIDs in this regard was limited. For example, Table 14 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 had no knowledge or limited knowledge of HIV/AIDs. Similarly, Table 14 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 16 that the item (13) has a mean score less than 3 on the 5-point scale. This suggests that students agreed with the statement and therefore had 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), (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 had on HIV/AIDs. However, the Table 16 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 findings suggest that students with HI had limited knowledge of HIV/AIDs and demonstrated some gaps in their knowledge of HIV/AIDs transmission.

However, the research question one was further investigated qualitatively to help get a clear picture of the adolescents with HI knowledge of HIV/AIDs infection. Constant comparative analytical approach of grounded theory methodology was used to discover themes and categories from the data. The themes generated from the data included 'HIV/AIDs is real'; Going 'raw and losing guard'; HIV/AIDS is the work of witches; Sharing food, cloth and sneezing; and Sharp objects. These five central themes are presented below.

4.2.1 'HIV/AIDs is real'

While adolescents with HI had multiple perspectives on the causes of 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 as 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 maybe 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 SSDR7).

The reality of HIV/AIDS among students with HI was very strong. Although some of them said that they used condoms to protect themselves against 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 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 wash 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 boyfriend 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).

4.2.3 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 wicked people. She alleged that her sister died of AIDs, but its cause was not from sexual intercourse:

> Sister was very sick and we sent her to hospital they said that she was suffering from AIDs. I didn't believe it but people were also saying the same thing. 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 every day 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 by 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.

4.2.4 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 to avoid them. I won't have anything to do with AIDs people (Verbatim comment by WSDR 8).

4.2.5 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 knifes 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 it comes 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 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. Participants are also

believe that HIV/AIDS is the work of witches and people can get it through sharing of sharp objects, sharing food, cloth and sneezing as well as going 'raw and losing guard'

4.3 Research question two

What sexual behaviours place adolescents with hearing impairments in selected schools in Ghana at risk of contracting HIV/AIDs?

Data were collected using self-developed sexual behaviour scale. The scale is made up of 12 items on a 3-point rating scale, where: 1 = Always; 2 = Sometimes; and 3 = Not at all. The result is presented below:

Table 17: Descriptive statistic for risky sexual behaviour scale

Risky sexual behaviour	N	Min	Max	M	SD
I do have unprotected sex with more than partners	310	1	5	2.26	1.26
I do have sex with risky sexual partners once they agree to stay with me	310	1	5	2.43	1.24
I do use contraceptives	310	1	5	2.40	1.21
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
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
I do have sex with partners who have multiple sex partners	310	1	5	2.22	1.27
I do have oral, vaginal or anal sexual contact without a condom	310	1	5	2.17	1.19
I use condoms inconsistently with many sexual partners	310	1	5	2.25	1.23
I do engage in deep kissing with strangers	310	1	5	2.49	1.31
1. I believe western medicine has a cure for AIDS	310	1	5	2.32	1.20
2. I believe traditional medicine has a cure for AIDS	310	1	5	2.28	1.26
3. 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 17 shows the means and standard deviation scores for the items of risky sexual behaviour scale (RSB items). Mean sexual behaviours scores were based on a 3-point rating scale (RSB), 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 RSB items divided by the total items on the RSB scale. Based on this, Table 17 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 behaviours.

Considering the mean scores of individual items, however, the result in Table 17 indicates that item 9 (I do engage in deep kissing with strangers); 2(I do have sex with 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 had a mean scores of less than 3 on the RSB Scale, it suggests that most adolescent with hearing impairment sometimes engaged in risky sexual behaviours. Similarly, 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) had 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 sexually transmitted disease including HIV/AIDs. The rest of the items on the RSB Scale require similar interpretations.

Adolescents with hearing impairments risky sexual behaviours were measured by adding all items on a RSB items divided by the total items on the RSB scale. Based on this, Table 17 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 behaviours.

4.4 Research question three

What experiences do adolescents with hearing impairments have about their partners' use of contraceptives (e.g. their use of condom during sex) in selected special schools in Ghana?

This question aimed at finding out experiences of adolescent with HI had about their partners' sexual activities. Data were gathered using in-depth interviews and analysed using interpretive phenomenological analysis and three coding methods of grounded theory methodology (open, axial and selective coding systems).

Key themes that emerged from the investigation included: unprotected sexual intercourse; sex with multiple partners; embarrassment in purchasing and using contraceptives; condom use as a sign of infidelity/promiscuity; and condom insertion error and reduction of sexual pleasure. The results are presented below:

4.4.1 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 hearing impaired student who had been in a relationship with her boyfriend for over five years narrated her experiences with her boyfriend's sexual behaviour and said:

> I used not to allow my boyfriend to have sex with me without a condom. But this was not easy; he does not understand me 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 girlfriends because they refused to have unprotected sex with him. First, he quarrelled with the first girlfriend for denying him sex because he did not have money to buy a condom that day. The second girlfriend 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 girlfriend didn't trust me and always wanted me to use a condom. 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).

4.4.2 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 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 boyfriend and I love each other very much. However, there is a very serious problem. He can't stay without a girl. He has many girlfriends. I'm very sure of that. Before we became friends he used to have three girlfriends. 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 girlfriend 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 I 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).

4.4.3 Embarrassment in purchasing and using contraceptives

Further analysis of students' responses reveals that most students with hearing impairment 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 how her boyfriend 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 focused group discussion, similar issues were raised. Most group members believed that one of the barriers to condom use among most students with hearing impairments was the embarrassment. They said:

> Most students feel embarrassed to use condom especially after sexual intercourse, they contend that one has to remove it and make 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).

4.4.4 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 behaviour, 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 cloud the use of condom and other contraceptives 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 student 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 girlfriend without a condom. They can give AIDs anytime. But with condom you are safe (Verbatim comment by SSDR 7).

It was clear from the extracts of the responses made by students on their experienced adolescents with hearing impairments have about their partners' use of 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).

4.4.5 Condom insertion error and reduction of sexual pleasure

As part of the 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 of 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 SSDR 3).

Another student said:

> The satisfaction one gets without a condom is not the same when we use condom. 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.

4.5 Research question four

In what ways do adolescents with hearing impairments guard themselves against HIV/AIDs infection in selected special schools in Ghana?

The aim of this research question was to find out how adolescent with HI guard themselves against HIV/AIDs infection. Data were gathered using in-depth interviews and analysed using interpretive phenomenological analysis and the three coding methods (open, axial and selective coding) of grounded theory methodology. The key thematic areas the responses focused 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.

4.5.1 Having total abstinence from sex or sex with only virgins

The analysis of the responses reveals that most students with hearing impairments had multiple views of HIV/AIDs transmission, its cure and prevention strategies. While some of the students were fully aware of the fact that HIV/AIDs had no cure and could be contracted through sexual intercourse, others had little or no knowledge about this. For this reason, quite a number of them believed that the best way to prevent HIV/AIDs 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 guard against HIV/AIDs 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 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 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.

4.5.2 Washing genitals after sex

Some students with hearing impairment in this study also said that they best way they could prevent HID/AIDs infection was to wash their genitals after sexual intercourse. This belief appeared to be deeply rooted in the belief system and sexual life of some students with hearing impairments. One of 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 okay with it. I have never had problems with that. I think is pretty safe (Verbatim comment by GSDR 5).

A female student, who had 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 that could expose them to AIDs virus.

4.5.3 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 those who engaged 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, yet they 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 SSDR 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.

4.5.4 Persuading sexual partners to use condom

Unwillingness to and inconsistent use of condoms were prominent behaviours exhibited among students with hearing impairments. Nevertheless, some 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 my 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.

4.5.5 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 contracting 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 SSDR 5).

Another student from northern region said:

> My people say that AIDs is not a new sickness. It has been there for decades. 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 Dagbombas, they will tell you that they have the medicine (Verbatim comment by SSDR 1).

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

> Traditionally there is a medicine known as 'daɓire 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 have such a problem you take some and give some to the lady as well (Verbatim comment by SSDR 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 evil 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 on top; this form of sex does not bring diseases. However, these modern forms 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.

4.5.6 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 was further explored. 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 my 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 statements 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 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 to guard them against HIV/AIDs infection.

4.6 Research question five

What is the relationship between adolescents' Knowledge of HIV/AIDS and their sexual behaviours?

This question sought to find out whether there is a relationship between adolescents' Knowledge of HIV/AIDS and their sexual behaviours. Quantitative data gathered through the questionnaires were used to answer this research question. The items on sexual knowledge and those of sexual behaviour were correlated. To further ascertain whether the relation was statistically significant, both null and alternative hypothesis were tested and the correlation Coefficient were calculated. The Person product-moment correlation coefficient (*r*) is presented in Table 18.

Table 18: Correlation between HIV/AIDS knowledge and sexual behaviour

		HIV AIDS Knowledge	**Sexual Behaviour**
HIV AIDS Knowledge	Pearson Correlation	1.00	**.850****
	Sig. (2-tailed)		**.000**
	N	310	**310**
Sexual Behaviour	Pearson Correlation	.850**	1.00
	Sig. (2-tailed)	.000	
	N	310	310

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)

A Pearson correlation was performed to assess whether or not risky sexual behaviour could be related to not having adequate knowledge of HIV/AID among students with hearing impairments. Scores were obtained from summed items of

HIV/AIDs Knowledge (HKS) and risky sexual behaviour items (SB), administered to 310 students with hearing impairment in selected special schools in Ghana. Preliminary examination of the box plots, stem and leaf scatter gram (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 was not judged severe enough to require data transformation or removal of outliers. The scattergram of risky sexual behaviour 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.

4.7 Research question six

What ways do male and female adolescents with hearing impairments knowledge of HIV/AIDS and their sexual behaviours differ?

This question sought to find out whether ways do male and female adolescents with hearing impairments knowledge of HIV/AIDS and their sexual behaviours differ. Data were gathered using in-depth interviews and analysed using interpretive phenomenological analysis and the three coding methods (open, axial and selective coding) of grounded theory methodology. The key thematic areas the responses focused

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 sex. 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 neighbours. Because of their disabilities, concerned parents, siblings and neighbours 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 sexually transmitted diseases. For this reason, females with hearing impairment are often educated about unwanted teenage pregnancy, HIV/AIDs and related diseases.

4.8 Testing hypotheses

Hypotheses one

H_0: There is no relationship between adolescents with hearing impairments' Knowledge of HIV/AIDs and their sexual behaviour.

H_a: There is significant relationship between adolescents with hearing impairments' Knowledge of HIV/AIDs and their sexual behaviour.

To test Hypotheses one, data were collected using self-developed HIV/AIDS knowledge scale, risky sexual behaviour scales and demographic variables of adolescents with HI were used.

Table 18, provides information on the relationship between students' knowledge of HIV/AIDS and risky sexual behaviour. The result indicates that there was a statistical significant relationship between students' knowledge of HIV/AIDs and Risky Sexual behaviour. Pearson r (308) = +.85, p < .00 (two tailed) [2]. The r^2 was .73; thus, indicating about 73% of the variances in risky sexual behaviour 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 behaviours, whereas those with limited knowledge of HIV/AIDS are most likely to engage in risky sexual behaviours/practices. Based on the analysis, it is safe to reject the Alternative hypothesis (H_1) in favour of the Null hypothesis (H_0) which posited that there was a significant relationship between adolescents with hearing impairments' knowledge of HIV/AIDs and their risky sexual relationships.

4.9 Hypotheses two

H_0: HIV/AIDs knowledge level and sexual behaviours of male and female adolescents with hearing impairments do not differ significantly.

H_a: HIV/AIDs knowledge level sexual behaviours of male and female adolescents with hearing impairments differ significantly.

The aim of hypotheses two was to confirm whether or not the sexual behaviours of females and males differ significantly. Confirmatory statistic (independent t-test) of the inferential statistic was employed to test the hypotheses. Test results are presented in 4.8.1 and 4.8.2.

4.9.1 HIV/AIDs knowledge level of male and female adolescent with HI

Test results of level of HIV/AIDs knowledge of female and male adolescent with HI are presented in Table 19 and 20 respectively.

Table 19: Group statistics for adolescents' knowledge of HIV/AIDs

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

Source: Field data, 2015

Table 20: Independent sample t test for HIV/AIDs knowledge

		Levine's Test for Equality of Variances							95% Ci	
		F	Sig	t	Df	Sig 2-t	MD	Std	Low	Upp
Students' knowledge of HIV/AIDS	Equal variances assumed	13.26	0	12.51	308	.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 20 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 46.27 with a standard deviation of 13.05. Undoubtedly, the group statistics 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. Levine's test for equality of variances showed a non significant 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 statistical significant difference between male and female students' knowledge of HIV/AIDs, was rejected in favour 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.

On the qualitative part of the study, the findings on students' sexual behavioural 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 behaviours 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 seventeen (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 student with a multiple sexual partners said: "*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 shy to say don't use condom*". Most of the 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 penis with water after sex. They use to say that condom is not good and sweat and it cannot stop AIDS.

However, 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.

4.10 Hypothesis three

H_0 There is no difference between male and female adolescents with hearing impairments sexual behaviour.

H_a there is no difference between male and female adolescents with hearing impairments sexual behaviour.

The aim of these hypotheses three was to confirm whether or not the sexual behaviours of females differ significantly. Confirmatory statistic (independent t-test) of

the inferential statistic was employed to test the hypotheses. Test results are presented in Table 19 and 20.

4.10.1 Differences between male and female adolescents' sexual behaviours

Test results of sexual behaviours of female and male adolescent with HI are presented in Table 20 and 21 respectively.

Table 21: Group statistics for adolescent sexual behaviour

Construct	Gender	N	Mean	Std.	Std Error
	Male	176	39.15	11.11	0.84
Students' risky Sexual Behaviour	Female	134	26.37	9.45	0.82

Source: Field data, 2015

Table 22: Independent sample t test for adolescent sexual behaviour

		Levine's Test for Equality of Variances							95% Ci	
		f	Sig	t	Df	Sig 2-t	MD	Std	Low	Upp
Students' knowledge of HIV/AIDS	Equal variances assumed	5.895	.02	10.69	308.0	0.00	12.78	1.20	10.42	15.13
	Equal variances not assumed			10.92	304.19	0.00	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 behaviours. Male and female participants were 176 and 134, respectively. Preliminary data screening (see table 19) 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 test the hypothesis using the t test row of the results. The mean risky sexual behaviour differed significantly, t (308.00) = 10.69, $p = .00$ ($p < 0.05$), two tailed. Mean risky sexual behaviour 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 favour of the Null hypothesis (H_0) and conclude that a statistically significant difference exits between male and females' risky sexual behaviours.

