

UNIVERSITY OF EDUCATION, WINNEBA

**HIV/AIDS KNOWLEDGE AND SEXUAL BEHAVIOUR OF
ADOLESCENTS IN THE SCHOOLS FOR THE DEAF IN AHAFO AND
ASHANTI REGIONS OF GHANA**

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DECLARATION

Student's Declaration

I, Juliana Darlebnim Dinko, declare that this Thesis, with the exception of quotations and references taken from other people's work which have all been duly acknowledged, is entirely my own original work, and that this work has not been submitted, either in part or whole, for award of another degree elsewhere.

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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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DEDICATION

To the loving memory of my late mother, Catherine Dumbien Dinko who's efforts has brought me this far.



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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Anti-Natal Clinics
BCC	Behaviour Change Communication
CDC	Centre for Disease Control
CSW	Commercial Sex Workers
FGD	Focal Group Discussion
GAC	Ghana AIDS Commission
GBN	Ghana Business News
GES	Ghana Education Service
HAKQ	HIV/AIDS Knowledge Questions
HIV	Human Immunodeficiency Virus
IDEA	Individuals with Disabilities Education Act
JHS	Junior High School
MoE	Ministry of Education
NACP	National AIDS Control Programme
SBQ	Sexual Behaviour Questions
SPSS	Statistical Package for the Social Sciences
SSA	Sub-Saharan Africa
STIs	Sexually Transmitted Infections
UNAIDS	United Nations Programme on HIV/AIDS
UNICEF	United Nations Children Education Fund
WHO	World Health Organisation

ABSTRACT

This study investigated Human Immunodeficiency Virus (HIV/AIDS) knowledge and sexual behaviours of adolescents in the Bechem and Ashanti schools for the deaf located in the Ahafo and Ashanti Regions of Ghana respectively. Five research questions and five hypotheses were formulated to guide the study. The study hinged on the Attribution theory by Weiner (1935) and literature reviewed based on the research questions. Descriptive survey design was used for the study. The purposive, proportional and simple random sampling techniques were used to select a sample of one hundred and ten (110) students for the study. Self-constructed questionnaire was used to gather data from the students for the study. The data was analyzed descriptively into frequencies and percentages using SPSS software version 20. The t-test with 95% confidence level was used to test the five hypotheses. The results of the study indicated that although the students had some knowledge about HIV/AIDS, the ignorance of the majority about the diagnosis/symptoms, prevention, and the misconceptions they had regarding modes of transmission and cure of HIV/AIDS is a demonstration of gaps in knowledge. Most of the sexually active students engaged in behaviours that could make them susceptible to HIV infection. Students' risky sexual life could be attributed to their insufficient knowledge of HIV/AIDS. The study found no significant difference in HIV/AIDS knowledge between male and female adolescents and between students in Bechem and Ashanti schools for the deaf. Also, there was no significant gender difference regarding sexual behaviour. Similarly, no difference in sexual behaviour was found between the schools. The study however revealed a correlation between students' HIV/AIDS knowledge and sexual behaviour. The heads of Bechem and Ashanti schools for the deaf should organise workshops for their teachers on teaching strategies that can improve students' knowledge on HIV/AIDS. The heads of the schools should institute counselling measures to help reduce adolescents' engagement in high-risk sexual conduct.

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

Knowledge of Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) is important to adolescents who need to be adequately informed about issues concerning the deadly epidemic. The Joint United Nations Programme on HIV/AIDS (UNAIDS) (2011) has described HIV/AIDS as the most infectious and dangerous epidemic in the world's history. The reason for such description could be due to the infectious nature of HIV and also because AIDS has no medical cure yet. UNAIDS (2017) report on global HIV statistics revealed that since the start of the HIV/AIDS epidemic 76.1 million people have become infected with the virus that causes AIDS, and that 35.0 million people have died from AIDS-related illnesses. The report further indicated that in 2016 alone, 36.7 million people were living with HIV globally. Of these, 1.8 million people became newly infected with the AIDS virus, 1 million people died from AIDS-related illnesses.

HIV, the virus that causes AIDS is mostly transmitted through unprotected sexual intercourse blood and blood products and from infected mothers to children. The AIDS virus (HIV) lives in bodily fluids such as blood, seminal fluid, vaginal fluid and breast milk. Since it was first discovered in 1981, the HIV/AIDS epidemic has spread across all nations of the world, affecting children, adults and adolescents in particular. Both the hearing and the deaf community have been affected by the HIV/AIDS epidemic. Once there is no vaccine or cure yet, adequate and relevant knowledge about HIV/AIDS are essential prerequisites for the prevention of HIV infections particularly among adolescents (the deaf inclusive) as they constitute the future generation of all nations.

UNAIDS/ World Health Organisation (WHO) (2011) posits that, HIV/AIDS has affected the most productive labour force (15-49) of which adolescents are part. In supporting UNAIDS/WHO (2011), United Nations Children Education Fund (UNICEF) (2017) postulates that adolescents account for about 6 per cent of global HIV infections and about 15 per cent of adult infections. For instance in 2016 about 2.1 million adolescents aged between 10 and 19 years were living with HIV worldwide. In 2016 alone, 610,000 adolescents aged between 15 to 24 years were infected with HIV, of whom 260,000 were adolescents between the ages of 15 and 19 years. Additionally, AIDS-related deaths among adolescents have increased over the past decade while decreasing among all other age groups.

The WHO (2010), cited in Othman (2014) reported that although 50% of all new HIV infections occur among adolescents aged 15-24 years, they lack knowledge about HIV. This situation is disturbing and should be discontinued in the sense that once adolescents are at the core of preventing the expansion of the AIDS pandemic they must as a matter of urgency be targeted with the necessary information to enable them take charge of their own health and reduce transmission rates. When adolescents particularly the deaf are equipped with relevant and accurate information about the routes of HIV transmission and how it can be prevented they may be able to avoid infections through low risk attitudes and practices. Unfortunately, Mprah (2011) argue that deaf people encounter difficulties when accessing information from formal sources such as health professionals and media. For this reason, they often turn to informal sources such as friends and family members for information. However, this often has dire consequences when it comes to learning about sexual and reproductive health (SRH) issues particularly HIV/AIDS. Thus HIV/AIDS information from peers

and family who are not well informed about HIV/AIDS issues may be inaccurate and misleading.

The UNAIDS (2011) posited that Sub-Saharan Africa (SSA) still has the highest prevalence rate of HIV infection (5.2%) in the world with over 22.4 million people already living with HIV and 1.9 million newly infected, causing researchers to describe Africa as the epicentre of the AIDS epidemic. Furthermore, WHO (2011); Lewis (2011) and UNAIDS (2012) has stated that SSA bears the greatest burden (68%) of global HIV infections and that 88% of the 260,000 child death due to AIDS occurred in SSA. UNICEF (2017) has estimated that about 77% of all newly infected adolescents live in SSA, adding that 1.7 million adolescents representing 84% of adolescents (10-19 years) infected with HIV worldwide, lived in sub-Saharan Africa in 2016. This is an important reason why the researcher desires to investigate the knowledge of adolescents on the modes of transmission as well as the prevention of HIV infection among others. If adolescents were knowledgeable about how HIV is contracted and how to avoid infections maybe the situation in SSA and probably the world over would have been better, given that knowledge influence practice.

Isaiah and Ola (2016) lamented that most programmes on health behaviour including HIV/AIDS prevention programmes that target children in school often do not benefit or accommodate students who are hearing impaired. This is because communication modes often used in such programmes leave out sign language users. When adolescents who are deaf are not carried along by organizers of HIV/AIDS prevention programmes, such adolescents will have difficulty accessing information HIV/AIDS and other health issues due to their special need. The result is that adolescents who are

deaf will be vulnerable to various kinds of high risk behaviours such as indiscriminate sexual acts.