4.11 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. The participants were made up 176 Males and 134 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 behaviour, the study found that students with hearing impairments sometimes engage in risky sexual behaviour, making them susceptible to HIV/AIDs infection. Their sexual behaviours included unprotected sexual intercourse with familiar people 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 FINDINGS

5.0 Introduction

This chapter presents the discussion of findings on the study. The discussions are organized according to the research questions raised. This study investigated students' knowledge of HIV/AID, risky sexual behaviours/practices and how they used their knowledge of HIV/AIDs to guard themselves against HIVI/AIDs infection. Central to this research was measuring the relationship between students' knowledge of HIV/AIDs and the risky sexual behaviours 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/AIDs; risky sexual behaviour; relationships between students' knowledge of HIV/AIDs and their risky sexual behaviours; male and female students' HIV/AIDs knowledge and sexual behaviour differences. The discussion ends with students' phenomenological experiences of their sexual partners' use of contraceptives (e.g. condom) during sex.

5.1 Background data

This study involved three hundred and ten (N=310) adolescents with hearing impairment. The samples were taken from fifteen (15) special schools in the Northern, Upper East, Upper 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 adolescents 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 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.

5.2 Discussion

5.2.1 Findings on research question 1

Analysis of the data reveals that some of the participants were 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. Participants are also believe that HIV/AIDS is the work of witches and people can get it through sharing of sharp objects, sharing food, cloth and sneezing as well as going 'raw and losing guard'. This suggest that there is a gap in knowledge of HIVand AIDS among hearing impaired adolescents majority of whom are grossly ignorant of consequences of unprotected and

unguided sexual activity. This may be due to difficulty in communication and information. In spite of numerous awareness campaigns made to inform the youths of the impeding danger of risk sexual behaviour. Majority of these campaigns focused on adolescents without disabilities (Fakolade, Adeniyi, & Tella, 2005; Osowole & Oladepo, 2001). The disabled especially the hearing impaired population is seriously at risk and stand double jeopardy in relation to information and education on HIV/AIDS (Ademokoya & Oyewumi, 2001).

The finding is also consistent with Doyle's (1995) conclusions that high and moderate in knowledge and attitude respectively among the participants was not enough evidence for generalization, but the causes of the poor knowledge, negative attitude and unhealthy decision making were generally linked with societal perception and neglect as regard dissemination of vital information. The special-needs students, especially those with hearing impairment, unlike non special-needs individuals, acquire less information from sources such as books, casual conversation and television (Ademokoya & Oyewumi, 2004). This is because they experienced some challenges in internalizing verbal language and often confuse some human activities on electronic media because of their auditory dysfunction. Therefore, they have unmet needs regarding these sources.

The challenges faced by the disable youth with regard to sourcing information is confirmed in the World Bank Global Survey on HIV/AIDS and Disability. The survey reveals that in spite of the fact that they are a high-risk population, people with disabilities have been neglected (Groce, 2004). They are often excluded from HIV/AIDS prevention and outreach programmes for reasons relating to misconceptions or misunderstanding about their sexuality and risk for HIV infection (Job 2004; Wilson

& Monaghan, 2006). A number of studies have also documented the difficulties these people face in utilising information and services from mainstream sources (Wilson & Monaghan, 2006; Groce et al, 2007). Consequently, their chances of getting quality information and services about HIV/AIDS prevention or safer sex are minimal (Wilson & Monaghan, 2006; Groce et al, 2007). Deaf people in particular, face greater access problems than other people with disabilities because mainstream sources of information are inaccessible to them (Fedorowicz, 2006; Heyederick, 2006; Wilson & Monaghan, 2006; Groce et al, 2007). They are less likely to obtain information from formal sources such as health professionals, discussions, books, brochures, and television broadcasts, than hearing people (Wilson & Monaghan, 2006). According to Roberts (2006), even the visual information that deaf people receive from television may not be accurate and may be incomplete, meaningless and misconstrued because most of it is not captioned or translated in sign language. It has therefore been estimated that deaf persons are up to 8 years behind the general population in their level of knowledge of disease prevention (Goldstein et al, 2008). In view of the difficulties encountered when accessing information from formal sources such as health professionals and media, deaf people often turn to informal sources such as friends and family members for information (Heuttel & Ronstein, 2001; Mprah, 2011).

The study further reveals that HIV/AIDS is the work of witches and people can get it through sharing food, cloth and sneezing as well as going 'raw and losing guard'. This finding is an indication of poor knowledge level which is consistent with view that suggests that 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 engage in all practices and behaviours that eventually can lead them to contracting HIV/AIDS (Adeniyi & Olubukola, 2014). This perhaps is attributable to the fact that hearing impaired adolescents '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).

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. Similar to the assertions of Tun's et al., (2013) that lack of knowledge, inaccessibility to information (sex cation, information about safe sex practices) and poverty, persons with disabilities are exposed to HIV and vulnerable to sexually abused. Since knowledge about HIV/AIDS is one of the instruments used to prevent it lack of it could lead to it acquisition or transmission. 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 behaviours towards HIV/AIDS (Molla et al., 2009). Studies in many parts of the world have established 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 (Zakayo Lwelamira, 2011; Molla et al., 2009; Tolulope & Oludare, 2009; Lema et al., 2008; Seifu et al., 2006). This study however, found that although adolescents with hearing

impairments have some amount of knowledge about HIV/AIDs they also demonstrate some level of ignorance by attributing the mode of transmission to the work of witches, sharing food, cloth and sneezing. This development is consistent with the reported low level of awareness of the disease amongst the disabled and hearing impaired in some parts of Africa. The 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. 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 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.

5.3 Discussion

5.3.1 Findings on research question 2

The study found that adolescents with HI sometimes engaged in risky sexual behaviours that place them at high risk of getting HIV/AIDs infection. This finding fits well in the argument of Amos and Olaiwola (2016) that the youths are exposed to the stringent health illness, such as: sexual transmitted infections and unwanted pregnancy. The vulnerability of young people is associated with several potentially risky situations, including experimental behaviour, initiation into sex, going beyond family traditions, alcohol and drug use and getting involved with different social groups (Bisol et al., 2008). Adolescent egocentrism, belief in their invincibility, the need for self expression

and sensation seeking, which reaches its peak in late adolescence and the early twenties, makes young people prone to engage in physical, social, financial and legal risk taking behaviours (Plattner, 2010). These behaviours are often part of the transition from childhood to adulthood that is characterised by getting to know oneself, while usually lacking the information, will and skills that would enable young people to avoid high risk behaviours (Odu et al.,2008). Adolescent's sexual behaviour has been recognized as an important health, social and demographic concern in the developing world (Mukhopadhyay & Chaudhuri, 2010).

The justification of the risky sexual behaviour among the youth is explained in the work of Sunmola (2005) which found among other things that men and women reported that condoms hindered their sexual satisfaction, caused health problems for them and reduced their sexual interest. However, one way of preventing STI's is by abstaining from sexual relationship. Another approach that is more pragmatic is the use of condom (Alarape et al. 2008). Studies have suggested that people engage in unprotected sex with little or no regard for STIs and unwanted pregnancies (Ekanem, et al., 2005). Weiner (2006) reported that young women, whose partners use condoms every time they have sex, are 70% less likely to contract STI's than women whose partners do use condom. The risk posed by unprotected sex in young people is reflected in disproportionately high rates of STI (Braverman & Strasburger, 1994; Maxwell, Bastani & Yan, 1995; Rosenthal & Reichler, 1994).

Educating adolescents on contraception, HIV, and STD prevention has been shown to be effective in reducing these unintended consequences (Daures, Chaix-Durand, Maurin, Viala & Gremy, 1989; Nafsted, 1992; National Committee on Health

Education, 1978; Vincent, Clearie & Schluchter, 1987). This finding is also consistent with Anderson and Leigh (2010), Klein (2008), and Monaghan (2006) who concluded in their respective studies that persons who are deaf may be engaging in higher levels of risky sexual behaviour. Their susceptibility is attributable to peer influence. Buttressing this point, Isaiah (2010) reported that risky health behaviours are often exhibited by secondary school students with hearing impairment because majority of them are adolescents who want to engage in risky behaviours like sexual activities, smoking, drinking, stealing, bullying, and all other kinds of behaviours that are inimical to their health.

Perhaps the susceptibility of adolescents with disabilities to risky sexual behaviours could be explained using Berman, Harris, Enright, Gilpin, Cathers and Bucovy (1999) argument that adolescents with disabilities may be uninformed or misinformed about sexual matters and safe sex practices. Other explanations regarding the susceptibility of adolescents with disabilities to HIV/AIDS infections are found in the work of Okanlawon (2004) who argued that most adolescents do not believe that they are at risk. Osowole (2004) reported that many misconceptions about the sexuality of persons with disabilities exist. Many believe that persons with disabilities are asexual and consequently do not need education about their sexuality.

Other studies (e.g., Gaskins, 1999; Heuttel & Rothstein, 2001; Kennedy & Buchholz, 1995; Mallinson, 2004; Peinkofer, 1994; Roberts, 2006) have explained through anecdotal evidence that adults who are deaf are at a higher risk for HIV infection. 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).

5.4 Discussion

5.4.1 Findings on research question 3

Key themes that emerged from the findings of the research question three included: unprotected sexual intercourse; sex with multiple partners; embarrassment in purchasing and using contraceptives; condom use as a sign of infidelity/promiscuity; and condom insertion error and reduction of sexual pleasure. Among other things that were revealed during the interview indicate that female adolescent with hearing impairment complained of their sexual partners' insistence to have unprotected sexual intercourse. The analysis further revealed that their partners often had sexual intercourse with multiple partners. It also emerged that their sexual partners experience embarrassment when purchasing contraceptives such as condom. Others considered the use of condom as a sign of infidelity/promiscuity. Partners also encountered formidable challenges in inserting condom correctly. Some of them felt that condom use reduces sexual pleasure. This is an indication that most male students detest the use condom. Furthermore, the study has also uncovered that both female and male students with hearing impairments appeared not to have much knowledge of female condoms.

The emerging findings of the third research question could be essentially important in explaining the experiences of adolescent about their partners' use of

contraceptive. Perhaps their experiences may have relationship with current factors responsible for the spread of HIV among women, men, boys and girls. These include harmful socio-cultural practices that violate their rights as well as the dire economic conditions in which they find themselves (Legal Environment Assessment for HIV/AIDS Response in Nigeria, 2015). The traditional subordinate status of women in many cultures as well as the unequal power relations between them and their male counterparts often make it very difficult for women to negotiate safer sex in marital and other forms of relationships, thereby increasing their level of vulnerability to HIV infection (Legal Environment Assessment for HIV/AIDS Response in Nigeria, 2015). Indeed, dependency on others for survival and morbidity as well as widespread discrimination in access to services often place persons with disabilities at a higher risk of HIV infection (Interagency Coalition on AIDS & Development, 2008). Girls and women of all ages with any form of disability are among the more vulnerable and marginalized of society.

Other emerging issues in the findings of the study can be explained in the context of the several human rights issues that are related to HIV/AIDS. HIV/AIDS can either hinder the enjoyment of such rights or the lack of enjoyment of such rights can make one vulnerable to HIV infection. Such rights have been articulated to include the right to life; the right to liberty and security of the person; the right to the highest attainable standard of mental and physical health; the right to non-discrimination, equal protection and equality before the law; the right to freedom of movement; the right to seek and enjoy asylum; the right to privacy; the right to freedom of expression and opinion and the right to freely receive and impart information; the right to freedom of

association; the right to marry and start a family; the right to work; the right to equal access to education; the right to an adequate standard of living; the right to social security, assistance and welfare; the right to share in scientific advancement and its benefits; the right to participate in public and cultural life; and the right to be free from torture and other cruel, inhuman or degrading treatment or punishment (OHCHR, 2008).

The reality of the emerging issues in the findings of the study can be situated in Busari and Danesy (2004) dispute that young girls in many countries seek support from men by trading sex as a result of economic hardship. According to them, this practice is encouraged by parental expectation of financial support from their children. They also observed that economic hardship and civil unrest have pushed more and more young boys and girls away from home into towns and cities to look for jobs. This invariably limits their negotiation power for safe sex practices. 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. The 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). 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 with 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 and Olubukola (2014) report 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.

Some of the explanation advanced indicate that 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 behaviours'(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 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 (Magadi, 2013; Mayer et al., 2012; Parker, 2002). All these 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 (Rohleder, 2009). 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 to 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).

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).

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 manoeuvres 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) 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).

5.5 Discussion

5.5.1 Findings from research 4

The aim of research question four was to find out ways by which adolescents with hearing impairments safe guard against HIV/AIDs infection Data gathered using in-depth interviews were analysed using interpretive phenomenological analysis. The key thematic areas emerged from the study regarding the research question 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 sexual intercourse with strangers. These findings are partially consistent with Idowu and Omotoso (2015) who posit that, the use of contraceptive is basically for the prevention of unplanned pregnancy, early age pregnancies, death from illicit abortion, and sexually transmitted infections (STIs). An increase in availability of contraception will lead to decrease in the number of births by the teenage youths. The findings further corroborate the assertions

of Family Health International Youth Lens (2003) which suggests that although the usage of condoms and abstinence have been recommended as a measure for curtailing the spread of STIs among young adults, their adoption as a preventive measure is found to be low (FMH, 2008). Perhaps the claim of Kehinde et al. (2014) that condom were found to be difficult to use for the sexually inexperienced, detract from sensual pleasure as well embarrassing to suggest are the main reasons why adolescent with hearing impairment find it difficult using it to protect themselves.

Avoidance of high-risk sexual activities/relationship; persuading sexual partners to use condom; the use of traditional medicine and engaging in reduced sexual intercourse with stranger are all indications that adolescent with hearing impairment are somewhat aware of the dangers of contracting HIV and AIDS through unprotected sex and that HIV/AIDS has no cure. In spite 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 this drug does is that it 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).

Contrary to the findings of the study Weiss (2007) argues that another recognized HIV preventive measure is male circumcision. Paradoxically, most African men are known to be circumcised yet 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/AID virus infection (Wise, 2007).

Use of contraception and STD prevention has been reported to vary across adolescence according to the age at which initiation occurs. Condoms are more likely to be used in later sex (Kraft, Rise & Træen, 1990; aulkenberry, Vincent, James & Johnson, 1987; Mosher & Bachrach, 1987; Zelnik & Shah, 1983). Education on these topics has been found to modify that pattern and appears to be more effective if given prior to first intercourse. According to Kisoon et al (2002) a rights-based approach to HIV/AIDS programming "means locating the needs of those infected and affected by HIV/AIDS in human rights that can be claimed and asserted, whatever an individual's, a community's or a government's view on AIDS might be. It means using the language of rights to name and to understand certain practices". Reports have shown that a rights-based approach to HIV/AIDS offers the best way to respond to the challenges posed to the society by the disease (Kisoon *et al.* 2002).

The centrality of human rights to any HIV/AIDS response cannot be over emphasized (UNAIDS, 2013). Failure to address the violation of human rights of people living with HIV/AIDS can cause a lot of harm which was why many infected and affected persons died at the initial stages of identification of the disease. The UNAIDS

Reference Group on HIV and Human Rights (2013) has emphasized the 'critical need for human rights leadership in a number of areas, such as consistent support for harm reduction, as well as addressing HIV-related stigma and discrimination, and criminalization (i.e., the criminalization of HIV exposure, drug use, sex work and homosexuality)'. A human rights-based response on HIV/AIDS prevention among IDUs requires the implementation of a comprehensive package of nine interventions as defined by WHO, UNODC and UNAIDS and are referred to as harm reduction services for HIV. The components of such programmes are: needle and syringe programmes (NSPs); opioid substitution therapy (OST) and other evidence-based drug dependence treatment programmes; HIV testing and counselling (HTC); antiretroviral therapy (ART); prevention and treatment of sexually transmitted infections (STIs); condom programmes for people who inject drugs and their sexual partners; targeted information, education and communication (IEC) for people who inject drugs and their sexual partners; prevention, vaccination, diagnosis and treatment of viral hepatitis; prevention, diagnosis and treatment of tuberculosis (TB).

According to UNAIDS (2014), evidence has shown that the most successful HIV prevention intervention among IDUs is one that combined the first four components. Although the National Policy on HIV/AIDS (2009) and the Nigerian Minimum Prevention Package Intervention Implementation Guide (MPPI) commits Nigeria to the provision of harm reduction services to IDUs, this is not backed by law. 'The National Drug Law Enforcement Agency (NDLEA) continues to focus on supply control and demand reduction via seizures and arrests. IDUs are routinely harassed, raided and detained in already overcrowded prisons in the attempt by the NDLEA to control drug

availability' (Rhodes et al (2010) in Harm Reduction Int. 2012). Reports including drug surveillance system over the last several decades continue to show that prices of drugs have dropped significantly making access to drugs to be less difficult for users.

In relation to MSM, UNAIDS (2014) posits that to be able to provide evidence-informed and rights based response there must be an understanding that 'structural factors such as societal norms, policies, laws and economic factors influence HIV risk'. Hence, it is absolutely necessary to adopt a multi-sectoral strategy that will ensure supportive legislation, policies and financial commitments; community empowerment; address stigma and discrimination; as well as prevent violence.

Highly beneficial gains will be derived from the following health interventions: comprehensive condom and lubricant programming; behavioural interventions; HIV testing and counselling; sexual and reproductive health services; HIV treatment and care; substance use related harm reduction interventions; prevention and treatment of tuberculosis (TB); prevention and treatment of viral hepatitis (UNAIDS, 2014).

Apart from socialization of the young ones, Low utilization of contraception has also been attributed to limited capacity of the health care system and structure within which family planning services are offered (Masoda & Govebder, 2013). Furthermore, individual factors such as risk perception, fear of side effects, opposition from male partners, health service limitations and insufficient knowledge needed to make informed choices have been reported as barriers for utilization of contraception (Abiodun & Balogun, 2009; Haggan, 2012). One way of preventing STI's is by abstaining from sexual relationship. Another approach that is more pragmatic is the use of condom. Contraception is the act of preventing conception; this is made possible with the use of

birth control methods (Alarape et al. 2008). Studies have suggested that people engage in unprotected sex with little or no regard for STIs and unwanted pregnancies (Ekanem, et al., 2005). Weiner (2006) reported that young women whose partners use condoms every time they have sex are 70% less likely to contract STI's than women whose partners use condom less than 5% of the time (Alarape, et al. 2008: 237). Consistent and correct condom use has been shown to be an effective preventive strategy for HIV, STIs, and unwanted pregnancy prevention.

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 neighbour 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 was established to take charge of HIV/AIDs activities in the country. Also, the capacity of Ghana Ministry of Health service was built 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 generalize HIV/AIDs findings in Ghana.

5.6 Discussion

5.6.1 Findings from research 5

The central aim of this question was to find out whether or not there is a relationship between knowledge of HIV/AIDs and sexual behaviours of adolescent with hearing impairment. A Pearson correlation was performed to assess whether or not risky sexual behaviour could be related to not having adequate knowledge of HIV/AID among students with hearing impairments. Scores obtained indicated a positive linear relationship. The positive sign implies positive relationship, implying that students who had knowledge of HIV/AIDS tended not to take risky sexual behaviours, whereas those with limited knowledge of HIV/AIDS are most likely to engage in risky sexual behaviours/practices

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 way because they had no or limited knowledge of HIV/ AIDS and how it is transmitted. In this case, their knowledge of HIV/AIDS has an impact on their sexual behaviours. Had they accurate knowledge of HIV and its various ways of transmission, they would have probably behaved 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 is transmitted. Therefore, it is safe to conclude that knowledge of HIV/AIDs predicts the sort of sexual behaviours people exhibit towards their sexual partners.

With this knowledge of HIV/AIDs, 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. The findings further authenticated the earlier studies in which differences were observed in terms HIV/AIDS knowledge and health-related behaviour of hearing impaired and deaf (Bisol, Sperb, Brewer, Kato & Shor-Posner, 2008). Contrary to Osowole and Oladepo (2001) findings in a study of knowledge, attitude and perceived susceptibility to AIDS among 304 deaf secondary school students, this study however found that a high level of awareness of HIV/AIDS with demonstrated gap in knowledge of causation, transmission and prevention. The finding further commensurate the previous studies on knowledge level which concluded that adolescents with hearing impairment have low knowledge of the spread of sexually transmitted infections especially HIV/AIDS (Bekele, 2008; Groce, Yousa Fzai & Van-der Mass, 2008), this study recorded similarity in the awareness of HIV/AIDS among adolescents with hearing impairment. The study also discovered a wide gap and disparity in knowledge about HIV/AIDS transmission or spread which is also consistent with (Fakolade, Adeniyi, & Tella, 2005).

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 behaviours towards HIV/AIDS (Molla et al., 2009). 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 Lwelamira, 2011; Molla et al., 2009; Tolulope & Oludare, 2009; Lema et al., 2008; Seifu et al., 2006).

5.7 Discussion

5.7.1 Findings on research question six

This question sought to find out whether male and female adolescents with hearing impairments knowledge of HIV/AIDS and their sexual behaviours differ. Data were gathered using in-depth interviews and analysed using interpretive phenomenological analysis and the three coding methods. The study revealed a rather surprising conclusion in the sense that 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 sex. This finding contradicts Kennedy et al. (2007) which concluded that male students had more knowledge of HIV/AIDs than female but is consistent with Feiring (2000) which suggests 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.

5.8 Differences in sexual behaviour/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 engaging 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. 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 were all initiated by male students with HI.

5.9 Discussion of hypotheses one

Hypotheses one intended to test whether or not there was a significant relationship between adolescent with hearing impairments' knowledge of HIV/AIDs and their sexual behaviour. The section of the questionnaire containing items on the HIV/AIDs knowledge and risky sexual behaviour were used to test this hypothesis. The result indicates that there was a statistical significant relationship between students' knowledge of HIV/AIDs and Risky Sexual behaviour. Pearson r (308) = +.85, p < .00 (two tailed) [2]. The r^2 was .73; thus, indicating about 73% of the variances in risky sexual behaviour could be associated to 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 behaviours, whereas those with limited knowledge of HIV/AIDS are most likely to engage in risky sexual behaviours/practices. Based on the analysis, it is safe to reject the null hypothesis (H_0) in favour of the alternative hypothesis (H_1) which posited that there was a significant relationship between adolescents with hearing impairments' knowledge of HIV/AIDs and their risky sexual relationships. This is a confirmation of the assertion that 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). The implication of this supposition is that with relevant, 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 behaviours towards HIV/AIDS (Molla et al., 2009). Although studies in many countries such as Ghana, Tanzania, Swaziland and other countries in Africa showed high level of awareness amongst the youth, there was however reports of

very low level of awareness of the disease amongst the disabled and hearing impaired. The 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, some studies show 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 Lwelamira, 2011; Molla et al., 2009; Tolulope & Oludare, 2009; Lema et al., 2008; Seifu et al., 2006).

5.10 Discussion of hypotheses two

The aim of hypotheses two was to ascertain whether there is significant difference between male and female adolescents with hearing impairments knowledge of HIV/AIDs or not. An independent sample *t* test was performed to assess whether or not there was a gender difference in mean HIV/AIDs Knowledge scores. The test revealed that the difference in HIV/AIDs Knowledge score was found to be statistically significant, t (308.00) = 12.51, p = .00 ($p < 0.05$), two tailed. The mean score of HIV/AIDs Knowledge for female (M=29.21, SD= 10. 18) was less than that of males (M = 46.27, SD = 13.05). This study suggests that male students with hearing impairments' knowledge of HIV/AIDs are significantly different from that of the females. Therefore, the null hypothesis (H_0) which claimed that there was no statistical significant difference between male and female students' knowledge of HIV/AIDs, was rejected in favour of the alternative hypothesis (H_1), which asserted that there was a significant difference between male and female students' knowledge of HIV/AIDs. This

revelation is constant with the findings of Mwamwenda (2014) which concluded that there exists a dichotomy in the HIV/AIDS knowledge genderly. There were statistically significant differences in terms of the belief that adolescents were not susceptible to HIV/AIDS transmission. The revelation is also in congruence with Aluede, Imhonde, Maliki and Alutu (2005) in Nigeria, which assessed both males and females students' level of knowledge about HIV/AIDS and concluded that although both males and females had a highly favourable knowledge regarding HIV/AIDS, there was however a statistically significant gender differences in HIV/AIDS knowledge with male students showing higher knowledge of HIV/AIDs than females. The finding is however contrary to Ugbona, Kooffeh and Nwauche (2011) which found no gender differences in students' knowledge of HIV/AIDS. This assertion is also held by Montosh, Asagwara and Meriamu (2011) in their study of students in Lagos, Nigeria, which concluded that participants had a moderate knowledge of HIV/AIDS.

5.11 Discussion of hypothesis three

An independent *t* test was performed to assess if there was a difference between the two independent groupings (female and male risky sexual behaviours. The mean score of risky sexual behaviour differed significantly, t (308.00) = 10.69, p = .00 ($p <$ 0.05), two tailed. Mean risky sexual behaviour 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 null hypothesis (H_0) in favour of the alternative (H_1) hypothesis and conclude that a statistically significant difference exits between male and females' risky sexual behaviours. This revelation finds basis in the work of Oladokun, Jiboye, and Akichemi's (2010) on in-school students' HIV awareness and sexual

behavior in which they assert that knowledge about HIV and sexual practices plays an important role in the prevention of HIVAIDS transmission. Perhaps the argument of Terry, Mhloys, Masavaure and Adlis (2005) that males claim that they had the right to dominate women, and that they were the ones to decide the use of condom provides explanation of rationale behind the gender difference in terms of sexual behavior. The gender parity in sexual behavior has also been explained in the work of Montosh, Asagwara and Meriamu (2011) in which they observed that female were predisposed to contracting HIV/AIDS, because of their engaging in high risk sexual behaviour for financial reasons, Wong, Chin, Low and Jaafar (2008) in spite of their similarity in knowledge level of HIV/AIDS. behaviour change on the part of men and women presents the most effective way of controlling transmission and infection of HIV/AIDS (Durojaiye, 2011). It is possible to infer that the differences in gender behavior may be related to the findings of Burgoya and Drumond (2008) that comparatively, women in Africa are more affected with HIV/AIDS than is the case with their counterpart the men.

5.12 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. 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, it was tested to find out whether there were any significant differences between knowledge of HIV/AIDs;

sexual behaviours of male and female students with HI. 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

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary conclusions and recommendation for the study.

6.1 Summary of findings

This study explored HIV/AIDs knowledge and sexual behaviours of adolescents with hearing impairments (HI) in some special schools in Ghana. This study employed mixed method designs to achieve its objective. Cluster sampling techniques was used to sample size. Self-constructed questionnaire, which was made up of HIV/AIDs Knowledge and sexual behaviour scales, was administered to three hundred and ten (N=310) adolescents from four (4) special schools in four regions of Ghana. Interviews and focus group discussions were used in gathering the data. The main data analytic strategies used in the study included frequency distribution tables mean scores, standard deviation, t-test and correlations through the use of SPSS software version 17.0. Open, axial and selective coding systems were used to analyse qualitative data.

The findings of the study showed that although adolescents with HI were aware of HIV/AIDs, they had limited knowledge of HIV/AIDs; most of them were engaged in sexual behaviours that placed them at high risk of contracting HIV, and 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 involvement in risky sexual behaviours.

6.2 Conclusions

Based on the findings of the study, the following conclusions were drawn: The findings of the study showed that although adolescents with HI were aware of HIV/AIDs, awareness alone does not mean absolute knowledge of the modes of transmission of the disease, because adolescent with hearing impairment in the study demonstrated gaps in their knowledge.