Many people may think that adolescents who are deaf do not engage in sex, however, available literature indicates that sexuality among adolescents particularly those who are deaf is real. For instance, Issaka 2015 and Isaiah 2016 posited that sexuality among students who are deaf is not only real but that they are involved in unprotected sex even with other people beside their sexual partners. Such high risk sexual conduct exposes adolescents who are deaf sexually transmitted infections including HIV/AIDS.

Touko, Mboua, Tohmintain and Perrot (2010) affirmed that most deaf adolescents are sexually active reinforcing that some even begin sexual intercourse as early as age 15 and that some (including those who are HIV positive) do not use condom. This behaviour is dangerous and unacceptable as they could be spreading the AIDS virus to their sexual partners and also re-infecting themselves with the AIDS virus or other STIs if their partners were infected already. This is because unprotected sexual contacts remain the main mode of HIV transmission.

Condom use is a good measure to prevent HIV infection through sex, particularly when used consistently and correctly. HIV/AIDS like other STIs may be described as attitudinal disease or a disease of human behaviour due to its main transmission mode- unprotected sex. There is possibility that knowledge about HIV/AIDS will inform adolescents' behaviour particularly regarding sex. This is the basis for which the study will examine the relationship between adolescents' knowledge of HIV/AIDS and their sexual behaviour. The sexual behaviours (such as first sexual act, number of sexual partners and condom use) of adolescents in the Bechem and Ashanti

schools for the deaf will be investigated to see if they are at risk of being exposed to the AIDS virus.

The African Union and UNAIDS (2013) indicated that Sub-Saharan African countries such as Zambia, Kenya, Togo and South Africa increased their HIV spending dramatically in the last ten years. For instance, South Africa funds her own response to HIV as such spent more than \$1.5 billion in 2014 on her HIV and AIDS programmes. In spite of the huge investments that African countries have made on HIV/AIDS prevention the disease is still the major mortality in Africa with Sub-Saharan Africa (SSA) being the most heavily infected region in the whole world (WHO, 2010). These revelations give reasons for the conduct of a study of this kind in Ghana.

In Ghana the HIV/AIDS situation is not different. For instance, the Ghana AIDS Commission, (2017) has stated that all the ten regions of the country have been affected by the disease since the detection of the first AIDS case in 1986. Adding that, the national HIV/AIDS prevalence have risen in the last two years. This means that everybody is at risk of HIV infection in the country as both the poor and the rich, the young and the old have been victims of HIV/AIDS. Appiah-Agyekum and Suapim (2013) describes HIV/AIDS as a national priority health issue in the country. This is why knowledge about HIV/AIDS is relevant as far as adolescents are concerned.

After the Demographic Health Survey conducted in 2003, HIV Prevalence in Ghana has been estimated based on sentinel surveillance of pregnant women attending Anti-Natal Clinics (ANC) and later through the Estimation and Projection Package (EPP) Model (GAC, 2015). The GAC (2017) revealed that the national HIV prevalence rate declined from 1.9% in 2013 to 1.6% in 2014 but rose to 1.8% in 2015 and further to

2.4% in 2016. These are based on national sentinel surveys. The revelation shows a two consecutive time rise from 2014 to 2016. The HIV prevalence rate among the young population (15-24 years) in 2009 was 2.1%. This declined to 1.2 per cent in 2012 but increased to 1.8 per cent in 2014 (GAC, 2012; GBN, 2015). The Ghana AIDS Commission (2012) further established that more than 150 youth between the ages of 13 and 24 years are infected daily in Ghana and over 500,000 of this category have HIV though without signs and symptoms yet. There is therefore the need for adolescents to understand at least how HIV/AIDS is transmitted and prevented in order to remain uninfected.

Although most Ghanaians seem to think that HIV/AIDS is no longer a problem to worry about anymore, the current trend (rise in prevalent rates) call for urgent need to find out the reason for such rise and possibly take appropriate steps to address it. In 2016, the sentinel survey report indicated that, the Volta and the then Brong-Ahafo Regions jointly ranged highest with 2.7% HIV/AIDS prevalence rate, exceeding the national prevalence rate of 2.4%. The location of Volta region (near Togo) could be the reason for such high prevalence rate. Trans - border trade is often not limited to goods but usually include services such as sex especially involving long distance drivers who spend several days at the border posts due to immigration challenges. Immigrants stranded at borders may use sex as means of entertainment, and where they do not protect themselves HIV transmission could occur.

In some parts of the Ahafo region where „galamsay“ (small scale mining) activities have caused the youth to migrate from rural areas in other regions to such communities, sex trade may be inevitable. The second highest HIV/AIDS prevalence rate (2.6%) which also exceeded the national prevalence rate in 2016 was in the

Eastern and Ashanti regions while the Northern region ranged lowest with 0.7 prevalence GAC (2017). The Ashanti region is characterised with high population due to adolescents' migration from other regions in search for greener pasture, particularly in Kumasi; the regional capital. This might have increased commercial activities including commercial and transactional sex activities thereby increasing HIV infection rates in the region. Thus the researcher's choice to conduct the study in the Ahafo and Ashanti regions is apt since the current (2016) HIV/AIDS prevalence rates in these regions are above the national prevalence.

Despite the risky sexual behavior of people who are deaf, they are unable to benefit from radio, television and other public discussion programmes on HIV/AIDS prevention as the communication modes (spoken and written language) often used in discussing these issues are not deaf-friendly thus, leaving persons who are Deaf poorly informed about HIV prevention measures, hence their vulnerability (Isaiah, 2016; Touko, Mboua, Tohmintain and Perrot, 2010). Access to relevant and accurate information on HIV/AIDS is essential in increasing the knowledge levels of adolescents, who are deaf particularly on transmission modes and prevention strategies; which may eventually result in their reduction of risky sexual behaviours regarding HIV infection. It is against this background that this study is deemed necessary to investigate the knowledge of Adolescents who are deaf about HIV/AIDS as well as explore their sexual behaviours.

1.1 Statement of the Problem

Although HIV/AIDS poses a threat to human life, including lives of adolescents who are deaf due to its“ infectious nature, (Mprah, 2013), it appears the students are not adequately informed about issues related to HIV/AIDS. Informal interactions with students who are deaf at Bechem and Ashanti schools for the deaf appear to reveal that the students have inadequate knowledge on the basic facts of HIV/AIDS such as modes of transmission, diagnosis, signs and symptoms, management/treatment and prevention. Yet, the deaf have often been overlooked and excluded from education on HIV/AIDS (Adeniyi & Olufemi-Adeniyi, 2014; Groce, Rohleder, Eide, MacLachlan, Mall & Swartz, 2013). Yousafzai and Edward (2014) lamented that the exclusion of people who are deaf from the fight against HIV/AIDS could slow down prevention measures. The inadequate knowledge in HIV/AIDS prevention and the continuous engagement of adolescents who are deaf in risky sexual behaviour (Mprah, 2013) can threaten their future and affect national development.

In Ghana, a few studies have been done in schools for the deaf regarding the topic. For instance, (Mprah, 2013) and Issaka (2015) explored HIV/AIDS knowledge and attitudes, and HIV/AIDS knowledge and sexual behaviour respectively among hearing impaired students in the cities of Tamae and Accra, and some selected schools for the Deaf in Ghana. Although, Hayford, Ocansey & Avoke (2018) investigated the Knowledge, Practices and views of students with visual impairments in Ghana towards HIV/AIDS, the researcher did not find any study that has specifically focused on HIV/AIDS knowledge and sexual behaviours of students who are deaf in the Ahafo and Ashanti Regions of Ghana combined, hence one cannot determine adolescents HIV/AIDS knowledge and sexual behaviours in schools for the deaf in these regions. This study attempts to fill the gap by investigating the HIV/AIDS

knowledge and sexual behaviours of adolescents who are deaf in the Ahafo and Ashanti regions of Ghana.

1.2 Purpose of the Study

The purpose of this study was to investigate HIV/AIDS knowledge and sexual behaviours of adolescents who are deaf in schools for the deaf in the Ahafo and Ashanti regions of Ghana.