Another conclusion drawn from the study is that once it is established that adolescents with hearing impairment had limited knowledge of HIV/AIDs, it is possible to conclude that limited knowledge is responsible for engaging in sexual behaviours that placed them at high risk of contracting HIV.

It can also be concluded from the findings of the study that the difference between female and male adolescents' knowledge of HIV/AIDs as well as their involvement in risky sexual behaviours can be attributed largely to their orientation. The more informed a person is, the better his attitude and behaviours.

Lack of courage and fear of being labelled as promiscuous puts some female adolescents with hearing impairment at risk and as it was clear that most sexually active students with hearing impairment complained of being unfaithful and promiscuous for insisting on condom use.

6.3 Recommendations

Based on the findings of the study, the following recommendations were made

1) Ghana Aids Commission and the Division of Special Education should work collaboratively with non-governmental agencies to intensify education on

HIV/AIDs especially in sign language to ensure that information needs of individuals with hearing impairment will be captured.

2) The heads of special schools should work with agencies responsible for Aids Education to intermittently organize workshops to educate hearing impaired students on risky behaviours that places them at risk of contracting HIV and AIDS
3) Workshops could be organized for parents of children with hearing impairment so that they in turn educate their wards on the rightful use of contraceptives and the need to protect themselves
4) The focal person's in charge of AIDS Education in our schools for the deaf should intensify education on how to guard against HIV and AIDS contraction
5) The Ghana Aids Commission should make provision for the hearing impaired adolescents to increase their knowledge levels which will in turn ;lead to appropriate sexual behaviours
6) Although this study suggests that male adolescents with hearing impairment have more knowledge of HIV/AIDs than their female counterparts, it is recommended that both genders should be involved effectively when programming HIV/AIDs education.

Recommendation 4, 5 and 6 holds for hypotheses 1, 2 and 3. 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.

REFERENCES

Abhay, M., Gaidhane, Quazi Syed, Z,,Lalit Waghmare, Sanjay Zodpey, R. C., & Goyal, S. R. () Assessing self-care component of activities and participation domain of the international classification of functioning, disability and health (ICF) among people living with HIV/AIDS. *AIDS Care. 20*(9), 10-98.

Abiodun, M. Omoniyi & Baloqun, R. Olayinka. (2009). Sexual activity and contraceptive use among young female students of tertiary educational institutions in Ilorin, *Nigeria. Contraception, 79*(2), 146 – 149.

Acton, C., & Miller, R. (2009). *SPSS for Social Scientists* (2nd ed.). New Edition.

Ademokoya & Oyewumi, (2001). Informing the deaf adolescent about sexually transmitted diseases. *Nigerian Journal of Applied Psychology, 6*(1&2), 99-105

Ademokoya, J. A., & Oyewumi, A. M. (2004). Perceptions and Uses of Contraceptives: A Case Study of Some Hearing Impaired Individuals in Oyo State. *African Journal for the Psychological Study of Social Issues, 1&2*(7), 156-167.

Adeniyi, S. O., & Olufemi-Adeniyi, O.A. (2014). HIV/AIDS among Adolescents with Hearing Impairment in Nigeria: Issues, Challenges and strategies for Prevention in Achieving Millennium Development Goals. *An International Multidisciplinary Journal, Ethiopia*, *33*(8) (2), 38-51. DOI: http://dx.doi.org/10.4314/afrrev.v8i2.3

Aderemi, T. J. (2011). *HIV/AIDS knowledge, attitudes and sexual practices among intellectually impaired and mainstream learners in selected schools in Oyo State, Nigeria.*

Aggleton, P. (1996). Global priorities for HIV/AIDS intervention research. *Int J STD AIDS, 7*(2), 13-16.

Akinyemi, H. F. (1998). *A comparative study of the knowledge of sexually transmitted disease among hearing and hearing impaired adolescent*. A .Bed project, University of Ibadan

Alarape, A.I., Olapegba, P. O., & Chovwen, C. (2008). Condom Use among Students: The Influence of Condom, Self- Efficacy, Social Norms and Affective Attitude towards Condom. *Journal of Social Sciences, 17*(3), 237-241.

Amenyaku, A. (2004). *The level of awareness of Human immune deficiency Virus/Acquired Immune Deficiency Syndrome among teenage Hearing impaired individual in Savelugu/Nanton District*. (Unpublished).

American College Health Association. (2010). *American College Health Association-National College Health Assessment II: Reference Group Data Report Spring 2010*. Linthicum, MD: Author.

Amos, I. O., & Olaiwola, A. J. (2016). Assessment of sexual abstinence and the use of condom among undergraduate students (youths) in Nigeria universities. *Research on Humanities and Social Sciences, 6*(3), 92-106 retrieved from www.iiste.org

Anderson, M. L., & Leigh, I. W. (2010). Internal consistency and factor structure of the revised conflict tactics scales in a sample of deaf female college students. *Journal of Family Violence, 25,* 475-483. doi: 10.1007/s10896-010-9308-6

Anderson, P., & Kitchin, R. (2000). Disability, space and sexuality: access to family planning services. *Social Science and Medicine, 51*(8), 1163-1173.

Appiah-Agyekum. N. N., Suapim, R. H. (2013). Knowledge and awareness of HIV/AIDS among high school girls in Ghana. HIV/AIDS – *Research and* Palliative *Care* 28june 2013.

Arnett, J.J. (2006). Reckless behavior in adolescence: A developmental perspective. *Developmental Review.* 2008; 12:339–373.

Barnett, T., & Whiteside, A. (2002). *AIDS in the twenty-first century: Disease and globalization*.

Bartlett, J.E., Kotrlik, J.W., & Higgins, C.C. (2001). "Organizational Research: Determining Appropriate sample Size in Survey Research". *Information Technology, Learning, and Performance Journal*, *19*(1), pp 43-50 (Spring).

Bennell, P.S. (2003). *The AIDS epidemic in sub-Saharan Africa: Are teachers a high-risk group: Comparative Education, forthcoming.* UK: Palgrave Macmillan.

Bennell, P.S., K. Hyde, N., & Swainson, I. (2002). *The impact of the HIV/AIDS epidemic on the education sector in sub-Saharan Africa: A synthesis of the findings and recommendations of three country studies*. Centre for International Education, Sussex University.

Berger P. L., & Luckmann,T. (2011) T*he social construction of reality: A treatise in the sociology of knowledge.* England: Penguin Group Penguin books Ltd, penguin Putnam Inc.

Berman, H., Harris, D., Enright, R., Gilpin. M., Cathers, T., & Bukovy, G. (1999). Sexuality and the adolescent with a physical disability. Understandings and misunderstandings. *Issues in Comprehensive Pediatric Nursing*. *22*.(4): 183-196.

Biggerstaff, D. L., & Thompson, A. R. (2008). *Qualitative research in psychology* 5: 173 – 183.

Bisol, C. A., Sperb, T.M., Brewer, T.H., Kato, S.K., & Shor-Posner, G. (2008). HIV/AIDS knowledge and health-related attitudes and behaviours among deaf and hearing adolescents in Southern Brazil. *Am. Ann. Deaf, 153*(4), 349-356.

Boroffice, O.B. (2004). *Recreation and health behaviour of adolescents.* I.A. Nwazuoke, Y. Bamgbose and O.A. Moronkola. Eds. Contemporary Issues and Researches on Adolescents. Ibadan: Royal People.112-114.

Braithwaite, J., & Mont, D. (2009). Disability and poverty: a survey of World Bank poverty assessments and implications. Alter: *European Journal of Disability* Research*, 3*(3), 219-232. http://dx.doi.org/10.1016/j.alter.2008.10.002.

Bronfenbrenner, U. (1994). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Brownridge, D. A. (2006). Partner violence against women with disabilities. *Violence Against Women, 12* (9), 805-822.

Busari, A.O., & Danesy, A.H.(2004). *Adolescents and HIV/AIDS.* I.A. Nwazuoke, Y. Bamgbose and O.A. Moronkola. Eds. Contemporary Issues and Researches on Adolescents. Ibadan: Royal People. 189-196

Busari, A.O., & Ojo, R.A. (2007). *Social transformation of people with special needs through sexuality and reproductive health education.* E.A. Okediran and O.A. Moronkola. Eds. Education for Social Transformation. Ibadan: Faculty of Education. 65-68.

Calderon J. F., & Gonzales, E. C. *(*2010*). Methods of research and thesis writing.* Manila, Philippines*:* National Bookstore*.*

Caley, W. E. Jr. (2004). Effectiveness of condoms in reducing heterosexual transmission of HIV: *American, Family, Physician, 70*(7), 1268-1269.

Carr-Hill, R., Katabaro, K.J., KatahoireA.R., & Oulai, D. (2002). *The impact of HIV/AIDS on education and institutionalizing preventive education*. IIEP/UNESCO; Paris.

Castro, F.G., Kellison, J.G., Boyd, S.J., & Kopak, A. (2010) A methodology for conducting integrative mixed methods research and data analyses. *JMM,4*(4):342-360.

Choruma,T. (2007). *The forgotten tribe: People with disabilities in Zimbabwe*. New North Road London: Progressio Unit 3, Canonbury Yard 190.

Ciaran, M., Robert, M., & John, F. D. (2009). *SPSS for social scientists by acton,* http://www.amazon.com/Social-Scientists-Ciaran-Fullerton-Paperback/dp/B00IGYTVMK.

Cohen, L., & Manion, L. & Morison, K. (2000). *Research methods in education*. London: Routledge.

Comrey, A. L. (1973). *A first course in factor analysis.* New York, NY: Academic Press

Cooper, D. R., & Schindler, P. S. (2003). *Business research methods* (8th ed.). New York: McGrav-Hill Higher Education.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Los Angeles: Sage Publications, Inc.

Dash, M. (2000). *Education of exceptional children. Atlantic Publishers and distributors,* New Delhi. 67-63.

Daures, J.P., Chaix-Durand ,G., Maurin, M., Viala. J. L., Gremy, F., & Etude (1989). *Préliminaire sur la prévention des interruptions volontaires de grossesse (IVG) et des maladies sexuellement transmissibles (MST) chez l'adolescent par une information en classe de troisième.* [Preliminary study on the prevention of voluntary terminations of pregnancy and of sexually transmitted diseases in the adolescent by giving information in the third year (of secondary school)]. Contraception-fertilité-sexualité; 17:1021-6.

Denzin, N.K., & Lincoln, Y.S. (1984) (Eds.), *Handbook of qualitative research.* Thousand Oaks, CA: Sage.

Doyle, A. G. (1995). AIDS knowledge, attitudes and behaviors among deaf college students: A preliminary study. *Sexuality and Disability, 13,* 107-134. doi: 10.1007/BF02590060

Duvan, C. I., Turhan, N. O., Onaran, Y., Gums, I. I., & Yuvaci Heg. (2010). Adolescence pregnancies: Maternal and fetal outcomes. N J Med, 27: 113 – 116.

Ekanem, E. E., Afolabi, B. M., & Adebajo, S. B. (2005). Sexual behaviour, HIV - related knowledge and condom use by intra - city commercial Bus drivers and motor park attendants in Lagos, Nigeria. *African Journal of Reproductive Health*, *9*(1), 78 - 87.

Ellen, N. (2003). *HIV/AIDS and people with disability: Global survey*. http//www.hmt.peopleanddisability. (January 3rd 2008).

Enwereji, E.E., & Enwereji, K.O. (2008). Disabled persons and HIV/ AIDS prevention: A case study of deaf and leprosy persons in Nigeria. *East African Journal of Public Health, 5*(2), 55-71.

Epub.Tun, W., Okal, J., Schenk, K., Sheehy, M., Kuffour, E., Esantsi, S., Asiah, H., Moono, G., Mutale, F. Kyeremaa, R., Ngirabakunzi, E., & Justus, A. (2013). *Situation analysis of programs to meet the HIV prevention, care, and treatment needs of persons with disabilities in Ghana, Uganda, and Zambia.* 12. DECEMBER 2013.

Fakolade, O. A., Adeniyi, S.O., & Tella, A. (2005). A comparative study of risk behaviour and HIV/AIDS awareness among adolescents with and without hearing impairment in south-western part of Nigeria. *International Journal of Emotional Psychology and Sport Ethics 7*(8), 24-31.

Falaye, O. A., & Moronkola, O.A. (1999). Parental opinion and attitude towards sexuality education in the secondary school curriculum in Oyo State. *Nigerian Journal of Applied Psychoogy, 5*(1&2), 216-228

Family Health International Youth Lens, (2003).

Fatusi, A.O., & Blum, R.W. (2008) Predictors of Early Sexual Initiation among a Nationally Representative Sample of Nigerian Adolescents. *BMC Public Health*, **8**, 136. http://dx.doi.org/10.1186/1471-2458-8-136

Faulkenberry, R., Vincent, M., James, A., & Johnson, W. (1987). Coital behaviors, attitudes, and knowledge of students who experience early coitus. *Adolescence*, 86, 321-32.

Fedorowicz, S.C. (2006). HIV/AIDS and the deaf community. Deaf Worlds-International. *Journal of Deaf Studies*, *22*(1), 197-221.

Feiring, C. (2002). Social support and children's and adolescent adaptation to sexual abuse. *Journal of Interpersonal Violence 13*(2) 240-250

Fiona, M. (2009). *Record rise in sexual disease among promiscuous young adults.aspeneducation.crchealth.com* (14th June, 2013).

FMoH. (2012). *National HIV & AIDS and reproductive health survey*, (NARHS Plus). Abuja, Nigeria: Federal Ministry of Health.

Gagnon. J., & Simon, W. (1973). *Sexual conduct: The social sources of human sexuality.* Chicago: Aldine.

Gaskins, S. (1999a). Children's daily lives in a Mayan village: A case study of culturally constructed roles and activities. In A. Goncu (ed.), *Children's engagement in the world.* Cambridge, England: Cambridge University Press. Pp. 25-81.

Gaskins, S. (1999). Special population: HIV/AIDS among the deaf and hard of hearing. *Journal of the Association of Nurses in AIDS care, 10,* 75-78. doi: 10.1016/S1055-3290(06)60301-4

Geasler , D.M.J, Dannison, L.L., & Edlund C.J. (1995). Sexuality education of young children: parental concerns. *Family Relations*, 44,184-8.

Gelfand, J.M., & Weinstein, R, (2009) Prevalence and treatment of psoriasis in the United Kingdom: a population-based study. *Arch Dermatology, 141*(12), 1537–41. [PubMed].

Ghana AIDs Commission (2002). *National HIV and AIDS, stipolicy.* February 2013

Ghana AIDS Commission (2011). Ghana Country AIDS Progress Report. Report for January 2010–December 2011Accessed March 2012.

Goldman, R. J., & Goldman, D. G. (1981). Sources of sex information for Australian, English, North American, and Swedish children. *Journal of Psychology*, (109), 97-108.

Goldstein, M.F., Eckhardt, E., Joyner, P., & Berry, R. (2008). An HIV knowledge and attitude survey of U.S. adults'. *Deaf worlds*: *International Journal of Deaf Studies*, *22*(1), 194-196.

Goodman, R.M., Bird, S.T., & MaCornick, l. (1992). *Toward integrating qualitative and quantitative methods*. Palgrave: MacMillan.

Groce N. E., Yousafzai A. K., & Van Der Maas, F. (2007). Hiv/Aids and Disability: Differences In Hiv/Aids Knowledge Between Deaf And Hearing People In Nigeria, *Disability And Rehabilitation*, *29*(5), 367-371.

Groce, N. (2000). *Effectiveness of traditional and complementary/alternative systems of medicine: the need for conceptual and methodological development.* Traditional medicine division series, Geneva: WHO.

Groce, N. (2003). *Adolescents and youth with disability: Issues and challenges.* International Policy and Programme Review with Recommendations series, Washington DC: The World Bank.

Groce, N. (2004). Disabled adolescents: Rethinking current and future approaches. *The Asia Pacific Disability Rehabilitation Journal, 27*(2), 42-63.

Groce, N. (2004). *HIV/AIDS & disability: Capturing hidden voices.* The World Bank/Yale University Global Survey Report on HIV/AIDS. Washington D C. The World Bank

Groce, N., Ayorla, P., & Kaplan, K. (2007). Immunization status among disabled Children in Coastal Ecuador: A pilot study with unanticipated findings. *The Journal of Pediatrics 151*(2), 218-220.

Groce, N., & Trasi, R. (2004). Rape of Individuals with Disability: AIDS and the folk belief of virgin cleansing. *The Lancet 363*(9422), 1663-1664.

Groce, N., Trasi, R., & Yousafzai, A.K.(2006). *The millennium development goals and human rights: Past, present and future.* P 289.

Groce, N.E., Yousafzai, A.K., & Maas, V.D . (2007). HIV/AIDS and disability: Differences in HIV/ AIDS knowledge between deaf and hearing people in Nigeria. *Disability and Rehabilitation, 26*(5). 367-371. Available at: http://www.dcdd.nl/data/1204643548082_HIV%20and%20 deaf%20Study%20in%20Nigeria1.pdf [Accessed on 10 March 2008] http://dx.doi. org/10.1080/09638280600834567. PMid: 17364788

Guba, E. G., & Lincoln, Y. S. (1994). *Competing paradigms in qualitative research.* In N. K., 2015.

Haggan, J. E. (2012). Contraceptive knowledge, perceptions and use among adolescents in selected senior high schools in Central Region of Ghana. *J Soci Res, 3*(2): 170 – 180.

Hanass-Hancock, J., & Grant, K., (2011). *National response to disability and HIV in Eastern & Southern Africa*. Policy brief, Health Economics and HIV/AIDS Research Division,Durban. http://dx.doi.org/10.3109/09638288.2011.573055.

Hanass-Hancock, J. (2009). A systematic review of literature on disability and HIV and AIDS in Africa. *Journal of International AIDS Society, 12,* 13.

Hanass-Hancock, J. Regondi, I., & Nixon, K. (2013).What drives the interrelationship Between *disability and HIV in Eastern and Southern Africa (ESA), AJOD, 2(1), pp 1-6.*

Hanass-Hancock, J., Strode, A., & Grant, C. (2011). *Inclusion of disability within national strategic responses to HIV and AIDS in Eastern and Southern Africa.* http://www.ncbi.nlm.nih.gov/pubmed/21548820#

Henderson, T. M., Angala, K., & Ngare, P. C (2006). Responding to the signs: A voluntary counseling and testing programme for the Deaf in Kenya. *AIDS 2006 Poster* MOPE0876.

Heuttel, K.L., & Ronstein W.G. (2001). HIV/AIDS knowledge and information sources among the deaf and hearing college students. *In American Annals of the Deaf, 146*(3), 280-286. Available at: 45a4-be70-8b88b19e8d35%40sessionmgr4&vid=4&hid=25 [Accessed on 20 May 2007]. http://dx.doi.org/10.1353/aad.2012.0067. PMid:11523204

Heyederick , I. (2006). HIV/AIDS and deafness in Flanders. Deaf worlds: *International Journal of Deaf Studies, 22*(1), 194-196.

HIV/AIDS in Ghana, (2001-2005), *National HIV/AIDs Strategic Framework Ii2006-2010 Ghana Aids Commission "Scaling up Towards Universal Acces.* Working Actively and in Partnership to Combat HIV/AIDS.

Idowu, O. A., & Omotoso, O. I. A. (2015). Teenage pregnancy in Ondo State, Nigeria: The socio – psychological implications. In Journal of Arts and Culture, Vol. 10. No. 1. Pp. 73 – 95.Interagency Coalition on AIDS and Development, (2008)

Job, J. (2004). Factors involved in the ineffective dissemination of sexuality information to individuals who are deaf or hard of hearing. *American Annals of Deaf, 149*(3), 264-273. Available from: http://web.ebscohost.com.proxy.cc.uic.edu/ehost/pdfviewer/pdfviewer?sid=755f43d5-4bf0-4801-a582 36a9cab8f3fc%40sessionmgr10&vid=4&hid=25 [Accessed on 11 May 2007] http://dx.doi.org/10.1353/aad.2004.0025

Johnson, R.B., & Onwugbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come10.3102/0013189X033007014 *EDUCATIONAL RESEARCHER October 2004 vol. 33 no. 7 14-26.*

Johrapurkar, S. (2008). Assessing self-care component of activities and participation domain of the international classification of functioning, disability and health (ICF) among people living with HIV/AIDS Care. *An International Interdisciplinary Journal for Research, Policy and Care*. 3, (1), 42-57.

Kef, S., & Bos, H. (2006). Is love blind? Sexual behavior and psychological adjustment of adolescents with blindness. *Sexuality and Disability, 24*(2), 89-100.

Kehinde, K. K., Mohd, K., Ahmad & Che Su Mustaffa (2014). Sexual abstinence and usage of contraceptions among young people in Nigeria. *Journal of Biology, Agriculture and Healthcare, 4*(16), 53– 59.

Kelly, P. M. (2000). Towards a sustainable response to climate change. In Huxham, M. and Uncertain Future', *Asia Pacific J. Environ. Develop. 1,* 28–45.

Kennedy, S. & Buchholz, C. L. (1995). HIV and AIDS among the deaf. *Sexuality and Disability, 13,* 145-158. doi: 10.1353/aad.2012.0067

Kennedy, S. B., Nolen, S., & Applewhite, J. (2007)**,** *Condom use behaviours among 18 24 year-old urban African American males:* A qualitative study.

Kiragu, K. (2001). Youth and HIV/AIDS: Can we avoid catastrophe. Population Reports, Series L, No. 12. Baltimore, Maryland. Johns Hopkins Bloomberg School of Public Health, Population Information Program, 29(3)

Klein, L. S. (2008). *The relationship between perceived parenting style and sexual health in deaf and hard of hearing college students*. (Unpublished master's thesis). Washington, DC: Gallaudet University.

Kumar, A., Lal, P., Ingle, G.K., & Gulati, N. (1996). Does knowledge influence practices related to HIV transmission. *Indian J. Sex Transm. Dis., 17*(2), 73-75.

Kuyini, A. A. R. (2013). *Teachers' pedagogical competencies in including children with learning difficulties in primary schools in Ghana* (Unpublished PhD thesis). University of Brunei Darussalam, Bandar Seri Begawan.

Kvale, S. (1996). Interviews: *An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage.

Lang, R., & Upah, L. (2008). *Disability scoping study in Nigeria.* London: DFID.

Lema, V. M. & Kambaran, N. (2008). Sexual behaviour, contraceptive practice and knowledge of reproductive biology among adolescent secondary school girls in Nairobi, Kenya. *East African Medical Journal, 67*(2), 86-94.

Lindsay, E. (2001). Fact sheets of HIV/AIDS for nurses and midwives. Supplement to *The Africa Journal of Nursing and Midwifery, 3*(1), 1-10.

Malhotra, N.K. (1986). An approach to the measurement of consumer references using limited information. *Journal of Marketing Research*, 23,33-40. [CrossRef], [ISI]

.

Mallinson, R. K. (2004). Perceptions of HIV/AIDS by deaf gay men. *Journal of the Association of Nurses in AIDS Care, 15,* 27-36. doi: 10.1177/1055329004267338

Marcus, S. (1995) APA, monitor, Vol 29, Accessed on line at: Monzani, D., Galeazzi, G.M., Genovese.

Masoda, M., & Govender, I. (2013). Knowledge and attitude about and practices of condom use for reducing HIV infection among Goma University students in the Democratic Republic of Congo. *South Afr J Epidemiol Infect, 28* (1), 61 – 68.

Matica-Tyndale, E., & HP4RY Team. (2012). Bridging Theory and Practice in HIV Prévention for Rural Youth, Nigeria. Women's Health and Action Research Centre (WHARC): *African Journal of Reproductive Health / La Revue Africaine de la Santé Reproductive*, *16*(2) 39-53.

Maticka-Tyndale, E., & Tyndale, E. (2012). Toward reducing the spread of HIV in North-eastern Thai villages: Evaluation of a Village-Based Intervention. *AIDS Education and Prevention, 9,* 49-60.

Maticka-Tyndale, E. (2012) Condoms in sub-Saharan Africa. *Sexual Health. 9*(1): 59-72.

Maxwell, J., Belser, J.W., & David, D. (2007). *A health handbook for women with disabilities*. Berkley, CA, Hesperian Foundation.

Miller, R., Acton, C., Fullerton, D., & Maltby, J. (2009). *SPSS for social scientists* (2nd ed.). USA: Palgrave Macmillan.

Ministry of Education, (2010) Education Sector Performance Report.http://pure.qub.ac.uk/portal/en/publications/revisiting-the-quantitativequalitative-debate%28dc2fc9da-476b-4365-b6df-4baab75cf70b%29/export.html.

Monaghan, L. (2003). Maryland 2003 HIV infection statistics for hearing and deaf populations. Analysis and policy suggestions. *Deaf Worlds 22* (1). Spring 2006

Monaghan, L. (2006). Maryland 2003 HIV infection statistics for hearing and deaf populations: Analysis and policy suggestions, *Deaf Worlds, 22, 83-110.*

Mosher, W., & Bachrach, C. (1987). *First premarital contraceptive use: United States,* 1960-82. Studies in Family Planning 18:83-94.

Mprah, W. K. (2011). *Sexual and reproductive health needs assessment with deaf people in Ghana.* PhD Thesis, Department of Disability and Human Development, University of Illinois, Chicago, USA.

Mukhopadhyay, P., & Chaudhuri, R. N. (2010). Hospital - based Perinatal Outcomes and Complications in Teenage Pregnancy in Tanzania. *J. Health Popul Nutr, 28*(5), 494 – 500.

Mulindwa, I.N., (2003). Study on reproductive health and HIV/AIDS among persons with disabilities in Kampala, Katakwi and Rakai Districts: knowledge, attittudes and practices. Retrieved 21 August, 2007, from http://v1.dpi.org/files/uplads/publication/study%20in%20kampala.pdf.

NACP/GHS, (2007). *Technical policy and guidelines: Implementation of TB/HIV collaborative*. Activities in Ghana.

Nafsted, P. (1992). Evaluation of a programme to prevent unwanted pregnancies among young women in the Stovener district, Oslo, 1988-1990. *Tidsskrift for Den norske lægeforening*; 112:3112-14.

Nairne, J. S. (2000). Part-set cuing of order information: Implications for associative theories of serial order memory. *Memory & Cognition*, 28, 847-855.

Naso, N. (2008). *Access to information on HIV and AIDS for adults with hearing impairment in the Tamale metropolis.* (Unpublished).

National AIDS/STI Control Programme, GHS, (2005). *A Review of National Programme Data on the HIV Epidemic in Ghana:* 2005-2010.NATIONAL HIV and AIDS, STI POLICY: February 2002.

National AIDS/STI Control Programme. (2009) AIDS Epidemic Update: December 2009.

National Committee on Health Education (1978). *Living together: a family planning project on Gotland, Sweden. Stockholm: National Swedish Board of Health and Welfare*, Sweden.

Nsamenang, A.B., & Tchombe, T.M.S. (Eds.). (2011). Introduction: Generative pedagogy in the context of all cultures can contribute scientific knowledge of

universal value. In *Handbook of African educational theories and practices: A generative teacher education curriculum.* Retrieved September23, 2015

Nzioka, C. (2001). Perspectives of adolescent boys on risks of unwanted pregnancy and sexually transmitted infections. *Kenya Reproductive Health Matters.* 9:108-117.

Odu, O.O., Asekun-Olarinmoye, E.O., Bamidele, J.O., Egbewale, B.E., & Amusan Okanlawon, F.A. (2004). Peer education: An effective tool for promoting positive change in adolescents' risky sexual behaviour. I.A. Nwazuoke, Y. Bamgbose and O.A. Moronkola. (Eds). *Contemporary Issues and Researches on Adolescents.* Ibadan: Royal People Nigeria Ltd. 161-163.

Olawuyi, G. (2006). *Public Policies and Crisis of Confidence: An Empirical Analysis of the Nigerian State. Nigeria Journal of Management Research,* 2. pp. 28-43.

Olowu, A.O. (2008). Knowledge, attitudes to HIV/AIDS and sexual behavior of students in a tertiary institution in South-western Nigeria. *Eur J Contracept Reprod Health Care, 13*(1), 90-96.