1.3 Objectives of the Study

The objectives of the study were to:

1. Investigate knowledge of adolescents who are deaf in Bechem and Ashanti schools for the deaf on HIV/AIDS such as modes of transmission, diagnosis, symptoms, treatment and prevention.
2. Explore the sexual behaviours that students who are deaf in Bechem and Ashanti schools for the deaf exhibit.
3. Examine the relationship between HIV/AIDS knowledge and sexual behaviour of adolescents who are deaf.

1.4 Research Questions

The study was guided by the following Research questions:

1. What knowledge do adolescents who are deaf in Bechem and Ashanti schools for the deaf have about transmission of HIV/AIDS?
2. What do adolescent students who are deaf know about diagnosis and symptoms of HIV/AIDS?
3. How knowledgeable are adolescent students who are deaf regarding the treatment/management of HIV/AIDS?

4. What is the knowledge of adolescent students who are deaf about HIV/AIDS prevention?
5. Which types of sexual behaviour do adolescent students who are deaf in Bechem and Ashanti schools for the deaf exhibit?

1.4.1 Hypotheses

The study also tested the following hypotheses:

H₀₁: There will be no significant difference between knowledge of male and female adolescents of Bechem and Ashanti schools for the deaf on basic facts (modes of transmission, diagnosis, symptoms, treatment and prevention) of HIV/AIDS.

H₀₂: There will be no significant difference between knowledge of adolescents in schools for the deaf in Ahafo and Ashanti regions on basic facts of HIV/AIDS.

H₀₃: There will be no difference between sexual behaviours of male and female adolescents in Bechem and Ashanti schools for the deaf.

H₀₄: There will be no difference between sexual behaviours of adolescents in Bechem and Ashanti schools for the deaf.

H₀₅: There will be no significant relationship between HIV/AIDS knowledge and sexual behaviours of adolescents in Bechem and Ashanti schools for the deaf

1.5 Significance of the Study

The results of this study has revealed adolescents' knowledge regarding modes of transmission, diagnosis, symptoms, treatment and preventive measures of HIV/AIDS in schools for the deaf in Ahafo and Ashanti regions of Ghana. This will help the Ministry of Health, Ghana Health Service, Ghana AIDS Commission and Non-governmental Organisations interested in HIV/AIDS issues to make appropriate policies and informed decisions regarding HIV/AIDS.

Findings from the study has helped Ghana Education Service particularly; teachers of the deaf to adopt effective strategies that will enable the deaf student better understand information about HIV/AIDS through the HIV Alert School Programme. This will enable adolescents make informed decisions regarding their health particularly regarding sex.

The result of the study has unearthed the nature of adolescents' sexual behaviour in schools for the deaf in Ahafo and Ashanti regions of Ghana. This will help the schools and other stakeholders to institute counselling measures as well as adopt Behaviour Change Communication strategies to reduce adolescents' risk for HIV infection.

The findings of the study have also revealed many relationships between HIV/AIDS knowledge and sexual behaviour of adolescents in schools for the deaf in Ahafo and Ashanti regions of Ghana. Such revelation may lead to refined educational and strategic goals of Ministry of Education regarding sex education in the selected special schools, and could assist other schools for the Deaf throughout Ghana.

Last but not least, the study will add to a body of knowledge and serve as a source of reference for future researchers.

1.6 Delimitation

This study covered only schools for the deaf in Ahafo and Ashanti regions of Ghana namely; Bechem School for the Deaf in Bechem and Ashanti School for the Deaf in Jamasi respectively. Ahafo and Ashanti regions topped the HIV/AIDS prevalence chart in 2015. Bechem and Ashanti Schools for the Deaf are the only schools with students who are deaf in the regions of study. The study focused on JHS 2 and JHS 3 students of Bechem and Ashanti Schools for the Deaf. The students in JHS one were excluded from the study on the basis that they might not have stayed long enough in

their respective schools to gain the experience necessary in providing information required for the study. The focus of the study was on adolescents' knowledge on HIV/AIDS (not other STDs) and sexual behaviour (not general behaviour). This is because available literature suggests that adolescents who are deaf have limited knowledge about HIV/AIDS, and engage in sexual behaviours that pose a risk for HIV infection.

1.7 Limitation of the Study

One significant challenge that the researcher encountered during the study was the use of research assistants who were recruited from among teachers in the schools for the deaf where the research was conducted. The teachers helped the students to understand the questionnaire items through interpretation using the sign language. This was done before students answered the questionnaire. This might have had some influence in the responses provided by the adolescent students. Thus through the body language such as facial expression of the teachers, some students might have deduced the required response. However, such influence was minimised because the researcher who understands sign language was present during the interpretation and can attest that teachers did not attempt to provide answers to the questions. Furthermore respondents did not answer the items at the time of interpretation. The questionnaires were given to the respondents to answer after the interpretation.

Also, once the study focused on only two regions, the results cannot be generalised to the other eight regions of the country. This notwithstanding, reference can be made to the findings in this study when studies of similar kind are conducted in the other regions of Ghana. Researchers can make comparisons where applicable

At the beginning, the students were not co-operating with the arrangements for them to attend to the questionnaire. To overcome the students' unwillingness to participate in the study, the researcher had to explain to them that they were not going to be scored by the answers they provide and that was the reason why they were not required to indicate their names or other identities on the questionnaire. The students were satisfied with the explanation that the purpose was to help me complete a programme of study I was undertaking.

1.8 Definition of Terms

Deaf: refers to individuals with significant hearing loss who are unable to perceive sound even with hearing aids. In the context of the study, Deaf refers to persons who are unable to hear or use spoken language, but understand and use the Ghanaian Sign Language as their main mode of communication and attend school for the Deaf in Ahafo or Ashanti region of Ghana.

Adolescents: in the context of this study refer to students between the ages of 13 and 24 years and are students of Junior High School (JHS) 2 and 3 in the schools for the deaf in Bechem and Jamasi.

Schools for the Deaf: Schools for the deaf can be operationally defined as special Junior High School established in the Ahafo or Ashanti region of Ghana to educate students who are deaf.

Human Immunodeficiency Virus (HIV) contextually refers to the organism that causes the disease AIDS.

Acquired Immune Deficiency Syndrome (AIDS) as used in this study refers to the disease caused by HIV.

Knowledge in the context of this study refers to respondents' ideas, perception, opinion and beliefs regarding transmission, diagnosis, symptoms, treatment/management and prevention of HIV/AIDS.

Basic facts of HIV/AIDS contextually refers to the scientific facts about HIV/AIDS in relation to its modes of transmission, diagnosis, signs and symptoms, treatment/management options as well as prevention strategies.

Sexual behaviour can be operationally defined as individuals engagement in sexual activities such as penetrative (penile-vaginal sex, penile anal sex,) sexual acts. It includes use or non-use of condoms, as well as number of sexual partners in one's life time.

1.9 Organization of the Study

The study was organized and presented in five chapters. Chapter one focused on the introduction which involve the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, hypotheses, delimitation, limitations, definition of terms as well as organization of the study. Chapter two deals with literature review, that is, the review of relevant literature on topics related to the subject under study.

Chapter three entails the methodology employed for the study. This has sub-headings such as research design, population, sample and sampling technique and instruments used in the study. Chapter four focus on data presentation and analysis where data collected is analyzed based on responses provided for each research question. Chapter five deals with discussion of the findings while chapter six presents a summary of findings, conclusion and recommendations based on the findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter dealt with a review of literature related to the study. Basically, the literature review was categorized into theoretical and empirical review. The theoretical review focused on the theoretical framework, while the empirical review considered studies conducted in Ghana and other parts of the world that were related to the study. These included knowledge of HIV/AIDS which covered knowledge of modes of transmission, diagnosis, signs and symptoms, treatment/management as well as prevention strategies. The second sub-heading was on sexual behaviour and the third was on relationship between knowledge of HIV/AIDS and sexual behaviour.