Onwuegbuzie, A. J., & Leech. N. L. (2007). Sampling Designs in Qualitative Research: Making the Sampling Process More Public, *The Qualitative Report, 12*(2), 238 – 254.Retrieved from http://www.nova. edu/ssss/ QR/QR12-2/ onwuegbuzie1.pdf.

Orubuloye, I. O. (2004). 'Disease Illness and Society'. Ado - Ekiti.

Osowole , O.S. (1998). *Effectiveness of AIDS education using sign language among deaf secondary school students in Ibadan,* Nigeria. Ph.D Thesis. Dept. of Special Education. University of Ibadan, Oyo State.

Osowole, O. S., & Oladepo, O. (2001). Knowledge, attitude and perceived susceptibility to AIDS among deaf secondary school students in two south-western cities in Nigeria. *Journal of Special Education* 9(1), 130-145.

Osowole, O.S., & Oladepo, O. (2000). Effect of peer education on deaf secondary school students' HIV/AIDS knowledge, attitudes and sexual behaviour. African *Journal of Reproductive Health, 4*(2), 93-103.

Otte, W.M., van der Maas, F., & de Boer, A. (2008). Comparison of knowledge and accessibility to information sources of HIV/AIDS between blind and sighted populations in Nigeria. *AIDS Care, 20*(9), 1093-1097.

Oyediran, S.O., & Oladimeji, O. (2010). Effects of Peer Education on Deaf Secondary School Students about HIV/AIDS knowledge, attitude and sexual behaviour. *African Journal of Reproductive Health.* 4.2: 93-103.

Parker, M. (2002). Against Management: Organization in the Age of Managerialism.

Peinkofer, J. R. (1994). HIV education for the deaf, a vulnerable minority. *Public Health Reports,* 109, 390-396.

Pennington, B.F. (2007). Understanding comorbidity: A twin study of reading disability and attention-deficit/hyperactivity disorder. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*; 144, 709–714. [PubMed].

Plattner, I. E. (2010). Does testing HIV negative encourage potentially dangerous beliefs? A study with young people in Botswana. *J. AIDS HIV Res., 2*(4):058-065.

Poku, K.A. (2008). *Sexual and reproductive health status and HIV/AIDS and STI-related knowledge, attitude, and behaviours among persons with disabilities in Ghana. Unpublished report, Ghana AIDS Commission.*

Pollak, M., Paicheler, G., & Pierret, J.(1992). *AIDS: A problem for sociological Research*. London: Sage.

Postrado, L., & Nicholson, H. (1992). Effectiveness in delaying initiation of sexual intercourse of girls aged 12-14: Two components of the Girls Incorporated Preventing Adolescent Pregnancy Program. *Youth and Society; 23*:356-79.

Punch, K. F. (2004). *Introduction to social research quantitative and qualitative approach*. London: SAGE.

Radley, A., & Billig, M. (1996). Accounts of health and illness: Dilemmas and representations. *Sociology of Health & Illness 18*(2), 220–240.

Robert, G.S. (2006). Sexuality and HIV/AIDS Education amongDeaf and Hard of Hearing Students. *In: Deaf Worlds* 22 (1).

Roberts, G.S. (2006). Sexuality and HIV/AIDS education among deaf and hard of hearing students. *Deaf Worlds-International Journal of Deaf Studies, 22*(1), 111-139.

Rohleder, P. (2009). Providing sex education to persons with learning disabilities in the era of HIV/AIDS: Tensions between discourses of human rights and restriction', *Journal of Health Psychology* 14, 601 http://dx.doi.org/10.1177/1359105309103579.

Rohleder, P., Braathen, S.H., Swartz, L., & Eide, A.H. (2009). HIV/AIDS and disability in Southern African: a review of relevant literature. *Disability and Rehabilitation, 31*(1), 51-59.

Rosenthal, D., & Reichler, H. (1994). *Young heterosexuals, HIV/AIDS, and STDs.* Canberra: Department of Human Services and Health.

Rosenthal, S., Biro, F., Succop, P., Cohen, S.,& Stanberry, L. (1994). Age of first intercourse and risk of sexually transmitted disease. *Adolescent Paediatric Gynaecology,* 7, 210-13.

Sahin, N. H. (2008). Male university students' views, attitudes and behaviors towards family planning and emergency contraception in Turkey. *J Obstet Gynaecol Res, 34*(3), 392 – 398.

Samowitz, P., & Jacob, R. (1989) . *Developing an AIDS prevention education programme for persons with developmental disabilities.* https://scholar.google.com/scholar?q=Samowitz+et+al%2C+%281989%29.&btnG=&hl=en&as_sdt=0%2C5&as_vis=1.

Sangowawa, O.A., Owoage, E.T., & Faseru, B. (2004). *International conference on HIV/AIDS.* University College Hospital, Ibadan Oyo state Nigeria.

Sentinel Surveillance Report (2003). *On HIV/AIDS*: The Republic off Malawi, Ministry of Health And Population.

Sharf, B. F., & Vanderford, M. L. (2003). Social narratives and the construction of health. In A. Dorsey, K. I. Miller, R. Parrott, & T. Thompson (Eds.), *Handbook of health communication* (pp. 9– 34).

Sleek, S. (1999). HIV/AIDS Education Efforts have missed Deaf Community. *American Psychological Association Monitor*.

Somba, J. M., Milline, M., Joseph O., & Michael J. M. (2014). *Sexual behaviour, contraceptive knowledge and use among female undergraduates' students of Muhimbili and Dar es Salaam Universities, Tanzania: a cross - sectional study.* Biomed Centre (BMC) Women's health.

Sunmola, A. M. (2005). Evaluating the sexual behaviour, barriers to condom use and its actual use by university students in Nigeria. *AIDS Care, 17*(4), 457 - 465.

TACAIDS, NACP, & CCBRT. (2009). *The Forgotten HIV and Disability in Tanzania*. TACAIDS, NACP, and CCBRT: Dar es Salaam

Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social & behaviou ral research.* Thousand Oaks: Sage.

Tawil, O., Vester, A., O'Reilly, K.R. (1995). Enabling approaches for HIV/AIDS prevention: can we modify the environment and minimize the risk. *AIDS, 9*(12), 1299-1306.

Tilibe, N.N. (2011). *.An evaluation of the impact of HIV/AIDS awareness campaign in the Yejitowonship.* (Unpublished)

Tolulope, O.L.A., & Oludare, B.A. (2009).Main source of information on HIV/AIDS. *The Social Sciences 4*(3), 264-284.

Trani, J. F., & Loeb, M. (2012). Poverty and disability: A vicious circle. Evidence from Afghanistan and Zambia. Article first published online: 18 JUN 2010: DOI: 10.1002/jid.1709 2011, *33*(23-24):2389-96. doi: 10.3109/09638288.2011.573055.

Tsiboe-Darko , I. A. (2008). *HIV/AIDS baseline report*. Ghana National Association of the Deaf, Accra, Ghana.

UNAIDS (2014). *An ambitious treatment target to help end the AIDS epidemic*. Geneva, Switzerland: UNAIDS. 90-90-90:

UNAIDS Report on the global AIDS epidemic (2012). Joint United Nations Programme on HIV/AIDS (UNAIDS).

UNAIDS. (2010). *Report on the Global AIDS Epidemic. Geneva,* Switzerland.

UNAIDS. (2008). (Article 1). *Disability and Information Technology: A Comparative Study in Media Regulation*. National spending for HIV/AIDS. Geneva, UNAIDS. UNCRPD,

UNAIDS. (2013). *UNAIDS Report on the Global AIDS Epidemic*. Geneva, Switzerland: UNAIDS. Retrieved from http://www.unAIDs.org/en/media/unAIDs/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf.

UNAIDS. (2014). *People with Disabilities: The Gap Report.* Geneva: UNAIDS.

UNAIDS/WHO (2006). *Report on the global AIDS epidemic: Executive summary* A UNAIDS 10th anniversary special edition.

UNAIDS/WHO. (2005). *Annual report by the Joint United Nations Programme on HIV/AIDS,* Geneva, Switzerland.

UNDP (2006). *Human Development Report 2006:* Published for the United Nations Development Programme (UNDP).

United Nations (2012). *Thematic study on the issue of violence against women and girls and disability* UN2012

USAID, (2005). *Education Strategy: Improving lives through learning.* U.S. Agency for International Development.

Vincent, M. L, Clearie A. F., & Schluchter , M. D. (1987). Reducing adolescent pregnancy through school and community based education. *Journal of the American Medical Association*; 257:3382-6.

Warner, R. M. (2009). *Applied statistics from bivariate through multivariate techniques.* California, America: Sage.

Weiner, R. (2006). *Condom use reduces young women's risk of contracting HIV*. http/:www.kaisernetwork.org

Weiss, H. A. (2007). Male circumcision as a preventative measure against HIV and other sexually transmitted diseases: *Current Opinion Infectious Disease, 20(*1), 66-72.http://www.forestbooks.com/pages/Categories/Books/0946252610.html (24th January 2014).

Wellings, K., Wadsworth, J., Johnson, A., Field, J., Whitaker, L., & Field, B. (1995). Provision of sex education and early sexual experience: the relation examined. *British Medical Journal, 311*, 417-20.

WHO & World Bank. (2011). *World report on disability*. World Health Organization and the World Bank.

WHO. (2000). *The world health h report 2000 world health organization*. World Bank

Wiegerink, R., Donkervoort, S., & Cohen-Kettenis, (2006). *Importance of peers and dating in the development of romantic relationships and sexual activity of young adults with cerebral palsy.* http://www.ncbi.nlm.nih.gov/pubmed/20187888 Retrieved September 23 ,2015.

Wilson, A., & Monaghan, L. (2006). HIV/AIDS and the Deaf community, *International Journal of Deaf Studies, 22* (1), 1-10.

Wobst, P., & C. Arndt. (2004). HIV/AIDS and labour force upgrading in Tanzania. *World Development 32*, 195-218.

Wolfers, M., Zwart, O., & Kok, G. (2011). Adolescents in the Netherlands underestimate risk for sexually transmitted infections and deny the need for sexually transmitted infection testing. *AIDS patient care and STDs*, *25*(5), 311 - 319.

World Health Organization (WHO). (2014). *A guide to indicators for monitoring and evaluating national HIV/AIDS prevention programmes for young people*. Geneva: National AIDS programmes

Yadav, S., Choudhary, D., Narayan, K. C., Mandar, R. K., Sharma, A., Chauhan, S. S., & Agrawal, P. (2008). Adverse reproductive outcomes asoociated with teenage pregnancy. McGill. *J Med, 1*(2), 141 – 144.

Yale University (2004). *HIV/AIDS and Individuals with Disability, Capturing Hidden Voices.* Global Survey on HIV/AIDS and Disability.

Yousafzai, A.K, & Edwards, K. (2004). *Double burden: A situation analysis of HIV/AIDS and young people with disabilities in Rwanda and Uganda.* Save the Children.

Yousafzai, A.K., & Edwards, K. (2004). *Double Burden: A situation analysis of HIV/AIDS and young people with disabilities.* Rwanda and Uganda save the Children London.

Zakayo & Lwelamira, (2011) Knowledge and Practices Related to HIV/AIDS Infection among Youths in Mining Areas of Central Tanzania: A Case of Londoni and Winza Mining. Areas. *Asian Journal of Medical Sciences* 4(4): 134-144, 2012 ISSN: 2040-8773.

Zelnik, M., & Shah, F. (1983). First intercourse among young Americans. *Family Planning Perspectives*, 15, 64-72.

Zikmund, W.G. (1994). *Exploring Market Research*, Dryden Press.

APPENDICES

APPENDIX A

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**
Analsthiv	**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	Cronbach'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
Toiletf	22.0500	36.261	.362	.747
Tmedicinewaste	21.7000	37.589	.530	.729

Appendix A 5: Pilot test reliability test of the behaviour 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
Hivnotc2ruas	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
Analsthiv	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]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	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]

	Component				
	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
Hivnotc2ruas	.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
Analsthiv	.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
Hivnotc2ruas	.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
Coitusphiv	.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
Bartlett's Test of Sphericity	Approx. Chi-Square	35.459
	df	15
	Sig.	.002

Appendix A 7a: Pilot test factor analysis for behavior scale

Communalities

	Initial	Extraction
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 %	Total
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	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	Approx. Chi-Square	651.565

Appendix B 2a: Confirmatory factor analysis communalities

Communalities

		Extraction
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	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 untill 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 untill 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 Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item 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 iwill 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 condoms	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

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
Bartlett's Test of Sphericity	Approx. Chi-Square	672.494
	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 iwill 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 condoms	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	**2**	**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 I will 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 iwill 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

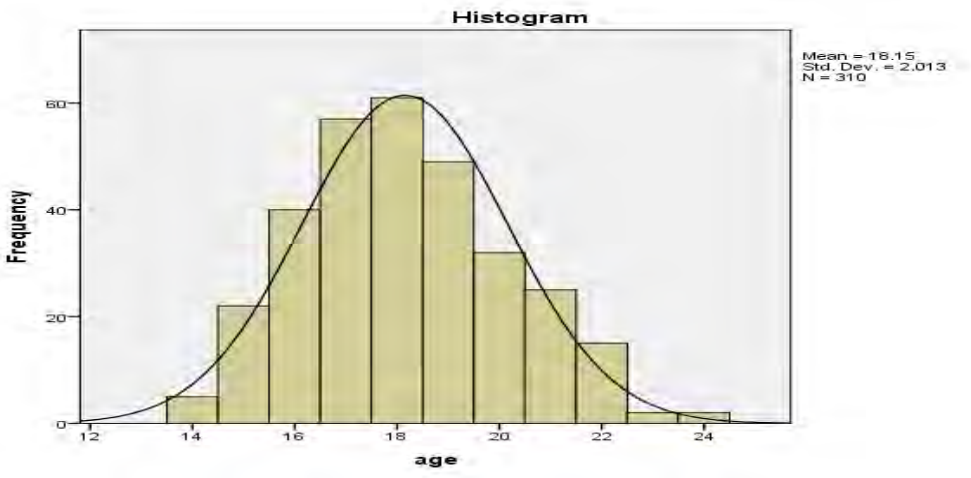
DATA CLEANING

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
age	male	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	
		Std. Deviation		2.126	
		Minimum		14	
		Maximum		24	
		Range		10	
		Interquartile Range		3	
		Skewness		.300	.183
		Kurtosis		-.399	.364
	female	Mean		17.91	.158
		95% Confidence Interval for Mean	Lower Bound	17.60	
			Upper Bound	18.22	
		5% Trimmed Mean		17.88	
		Median		18.00	
		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	Percentiles						
		5	10	25	50	75	90	95
Weighted Average(Definition 1)	age male	15.00	16.00	17.00	18.00	20.00	21.00	22.00
	age female	15.00	16.00	17.00	18.00	19.00	20.00	21.00
Tukey's Hinges	age male			17.00	18.00	20.00		
	age female			17.00	18.00	19.00		