2.1 Theoretical Framework

This study is situated within the Attribution Theory. Attribution Theory was propounded by Weiner (1935). It is a theory about how people explain things that confront them. Human beings have strong need to understand and explain what is going on in the world. The theory attempts to explain the world and to determine the cause of an event or behaviour (e.g. why people do what they do). For example, we attribute the behaviour of a person to their personality, motives or beliefs. Before an individual makes attribution she/he analyzes the situation by making inferences (going beyond the information given) about the dispositions of others and him/herself as well as inferences about the environment and how it may be causing a person to behave.

Attribution theorists assume that man is motivated to find causes of events, and to understand his or her environment. The purpose of attributions is to achieve cognitive control over one's environment by explaining and understanding the causes behind behaviours and environmental occurrences. Another assumption of the attribution theory is that people attribute good things that happen to them as internal causes and bad things that happen to them as external causes. On the contrary, they attribute good things that happen to others as external causes and attribute bad things that happen to others as internal causes. In attribution theory, there is fundamental attribution error. This is referred to as the actor –observer biases. This tends to make the individual have default assumptions which leads to distortion of facts making the person giving erroneous explanation to issues (situations or events).

Alale (2005) outlined the following as examples to illustrate both internal and external attributions;

Example.: I do well in an exam. It is because I studied hard or because I am smart (internal cause)

Example. Someone else does well in an exam. It is because he/she is lucky or they liked him/her (external cause) or

Example.: I hit my toe against a stone. I cannot be blamed for that because it is an accident.

Example.: Someone else hits his/her toe against a stone. It is because he/she was not paying attention.

The attribution theory is relevant to this study because it provides appropriate explanations to the way students who are deaf could form their opinions (knowledge) and respond to the transmission modes, diagnosis, signs and symptoms,

management/treatment and prevention strategies about HIV/AIDS in their respective schools. The kind of knowledge students who are deaf have regarding HIV/AIDS would influence their attribution. If students who are deaf are provided with accurate and relevant information about HIV/AIDS, they may not develop any attribution error. As a result they will in-turn attribute scientific and correct transmission, diagnosis, signs and symptoms as well as management and preventions strategies associated with the disease. This will to a greater extend influence their sexual behaviour and conduct positively. Such students are more likely to adopt proper, safer, and healthier life style practices that could allow them stay un-infected. Besides, those who are already infected will adopt appropriate measures to reduce their viral load or boost their immune system or better still, properly manage opportunistic illnesses to live longer. This implies that one has to look for the modes of transmission, diagnosis, sign and symptoms of a particular situation for example HIV/AIDS and how to avoid or prevent or management it to an end.

On the contrary, if students with deafness in the study area lack relevant and accurate knowledge about HIV/AIDS, their attribution error will be higher. By this, they are more likely to attribute falsehood or erroneous causes, diagnosis, signs and symptoms, as well as management and prevention strategies associated with the disease. This to an extent will affect their conduct and sexual behaviour negatively. According to attribution theory, knowledge is necessary to predict behaviour but attributions constitute explanations, excuses or rationales that people give to explain their behaviour. However, attribution error could lead to students giving flimsy excuses about the disease.

It is clear from the above that the knowledge of HIV/AIDS in schools for the deaf in the Ahafo and Ashanti Regions largely depend on the kind of attribution students will adopt as this could influence either positively or negatively the way they would form their opinions and mind set and respond to HIV/AIDS. This will, to a great extent, affect their life style, and sexual behaviour. One can therefore conclude that, if students are equipped with basic facts and information regarding HIV/AIDS, they are less likely to develop attribution error regarding the causes, diagnosis, signs and symptoms, as well as management and prevention strategies. However, if students lack factual knowledge about the disease, they are more likely to develop attribution error, hence, more likely to give falsehood and erroneous causes, diagnosis, among others about HIV/AIDS. Such attribution errors act as vehicles for the spread of HIV/AIDS.

2.2 Empirical Review

This section reviewed literature on knowledge of HIV/AIDS and sexual behaviour in relation to the research questions that guided the study. The review was categorised in to three thematic areas. These areas included knowledge about HIV/AIDS (transmission modes, diagnosis/signs and symptoms, management/treatment as well as prevention strategies), sexual behaviours and relationship between HIV/AIDS knowledge and sexual behaviours.

2.2.1 Deaf adolescents' knowledge about transmission of HIV/AIDS

Generally, there are some basic causes that have been established scientifically in research as the causes of HIV/AIDS in human beings. Hayford, Ocansey and Avoke (2018) investigated the Knowledge, Practices and views of students with visual impairments in Ghana towards HIV/AIDS. The focus of the study was to identify the

gaps in knowledge about HIV/AIDS among students with visual impairment. The researchers employed the descriptive cross-sectional survey design to conduct the study. multi-staged stratified, and purposive sampling techniques were used to select 83 participants from two Junior High Schools in the country who are visually impaired for the study. The researchers used questionnaire to gather the required data for the study. Data was analyzed descriptively into frequencies and percentages. The chi-square and was used to test differences. The results of the study indicated that, majority of students with visual impairments had positive perception about HIV/AIDS. A good number of the students who are visually impaired demonstrated understanding regarding the modes of transmission of the HIV. However, the researchers found out from the results of their study some had misconceptions that HIV/AIDS can be transmitted through mere physical body contact with an infected person and through blood donation. The researchers however concluded that the HIV/AIDS knowledge of the students with visual impairments had influenced their sexual behaviours positively.

In the same vein, Othman (2014) researched into the knowledge about HIV/AIDS among high school students in Erbil city- Iraq. With a sample of 437 students (14 – 21 years) selected through multistage cluster sampling technique, a descriptive cross-sectional study was carried out in 2014. Data gathered were analysed using Statistical Package for Social Sciences (SPSS, Chicago, IL, USA, version 18). The descriptive and analytic approaches of data analysis were used. The findings revealed that more than 94% of students were aware that HIV can be transmitted through sexual intercourse. The majority of students also knew that HIV can be transmitted through blood transfusions (83.5%), from mother to child (75.3%), and through sharing needles or syringes (73.7%). The researcher therefore established that the overall rate

of knowledge about HIV/AIDS among high school students was high as respondents recorded 45% and 44% good and acceptable knowledge scores respectively. The results of further analysis also showed that male students had higher level of knowledge about HIV/AIDS.

Corroborating the findings of Othman (2014), Rana (2014) in his study on adolescents' knowledge about HIV/AIDS in Nepal established that adolescents had knowledge on the main modes of HIV/AIDS transmission. Majority (90%) of the students knew that HIV/AIDS can be transmitted through unprotected sexual contact. Eighty-four per cent (84%) named contaminated blood products, 90% mentioned transmission from infected mother to child. Again, the respondents said; shared razors (52%) and use of contaminated needles and syringes (94%) are means by which HIV/AIDS is transmitted.

Similarly, Tarkang (2009) as cited by Olaniran, Persson, & Oyekanmi (2013) undertook a study on HIV/AIDS knowledge among adolescents in Cameroon. It emerged from the results that majority of the participants were aware of the three main ways by which HIV/AIDS is transmitted. His conclusion was on the basis that nearly 96% agreed that HIV could be transmitted through unprotected sexual intercourse, 95% knew that transmission was possible through infected blood, and about 90% believed that through injection needles one can contract HIV. However, the results revealed a gap in knowledge regarding how transmission occurs as some respondents still had wrong perceptions about how the AIDS virus spreads. For instance, more than 38% of the participants believe that HIV/AIDS can be transmitted through mosquito bite; about 36% thought that one could contract HIV/AIDS through kissing an infected person. Again 23% and about 22% have the perception that

HIV/AIDS can be transmitted through saliva and toilet seats respectively, while 18% thought that transmission could occur by using the same eating utensils with an HIV infected person.

In another scenario, Ocran and Danso (2009) in their study on adolescents' knowledge of HIV/AIDS in the Elembelle District of Ghana noted that participants had enough information concerning the modes of transmission of HIV/AIDS. From the results obtained, all the informants believed that HIV can be contracted through sharing used blades and unsterilised instruments at barbering shops, unscreened blood transfusion, unprotected sexual intercourse, from infected mother to child, and multiple use of syringes and needles at the hospitals.

With regards to the risk of contracting HIV/AIDS, Touko, Mboua, Tohmintain and Perrot (2010) found that very few of the participants who are deaf considered themselves as potentially at risk of infection. As low as 36% of the deaf respondents knew that they could easily contract the AIDS virus. This is an indication that respondents' self-perception of being at risk of HIV infection is weak particularly among the females (30%), compared with the males (41%) ($\chi^2 = 1.63, p = 0.02$). The researcher concluded that the participants' weak self-perception of being at risk of HIV infection could be attributed to the variety of false beliefs (that AIDS could be cured (30.2%), that HIV carriers could be identified through their physical appearance (42.1%) and that healthy-looking people cannot transmit the AIDS virus (44.2%).

In another study, Bharati and Bharati (2014) found in their investigation of HIV/AIDS knowledge among students in Nepal that they had good knowledge about the modes of HIV transmission although with some misconception about the spread. For instance 94.7% stated that HIV/AIDS is transmitted through the sharing of piercing

instruments such as needle as well as from infected mother to child. However, 34% of the students had the misconception that HIV/AIDS is transmitted through mosquito bites. Further analysis showed that this misconception is significantly higher in male students.

On the contrary, Rahaman, Shahidullah and Kabir, (2009) cited in Rahman & Chowdhury (2017) undertook a cross sectional study in Bangladesh where the knowledge and awareness of 3362 female adolescents on HIV/AIDS was investigated. They found that only about one tenth of the respondents had better knowledge on HIV in terms of mode of transmission using a cross sectional design. They employed face to face interview to collect data for the study. They concluded that adolescents in Bangladesh do not have sufficient knowledge about HIV transmission.

Similarly, Andrade and Blaloyi (2010) undertook a study on HIV/AIDS knowledge among adolescents (15- 24years) who are deaf in South Africa. Seven participants were randomly selected for the study. Data for the study was collected using interview. The findings revealed that the adolescents who are deaf had misconception about how HIV is contracted as some thought that HIV can be contracted through touching people living with HIV/AIDS. The researchers therefore concluded that the adolescents appeared to have inadequate information about HIV transmission.

In the case of Ghana, Mprah (2013) explored knowledge and attitudes towards HIV/AIDS among adolescents who are deaf in Accra and Tamale. Using a two-phase sequential, mixed method design with a sample size of 179 respondents, the research revealed that many respondents still had misconceptions about the spread of HIV/AIDS. For instance, the results showed that more than (62%) of the students

thought mosquitoes could transmit the virus that causes HIV/AIDS. Again, 56.8% of the respondents said one could get HIV/AIDS by being around people who had it, and 25.7% did not know that sharing needles and blades with others could transmit HIV. However, more than one-third of the respondents believed that having sexual intercourse with homosexuals can result in transmission of HIV. He therefore concluded that there was general lack of knowledge on modes of HIV/AIDS transmission among all respondents.

In another study, Agyemang, Buor and Tagoe-Darko (2012) undertook a cross sectional study among 450 randomly selected respondents in Ejura- Sekyidumasi in the Ashanti region. The instruments used for the study were questionnaire, in-depth interview and focus group discussion. The results indicated that nearly half of the respondents (48.4%) perceived that HIV/AIDS could be transmitted through mosquito bites. For instance, about one-third (34%) believed that the disease could be transmitted by supernatural means such as witchcraft, juju or others, while a little more than 16% of respondents also thought that one could contract HIV/AIDS by eating from the same bowl with an infected person. These perceptions were reiterated in the focus group discussions. The researchers however feared that adolescents might act on this false information to engage in behaviours that might expose them to the risk of HIV infection. The researcher therefore suggested that a comprehensive HIV/AIDS education programme be put in place to adequately protect the youth in the study area from HIV/AIDS. Similarly, Issaka (2015) explored HIV/AIDS knowledge and sexual behaviours of adolescents with hearing impairment (HI) in selected special schools in Ghana. The researcher adopted mixed method designs to achieve her objectives. The study employed the cluster sampling technique to sample respondents. Self-constructed questionnaire, made up of HIV/AIDS Knowledge and

sexual behaviour scales, was used to gather data from three hundred and ten (N=310) adolescents from four (4) special schools in four regions of Ghana. The instruments used in gathering the data were Interviews and focus group discussions. The data was analysed into frequency distribution tables, mean scores, standard deviation, t-test and correlations using the SPSS software version 17.0. Qualitative data were analysed through open, axial and selective coding systems. The results indicated that although most participants in the study admitted that HIV/AIDS could be transmitted through sharing sharp objects such as needles, blades, pins and knives with people living with HIV/AIDS, some believed that HIV/AIDS is the work of witches and people can get it through sharing food, clothes and sneezing .The researcher then concluded that there is a gap in knowledge of HIV/ AIDS among hearing impaired adolescents

On the other hand, Appiah-Agyekum and Suapim (2013) in their study of the knowledge and awareness of HIV/AIDS among senior high school girls in West African Senior High School in Ghana argued that, senior high school girls were knowledgeable on the modes of HIV/AIDS transmission. The researchers found that respondents were aware that HIV/AIDS may be transmitted through having unprotected sex with an infected partner, being born to a mother who is infected with HIV, or through sucking the breast milk of an infected mother. The majority 216 (83.3%) of respondents were also aware that HIV/AIDS could be acquired through blood transfusion. Again, as much as (90%) of the respondents were also aware that HIV/AIDS could be transmitted through bodily fluids like blood, semen, vaginal secretions and breast milk.

2.2. 2 Knowledge on diagnosis and symptoms of HIV/AIDS

2.2.2.1 Diagnosis of HIV/AIDS

With regards to the diagnosis of HIV/AIDS, Bharati and Bharati (2014) conducted a descriptive cross sectional study using self-administered questionnaire in three higher secondary schools in the Jajarkot district of Nepal. The simple random sampling technique was used to choose 150 adolescents for the study. Respondents were aged between 15 and 19 years. The information obtained were entered and analyzed in SPSS version 16. Univariate analyses were done for different demographic characteristics and knowledge of HIV/AIDS. The researchers observed that on the whole, secondary school students in Jajarkot district have adequate knowledge in HIV/AIDS. For instance, among the total respondents, 96% of the respondents knew that HIV/AIDS is diagnosed by testing blood whereas 2.7% and 0.7% mentioned urine and stool test as well as sputum test as means of diagnosing HIV/AIDS.

Shweta, Mundkur and Chaitanya (2011) undertook a cross sectional survey on the level of awareness of HIV/AIDS among adolescent students in the Udupi district of Karnataka- India. A sample of 800 students drawn from standards 8 and 9 in five English medium schools in the district was studied. Questionnaire were used to gather students knowledge and awareness of HIV/AIDS regarding the causes, modes of transmission, diagnosis, treatment and their sources of information among others. The outcome of the study indicated that participants' knowledge regarding the diagnosis of HIV/AIDS was inadequate. Only 43% students were aware that tests are available to detect HIV in an infected person. Most participants had the misconception that taking an HIV test the within a week after having unprotected sex would detect the presence or otherwise of the HIV in the body.

2.2.2.2 Signs and symptoms of HIV/AIDS

This sub-section considered studies on signs and symptoms of HIV/AIDS both nationally and internationally. Some of such studies are presented below.

Nwimo & Omaka (2007) as cited by Oluyemi, Yinusa, Abdullateef, Sunday & Kehinde (2015) in their study on knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria found that the respondents knowledge regarding signs and symptoms of HIV/AIDS was high. Shweta, Mundkur, & Chaitanya, (2011) found from their study that adolescents' knowledge of the symptoms of AIDS is inadequate. Only 371 (46.4%) of students were aware that a person infected with HIV may look and feel healthy. 294 (36.8%) of students knew that a person can be infected with HIV for five years or more without developing AIDS. 374 (46.8%) of students knew that a person with AIDS can have tuberculosis as well.