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]
		Lowest	1	182	14
			2	86	14
			3	8	14
			4	301	15
			5	295	15[b]
	Female	Highest	1	58	22
			2	59	22
			3	142	22
			4	267	22
			5	304	22
		Lowest	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 .	0000000000000000000000000000
.00	17 .	
22.00	18 .	00000000000000000000
.00	18 .	
25.00	19 .	0000000000000000000000000
.00	19 .	
17.00	20 .	00000000000000000
.00	20 .	
5.00	21 .	00000
.00	21 .	
5.00	22 .	00000

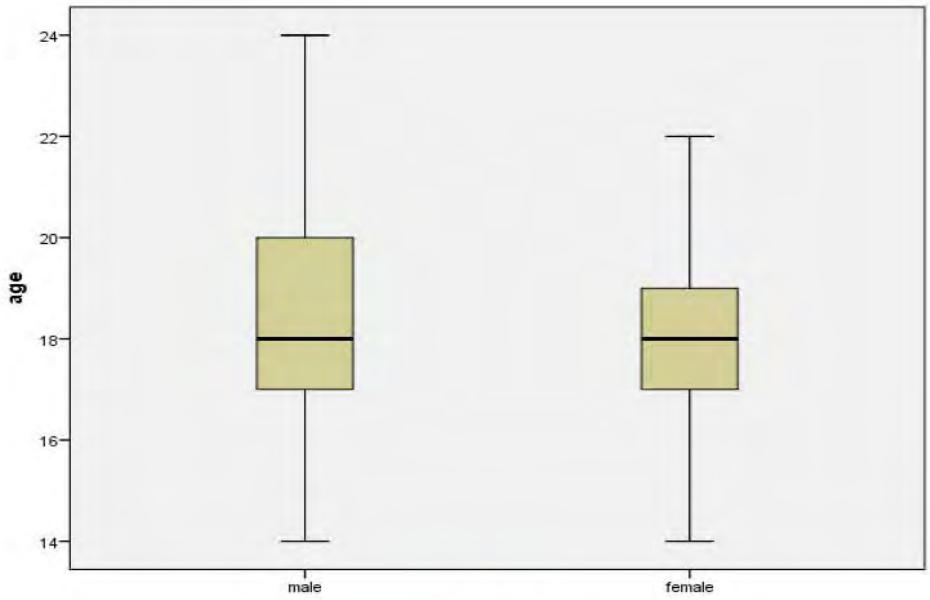
Stem width: 1
Each leaf: 1 case(s)

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 .	00000000000000000000000000000
39.00	18 .	000000000000000000000000000000000000000
24.00	19 .	000000000000000000000000
15.00	20 .	000000000000000
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



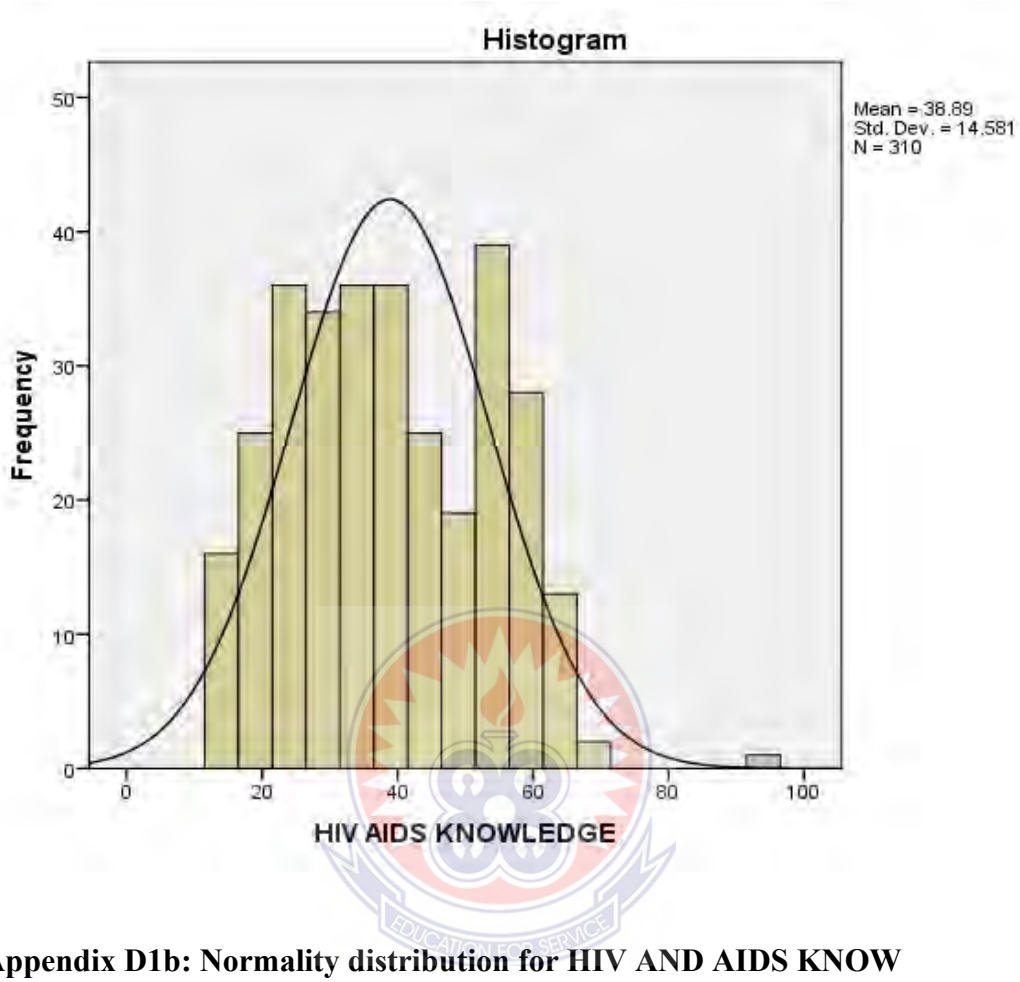
APPENDIX D

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
Percentiles	25	26.75
	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 . 55556666666666667777777788888888899999999999
34.00	4 . 0000000011111222222222233333344444
22.00	4 . 5555666666677777777789
14.00	5 . 01111122333444
7.00	5 . 5568889
5.00	6 . 11233
1.00 Extremes	(>=96)

Stem width: 10
Each leaf: 1 case(s

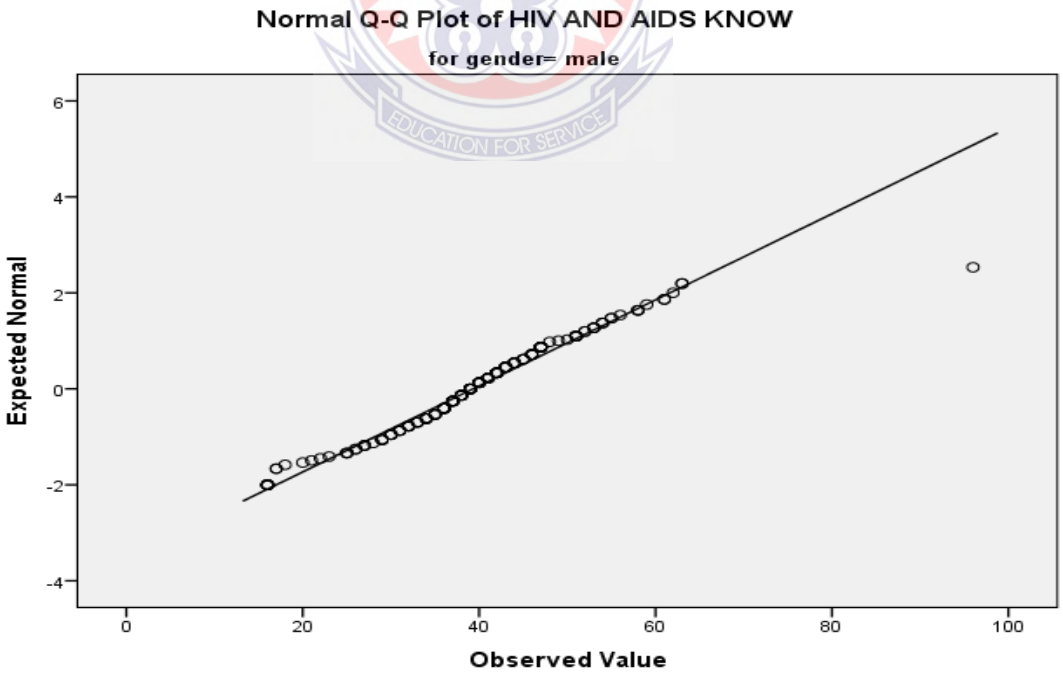
Appendix D1c: HIV AND AIDS KNOW Stem-and-Leaf Plot for gender= female

Frequency Stem & Leaf

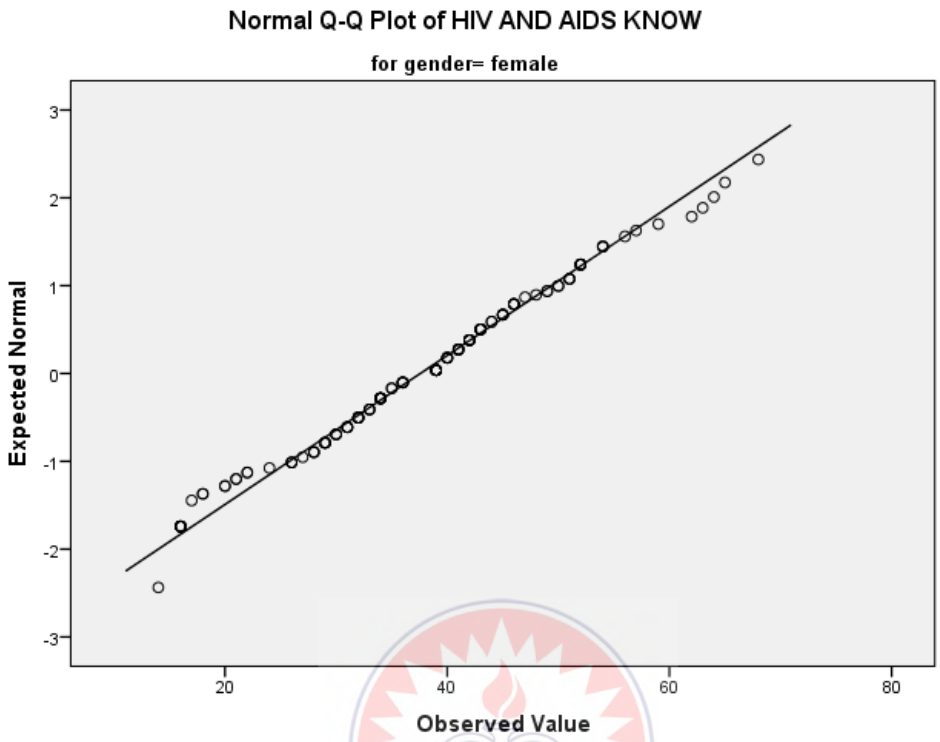
1.00 1 . 4
11.00 1 . 66666666788
7.00 2 . 0011224
12.00 2 . 666788899999
26.00 3 . 00011112222223334444444444
17.00 3 . 55666669999999999
24.00 4 . 000001111122222233333344
14.00 4 . 55555666667899
14.00 5 . 00111222222444
3.00 5 . 679
3.00 6 . 234
1.00 6 . 5
1.00 Extremes (>=68)

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

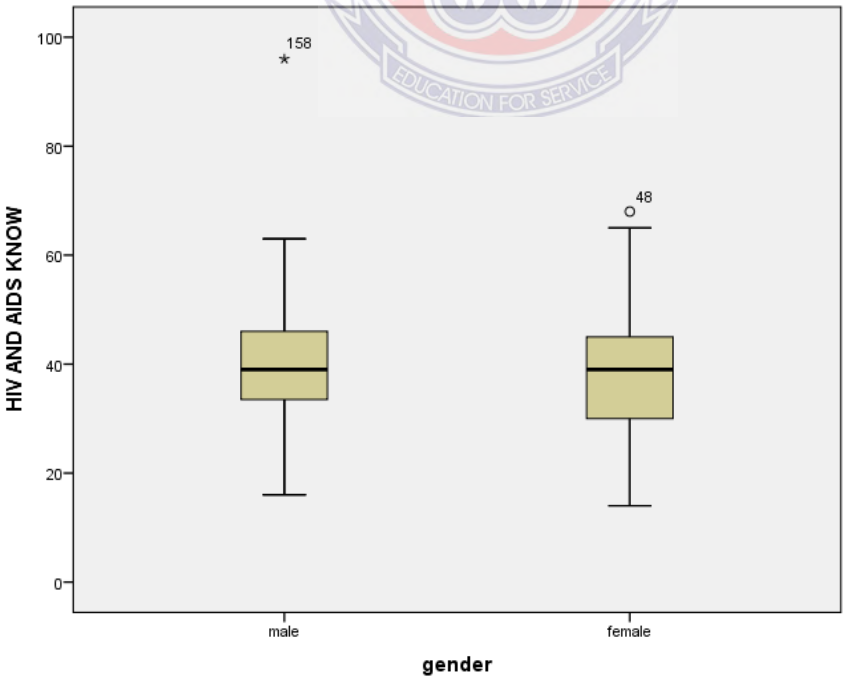
Appendix D1 d: Normality distribution for HIV AND AIDS KNOW