On the contrary, Rana (2014) in his study investigated the knowledge of adolescents about HIV/AIDS in Nepal using a descriptive study design. The researcher used a structured questionnaire was used to collect data for the study. The researcher selected 50 adolescents from Intellectual Academy, Kumarigal-7, Tushal, Kathmandu through random sampling technique (lottery method). From the findings, the researcher established that the respondents had knowledge on the signs and symptoms of HIV/AIDS. This was because half of the respondents identified weight loss up to 10% body weight as a symptom of HIV/AIDS, 80% mentioned prolonged fever for more than 1 month and 70% stated chronic diarrhoea for more than 1 month. Bharati and Bharati (2014) agreed with the findings of Rana (2014) when they indicated in their study that the students of Jajarkot district of Nepal had knowledge about symptoms of

HIV/AIDS. This was based on the fact that more than half (51%) of them mentioned weight loss, while 50% stated body weaknesses as symptoms of HIV/AIDS.

2.2.3 Treatment/ Management of HIV AIDS

Concerning treatment and management of HI/AIDS, Bamise, Bamise1 and Adedigba (2011) assessed the Knowledge of Secondary school adolescents on HIV/AIDS and their sources of information through the survey design. The researchers employed a multistage random sampling technique to choose 592 junior and senior secondary school pupils (11-25 years) from five local government areas in Osun State, Nigeria. The questionnaire used comprised of questions on their knowledge and sources of information about HIV/AIDS, and this was self-administered. The findings revealed a high level of misconception about HIV/AIDS among the students as more than 53% thought that HIV can be contracted through mosquito bites while close to 30% believed there is cure for HIV/AIDS. Similarly, In another study, Shweta, Mundkur, & Chaitanya, (2011) observed from their study of HIV/AIDS knowledge among adolescents in Udupi district of Karnataka, India that the subjects have inadequate knowledge about the treatment opportunities for HIV/AIDS. The findings revealed that most participants did not know of available treatment for AIDS; only few (38%) were aware that some drugs are being prescribed for the treatment of the disease.

Appiah-Agyekum and Suapim (2013) conducted a study where the knowledge and awareness of HIV/AIDS among senior high school girls in West African Senior High School in Accra, Ghana was assessed. The researchers employed a cross-sectional design under quantitative approach for the study. The sample size was made up of Two hundred and sixty (260) female students in their teen ages. The respondents were sampled using the stratified sampling technique. An anonymous structured

questionnaire was used to gather information on students' knowledge of HIV/AIDS such as the causes, modes of transmission, and prevention strategies. Data collected were analysed into frequencies and percentages using Statistical Package for the Social Sciences (SPSS) version 16. The results of the study revealed that half (50%) of the girls believed that there is a scientifically proven cure for HIV/AIDS. Also, 43.3% of the respondents believed that herbal or traditional medicine as well as spiritual treatment could cure HIV/AIDS. The researchers concluded that some students demonstrated limited knowledge on treatment/cure of HIV/AIDS although majority of the students were knowledgeable about how HIV/AIDS is spread. In a similar vein, *Míguez, Espinoza, Vargas, Perez, Ergon, (2015)* in their study on HIV knowledge among youth living in Miami, Florida indicated that Hispanic youths are not adequately informed about HIV/AIDS particularly regarding its cure. For instance, the results of their study showed that majority (61%) of the youth had believed that HIV could be cured.

With reference to Ghana, *Ocran and Danso (2009)* undertook a study in the Elembelle District of Ghana. The purpose of the study was to investigate the knowledge, perceptions, and attitudes of male adolescents towards HIV/AIDS. The researchers employed the qualitative research approach. The study sample used for the study comprised of 6 male adolescents between the ages of 15 and 19 years. The respondents were conveniently sampled from six different villages in the Ellembelle District. Semi-structured open questions followed by probes were used to obtain the needed information from respondents for the study. The researcher recorded the interviews with the respondents. The recorded interviews were first transcribed in Ghanaian language [Nzema] and then later translated to English language. The results of the study suggested that the male adolescents in Ellembelle District of Ghana have

basic knowledge about HIV/AIDS. For instance, the students were aware that the disease HIV/AIDS is treatable but not curable. They also believed that anti-retroviral drugs are available and used for its treatment except that some infected persons are unable to access the drugs due to its cost. Bharati and Bharati (2014) agreed with the findings of Ocran and Danso (2009) as they found in their study that adolescents had knowledge regarding the treatment of HIV/AIDS. For instance, more than 65% of the students were aware that there are drugs available for prolonging the life of persons living with HIV/AIDS.

2.2.4 Prevention of HIV/AIDS Transmission

With regards to the prevention of HIV/AIDS transmission, Yaw (2011) undertook a study on HIV/AIDS education in regular and Special schools in Ghana. Specifically, the study was conducted in Jamasi School for the Deaf and Nsutaman Catholic Senior High School both in the Ashanti region of Ghana. Two hundred and eighty three (283) students aged between 12 and 25 years were involved in the survey using questionnaire. The study revealed that three-quarters of the students had good knowledge on general issues relating to HIV/AIDS while one-quarter had low knowledge. Specifically, the results also indicated that respondents' knowledge on the mode of prevention was good. The researcher therefore concluded that such interpretation is indicative that most of the respondents had some previous knowledge about HIV and also understood the statements of the questionnaire hence their good knowledge. Similarly, Andrade and Blaloyi (2011) in their study of HIV/AIDS knowledge among adolescent Sign language users in South Africa said the respondents seemed to have some basic knowledge about HIV/AIDS prevention particularly through condom use.

In a similar study, Tarkang (2009) cited in Olaniran, Persson, & Oyekanmi (2013) researched into HIV/AIDS knowledge, attitude and sexual behaviours of adolescents in Kumba, Cameroon. The researcher adopted a quantitative, non-experimental descriptive, explorative and correlation research design. Using a four-point likert scale self-designed questionnaire to solicit information about HIV/AIDS prevention from 480 respondents. The respondents were selected using the proportional, stratified, and simple random sampling techniques. The respondents were sampled from grade 10 to grade 12 learners in two high schools in Kumba, Cameroon. The researcher used SPSS version 12 to analyse data descriptively into frequencies and inferential statistics. The results revealed that about 31% of the participants did not believe that correct and consistent use of condom during every sexual intercourse could prevent HIV/AIDS infection. Again, 18.5% disagreed to the statement that transmission of HIV/AIDS infection could be prevented by being faithful to one sexual partner while almost 9% disagreed that HIV/AIDS could be prevented by abstaining from sexual intercourse. The researcher concluded that most learners were knowledgeable about the prevention of HIV/AIDS although some were not familiar with the preventive methods.

Agyemang, Buor and Tagoe-Darko (2012) in their study among adolescents in Ghana reported that the knowledge of respondents on the prevention of HIV was good. For instance the results revealed that 78% of the participants mentioned abstinence from sex as a means of preventing HIV infection. Again, 65% of them identified not sharing sharp items with another person while more than half (58%) of them mentioned condoms use. On the whole, the researchers established that 33.6% of the respondents had good knowledge about HIV/AIDS prevention, 52.2% had moderate knowledge while 14.2% had low knowledge of how HIV/AIDS is prevented. The

researchers therefore concluded that majority of the adolescents had moderate knowledge about the disease. Supporting the view of Agyemang et al (2012). Rana (2014), concluded in his study of the knowledge of adolescents on HIV/AIDS in Nepal that all the participants were aware that avoiding the sharing of needles and syringes, screening blood before transfusion, and using condom are means of preventing HIV/AIDS transmission. Majority, (92%) of the participants knew that having one faithful sex partner could prevent HIV infection while 52% said avoiding the sharing of razors is a preventive measure. Bharati and Bharati (2014) concord with Agyemang et al (2012) and Rana (2014) that adolescents have knowledge of the different ways of preventing HIV infection. This was based on the findings from their study that more than 93% of the respondents mentioned condom use as means of preventing HIV infection. 90% of them knew that having a single faithful sexual partner as well as avoiding the sharing of needles can prevent the infection.