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

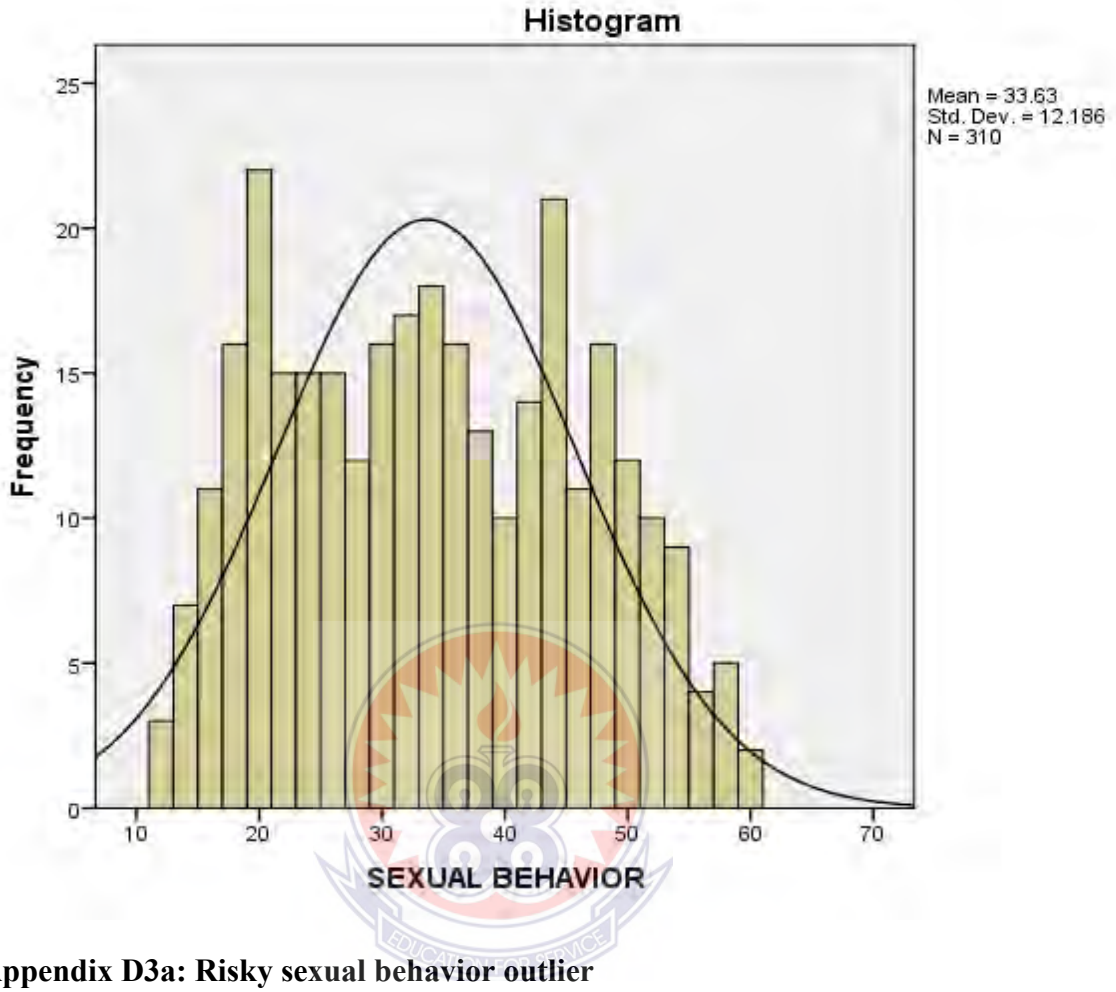
Statistics

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 . 55555555556666666666667777777788888889
29.00	4 . 00000011111222222222233334444
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

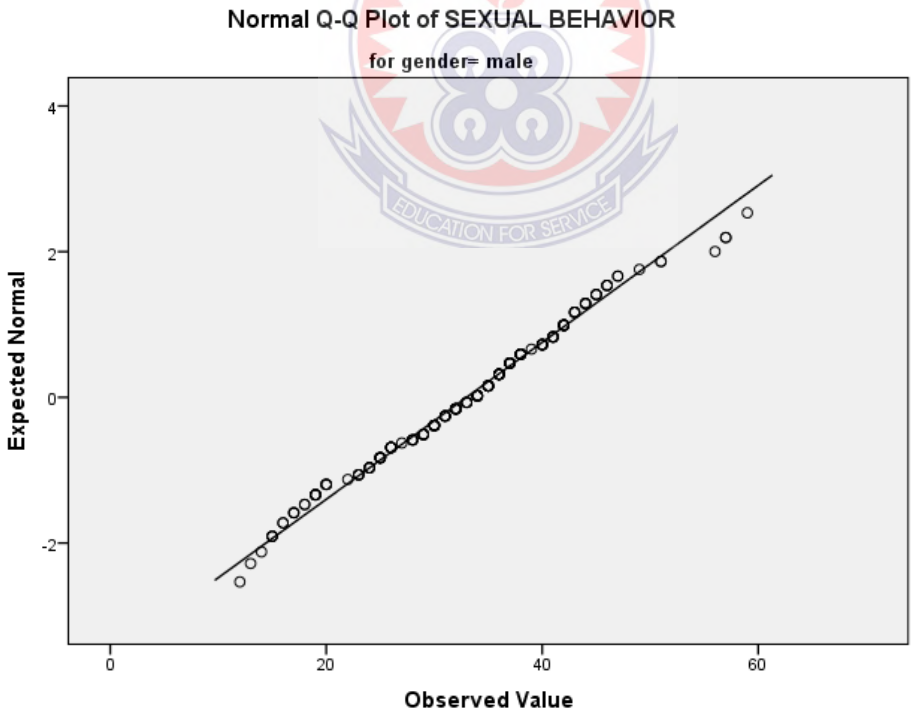
Sexual Behavior Stem-and-Leaf Plot for gender= female

[

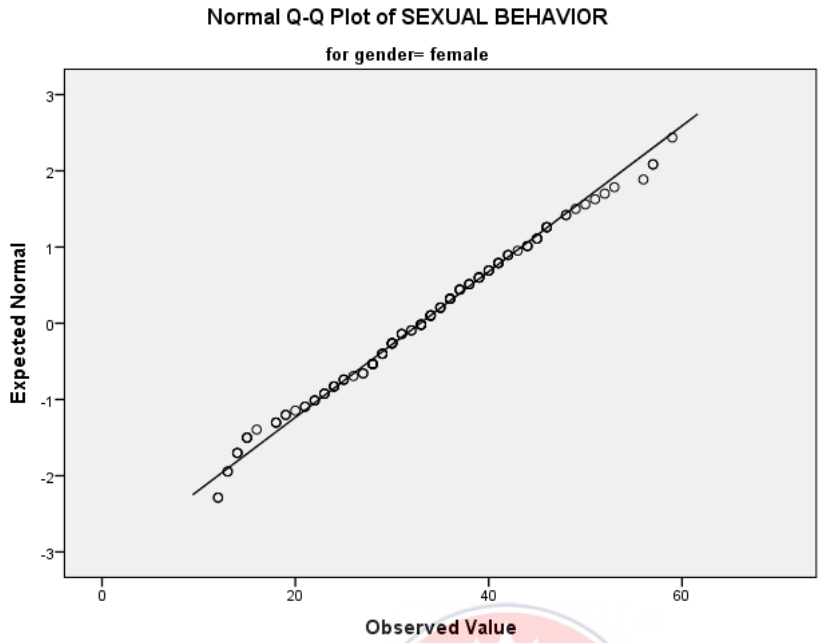
Frequency	Stem & Leaf
7.00	1 . 2233444
9.00	1 . 555688899
13.00	2 . 0112223334444
19.00	2 . 5556778888888889999
28.00	3 . 0000000000111223333334444444
24.00	3 . 555566666666777788899999
15.00	4 . 000111112223444
11.00	4 . 55566666889
4.00	5 . 0123
4.00	5 . 6779

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

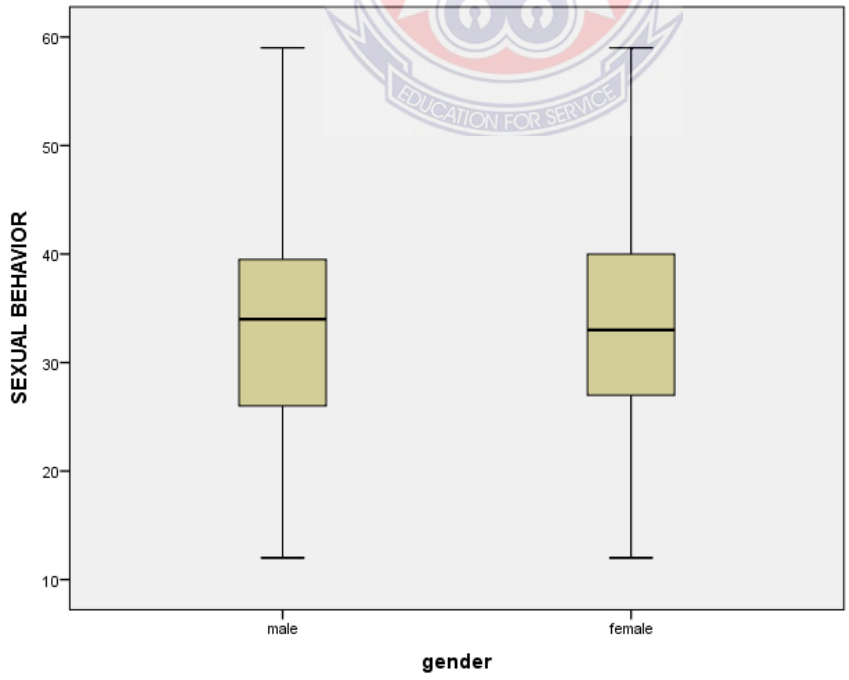
Appendix D3c: Risky sexual behavior outlier



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 1

1. Age:_____2.Educational level (please circle):Basic (7), (8), (9)
2. Male or Female. 4. Location: village/semi-urban/urban
3. Are you currently in a relationship; i.e. do you have a girlfriend, boyfriend, wife or partner? a. Yes, [ ] b. No [ ].
4. My partner is .. a. Male [ ] b. Female [ ].

5. How long have you been involved with your current partner?
   a. …….weeks, b. …….months, c. …….years.
6. How old were you when you first had sexual intercourse?_____ years.
7. At this time, do you have a regular sexual partner? Yes [ ], No[ ]
8. Have you had sexual intercourse with someone other than your regular partner in the past year? Yes [ ], No [ ].
9. Over the last month, how many *different* persons have you had sexual intercourse with? (please include regular partner in this number, if applicable)……..
10. 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	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
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
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 3: 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 behaviour 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 against 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 would be 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
I can use the same toilet facilities with the HIV positive people	1	2	3
Traditional medicines are a waste of time in the HIV/AIDS intervention	1	2	3

Note: after converting the attitude items into beh. Items, I sent all except the rejected one down to join the beh section. What is left in there are the rejected ones in red and blue.

Can you please cut out what we do not need and convert the beh scale to march the knowledge scale after you have gone through?.

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

APPENDIX E 2

QUESTIONNAIRE USED FOR PILOT TESTING

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 1

1. Age:_____2.Educational level (please circle):Basic (7), (8), (9)
2. Male or Female. 4. Location: village/semi-urban/urban
3. Are you currently in a relationship; i.e. do you have a girlfriend, boyfriend, wife or partner? a. Yes, [ ] b. No [ ].

4. My partner is .. a. Male [ ] b. Female [ ].
5. How long have you been involved with your current partner?
   a. …….weeks, b. …….months, c. …….years.
6. How old were you when you first had sexual intercourse?_____ years.
7. At this time, do you have a regular sexual partner? Yes [ ], No [ ]
8. Have you had sexual intercourse with someone other than your regular partner in the past year? Yes [ ], No [ ].
9. Over the last month, how many *different* persons have you had sexual intercourse with? (please include regular partner in this number, if applicable)……..
10. 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	Somewhat agree	Neither agree nor disagree	Somewhat agree	Strongly agree
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 against 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 E 3

INTERVIEW GUIDE

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

Introduction: this study is about knowledge and sexual behaviours of adolescent with hearing impairments. The data will only be used for academic purpose. No part of data will reveal the identity of anyone who accepts to participate in this study. All data disclosed will be treated confidentially.

Topic:

1. Background information about the participants
2. Adolescents with hearing impairments' of knowledge of HIV and AIDs
3. Adolescents with hearing impairments understanding and construction of HIV/AIDs infection.
4. Risky sexual behaviours that place adolescents with hearing impairments at risk of contracting HIV/AIDs.
5. The phenomenological experiences of adolescents with hearing impairment have about their sexual partners' use of strategies/contraceptives (e.g. condom) in protecting themselves against HIV/AIDs.
6. Protective strategies adolescent with hearing impairment use to guard themselves against HIV/AIDs infection.

Thank you for spending your time with me

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	

APPENDIX G 1

INTRODUCTORY LETTERS

DEPARTMENT OF SPECIAL EDUCATION

UNIVERSITY OF EDUCATION, WINNEBA

OFFICE OF THE HEAD OF DEPARTMENT

…….

……...

……

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 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 1

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 2

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 3

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 4

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 1

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 2

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 5

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/AAIDS 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 1

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 2

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 1

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 2

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

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

Respondent 1

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 2

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 1

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 2

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 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 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/AAIDS and that Africa people who get HIV/AIDS will die.

In our school we sometimes attend workshops on IV/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

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.

USE OF CONDOMS AND CONTRACEPTIVES

Respondent 1

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 2

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 5

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/AAIDS and that Africa people who get HIV/AIDS will die.

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

DON'T USE CONDOM

Respondent 1

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 2

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.

WASHING OF GENITALS

Respondent 1

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

PEER EDUCATION

Respondent 1

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 2

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.

ATTENDING WORKSHOPS AND SEMINARS

Respondent 1

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/AAIDS and that Africa people who get HIV/AIDS will die.

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

AIDS IS NO MORE, EBOLA HAS TAKEN OVER

Respondent 1

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.