On the contrary, Míguez, Espinoza, Vargas, Perez, and Ergon, (2015) conducted a survey on knowledge about the etiology, prevention and treatment of HIV among 11-18 years old Hispanic youth residing in Miami, Florida. The sample size for the study was made up of 400 youth who were enrolled in a longitudinal study based in Miami-Dade County in South Florida, USA. They were recruited through outreach from health care facilities and centres that provide recreational, social, and educational services for Hispanic youths. Participation required that they identify themselves and their parents as Hispanic. The researcher used an 18-item self-administered questionnaire HIV Knowledge Questionnaire (HIV-KQ-18) to measure respondents' knowledge, on HIV transmission and prevention. The researchers summarized their data was using descriptive statistics. Also, analysis of variance was used to compare differences in HIV knowledge base on age, gender, and source of HIV information. It

came out that as much as 61% of the youth thought that there is an effective vaccine that can stop adults from getting HIV. Again, the results of the study revealed that as high as 76% believed that taking antibiotics can protect one against HIV infection. It also came out that as much as 17% of the youth said they had up to four or more sexual partners. Also, the results indicated that 30% of the sexually active students reported they never used condom during sexual intercourse and although the remaining 70% said they used condom in the past, they were not consistent with condom use. It was evident from the results that majority (80 %) of the students did not use condom during their last sexual intercourse. The researchers then concluded that although the sexual behaviour of the Hispanic youth exposes them to high risk of HIV infection, they are poorly informed about appropriate HIV prevention strategies.

Similarly Rahman and Chowdhury (2017) in their study of HIV/AIDS knowledge among adolescents found that adolescents in Bangladesh do not have sufficient knowledge about HIV/AIDS prevention. The researchers employed a cross sectional study design using face to face interview with adolescents. Knowledge of how HIV/AIDS is prevented is essential to all, and particularly adolescents. Specifically if adolescents are knowledgeable about the effective use of condom during sex, they can escape risks such as HIV infection.

In the case of Ghana, Mprah (2013) argued that adolescents who are deaf in the cities of Accra and Tamale are sexually active, engaging in unprotected penetrative sex (vaginal and anal) and are at high risk of HIV infection, yet they have little or no knowledge on how to prevent themselves from HIV infection. This conclusion was reached when the researcher conducted a study among Deaf adolescents in the Accra and Tamale cities of Ghana. The researcher found in his study that the respondents

could not identify preventive methods and that most are not aware that using condom during sex can help prevent HIV/AIDS and STIs infection. The researcher added that many participants could not distinguish between the effective and ineffective methods of HIV/AIDS prevention. He then attributed the situation to the absence of Sign Language interpreters when issues on HIV/AIDS are discussed on television and in the communities.

2.2.5 Sexual Behaviours Of Deaf Adolescents

This section looks at works related to adolescents' involvement in sexual relations, whether or not they engage in safer sex practices and the number of sexual relations they have.

2.2.5.1 Deaf adolescents' sexual experience

Moura, Lamounier, Guimarães, Duarte, Beling, Pinto, Goulart & Grillo (2013) undertook a study among teenagers in the city of Vespasiano in Greater Metropolitan Belo Horizonte, capital of Minas Gerais State, Brazil. The researcher employed the cross-sectional design to investigate gaps between knowledge about HIV/AIDS and sexual behaviours among teenagers. The study included nine public secondary schools in the city. The researcher adopted the stratified sampling technique to determine study sample. The researcher made sure that the number of respondents selected from each school for the study was proportional to the student population in each school. The random sampling technique was used to select 1,158 teenagers from the schools in the city for the study. Validated questionnaires were used to gather the needed data from the teenagers. Data was analysed descriptively into means, standard deviations, medians, and ranges using Epi Info 6.04 and SPSS version 15.0. The chi-square was used to test hypotheses.

The results of the study revealed that over 60% of the boys had already experienced sexual intercourse as against 40.5% of the girls at the time of the study. This shows a significant difference of ($p < 0.001$). The mean age of first sexual act was found to be 14.8 years ($SD = 1.5$). On the average, the male students started sex 6 months earlier than the females; thus giving a significant difference ($p < 0.001$) between the age at which the male students started sex (15.1 years) and the age female students started (14.5 years). The average age of first sexual intercourse among the males was 17 years and that of the females was 16 years. Of all the respondents 25% reported having had their first sexual experience before the age of 15 years. This means that the hearing students engage in sexual activities earlier in life than their non-hearing counterparts.

Sangowawa (2009) embarked on a cross-sectional study among hearing impaired and non-hearing impaired students admitted into a government-owned junior and secondary school in Ibadan, Oyo state. The purpose was to compare sexual practices of hearing impaired students with their non-hearing impaired counterparts. One hundred and fifty six (156) students were used for the study, made up 78 deaf students conveniently sampled and another 78 hearing students who were selected through stratified and the simple random sampling techniques. However, only 74 of the hearing students completed the survey questionnaire. The deaf students consisted of 48 (61.5%) males and 30 (38.5%) females with mean age of 17.1. Questionnaire was used to collect data for the study. The Statistical Package for the Social Sciences (SPSS) version 11.0 was used to analyse the data into frequencies. Chi-square test was used to test associations between categorical variable with $p < 0.05$ level of significance. The results showed that 48.6% of the hearing students had ever had sexual intercourse as against 33.3% of the deaf students ($p = 0.055$). The indulgence of

deaf adolescents in sex is not a mere suspicion as some may think that adolescents who are deaf do not indulge in sexual acts.

Of the deaf who reported being sexually active, the researcher found that as much as 47.8% were 17 years or above when they first experienced sex and their median age at sexual debut was 16 years. 38.7% of the hearing students experienced their first sex at 14 years, with a median age at first sex at 14 years. Based on these revelations the researcher debunked the misconception that the deaf are sexually inactive. However, the age of first sex is slightly lower for the deaf compared to the hearing students. This means that the hearing students engage in sexual activities earlier in life than their non-hearing counterparts. Further analyses revealed that more males than females among both the deaf and hearing students reported being sexually active, and the majority of the sexually active were between the ages of 15–17 years.

Similarly, Rusinga (2012) found from his study of deaf adolescent's perceptions about their sexual and reproductive health issues in Zimbabwe that, 79% of the males and 73% of the female respondents were in relationships; having girlfriends and boyfriends respectively. The report also showed that 40% of the deaf respondents had had experience of sex with more of the male respondents (42%) compared to females (36%) engaging in sex. The first sexual experience among most respondents who reported that they had had sex occurred at age 14 years as against 15 years for males and females respectively. While the results showed that all who ever had sex had it before the age of 18, about 42% had sex before the age of 16 years. Thus the mean age at first sexual experience was 15.8 years.

In another vein, the findings of Touko, Mboua, Tohmuntain, & Perrot, A. (2010) revealed that as much as 80% of the participants had had sexual intercourse. There was no difference between male and female regarding their experience in sex. The average age of first sexual intercourse among the males was 17 years and that of the females was 16 years. Of all the respondents 25% reported having had their first sexual experience before the age of 15 years.

Mugui (2012) conducted a study to assess secondary school students HIV/AIDS awareness, their perceived vulnerability and sexual behaviour in Githunguri District Kenya. The study adopted correlation study design. Stratified sampling technique was used to select 500 students as respondents. Questionnaire tools were used to collect the required information. Data was analyzed using Statistical Package for Social Sciences (SPSS Version 17).

The study established that in as much as the students were aware of some aspects of HIV/AIDS, they were equally not aware of others. The study also found that students held positive attitudes towards abstinence, HIV testing, and condom use. The study concluded that sexual activity among the students began even before entering secondary schools and commercialization of sex in the county existed thereby increasing the risk of the spread of HIV virus.

In another scenario, Rydholm (2009) undertook a study on HIV/AIDS awareness and sexual behavior among adolescents in Babati, Tanzania. The purpose of the study was to analyze how HIV/AIDS awareness could affect sexual behaviour. Using the qualitative and quantitative approaches, data for the study was collected using semi-structured interviews and questionnaires. With a sample size of sixty-eight (68), sixty (60) were students selected from one public secondary school (30) and one private

(30) secondary school. The other participants who were purposively sampled were 4 teachers, 2 headmasters 1 development officer and 1 field assistant.

The ages of the students ranged between 14 - 23 years. Of the 60 students, 30 were males and 30 females randomly selected. The researcher found that more sexual relationships occurred amongst the male students at the private school than the other students who participated in the study. The researcher concluded that the high ages of the student boys at the private school might be responsible for the higher occurrence of sexual relationships compared to the other groups of students in the study. Information from the interviews gave the impression that students engage in sex at a younger age as compared to responses from the students through the questionnaire. For instance, one informant stated that some students have their first intercourse as early as age 8, while most of the male students reported (15 -16 years) and the female students stated 17-18 years of age or older as their age of first intercourse. The researcher concluded that students' response (stating higher age for first intercourse) may be untrue, adding that school regulations that consent to the expulsion of sexually active students from the school may have influenced their responses. The age of first intercourse is important when assessing adolescents risk regarding HIV infection particularly for girls. At an early age the mucous membranous lining of the vagina is lighter and more fragile; therefore, most girls engaging in sex may sustain injuries in the vagina. If condom was not properly used, and if the sexual partner is infected with any STI including HIV, the risk of infection is higher for the girl.

In the Ghanaian context, Yaw (2011) reported from his study of adolescents in the country that about 51% of the students reported having had sexual intercourse in their life time. This is not notwithstanding the campaign about abstinence from sex,

particularly through the HIV/AIDS Alert school programme which targets adolescents in the basic schools for HIV/AIDS prevention. In a similar vein, Boamah (2012) discovered that the overwhelming majority (95.2%) of the respondents said they had involved in sexual intercourse before. The researcher concluded that the trend of adolescent engaging in sex seem to be the order of the day. Their excuse sometimes is that everyone of their age is doing it. They however attributed the high existence of sexual intercourse among adolescents to their thinking that relationship means sexual intercourse. This conclusion was reached when respondents in the Focus Group Discussion (FGD) spoke bluntly thus: *“When you are in a relationship, you must make sex. Because you are partners you can have sex any time.”* (19-year-old boy) *“You have to show love to the boy in other for him to love you too, throughsex.”* (17-year-old female). The adolescents in Boamah’s study seem to perceive sex as an integral part of relationship. Adolescents sometimes make statements such “if you say you love me, then let’s seal our love for each other by having sex” as if sex is equal to love.

2.2.5.2 Number of sexual partners

Sangowawa (2009) investigated the number of sexual partners in their life time of his respondents. Responses ranged from 1 and 8 for the deaf students as against 1 and 6 for the hearing students. Slightly more than half of the students (both the deaf and hearing) reported they had more than one sexual partner since they became sexually active. The results also indicated that 9 (47.4%) of the deaf and 16 (48.5%) of the hearing students said they had only one sexual partner since they became sexually active. Again, in the three months preceding the study, 18 (81.8%) of deaf and 18 (75%) of hearing students respectively said they had only one sexual partner.

Touko et al (2010) found among the sexually active interviewees, 53% of the males and 54.3% of the females said they were into multiple concurrent sexual relationships in the 12 months preceding the study. There was no gender difference regarding this behaviour of participants.

Most (51.4%) of the interviewees who reported having had more than two partners were those not cohabitating. However, for participants who were in relationship with casual partners, multi-partner sexual relationships among males was higher 42.6% than that for females 13.5% ($\chi^2 = 8.35$, $p = 0.003$). There were more Commercial Sex Workers (CSW) among respondents who engaged in casual sexual relations. Thus, 64% of sexually active males and 44% of females had engaged in CSW during the 12 months prior to the study. The researchers then concluded that persons who are deaf may be more prone to the practice of multi-partner sexual relationships than their counterparts in the general population.

With respect to Ghana, Boamah (2012) researched into the Sexual Behaviours and Contraceptive use among Adolescents (15-19 years) in Kintampo. The study employed the cross sectional survey using qualitative and quantitative methods. Seven hundred and ninety-three (793) adolescents made up of male (43.1%) and female (56.9%) participated in the study. Interview and questionnaire were used to collect data for the study. More than 8% of the adolescents who said they have been in a relationship also reported being in concurrent relationships. Thus, 6% of the females and 15% of the male respondents were in sexual relationship with more than one partner at the same time. Similarly, Issaka (2015) found from her study among adolescents with hearing impairment from selected special schools in Ghana that

(125) 40.3% of the respondents indicated that they had had experiences of sexual intercourse with other people aside their regular sexual partner, ,

2.2.5.3 Condom use

Touko, Mboua, Tohmuntain, & Perrot, A (2010) examined the sexual behaviours of hearing-impaired adolescents in Yaounde, the capital city of the Republic of Cameroon. The purpose was to gain better understanding of the sexual behaviour and determine HIV sero-prevalence among the deaf in Yaounde. The study was done using the quantitative cross sectional design. One hundred and twenty-five (125) participants between 15 and 34 years were recruited for the study through the snowball sampling procedure. Data was gathered using interviews and questionnaires. An anonymous pre-coded questionnaire was to collect data on adolescents' knowledge, attitudes and practices on sexuality and HIV/AIDS. The French sign language was the means for data collection through interview. Of the 125 interview forms, 118 (94.4%) were validated. This was made up of 50.8% males and 49.2% females. The behaviours of the one hundred and eighteen (118) deaf participants recruited for the study were explored through interview. One hundred and one (101) of the interviewees underwent HIV serology testing voluntarily. Data on participants' behaviour was analysed descriptively with Epi info software, while sera were tested by health personnel, using rapid and confirmation test reagents.

Touko et al (2010) discovered from their study that, although majority (85%) of the sexually active respondents said they use condom, a substantial portion (15%) of them reported never using a condom in their sexual escapades. while 53% of deaf respondents failed to use condom during their most recent sexual act due to the confidence they had in their partners (55%). A significant difference was found

between males and females regarding non-condom use; 80% females and 20% males. ($\chi^2 = 7.9, p = 0.007$). This difference could result from the fact that most females are unable to assert their rights when it comes to sex and as such the decision to use condom or not rest on the males. When females are not assertive, the men have the final say even when the woman has the condom for use.

For respondents who were deaf and used condom during their most recent sexual intercourse, 54% did so because they wanted to prevent HIV/AIDS, 10.6% aimed at preventing other STIs while 28% used the condom to prevent pregnancy. This revelation is heart-warming in that majority (64.6%) of the deaf not only knew that HIV/AIDS and other STIs can be prevented through condom usage but took practical steps to prevent infection. When adolescents including the deaf are able to translate their knowledge of HIV/AIDS to positive behaviours such as safer sexual acts, the incidence and prevalence of HIV/AIDS among them and their sex partners can be controlled without much difficulty. Further analysis by the researchers indicated that most (60%) of the interviewee proposed the use of condom during their most recent sexual acts. There was however, significant difference between the proportion of men (70.2%) who took such initiative as against women (29.8%) ($\chi^2 = 5, p = 0.025$).

In relation to safer sex practices during the last sexual act before the study, Sangowawa (2009) observed that 17 (77.3%) of deaf students said they did not protect themselves against pregnancy or HIV/AIDS. Only 4 (18.2%) of them reported they used a condom. On the contrary, majority 23 (67.6%) of hearing students reported using condom during their last sexual act. This means that the hearing-impaired students are more likely than their hearing counterparts to engage in unprotected sex. Base on this, the researcher therefore thought that the difference in condom usage

between the deaf and the hearing could be attributed to inadequate access to reproductive health knowledge and services among deaf students. This may have contributed to the over 70% deaf students reporting becoming pregnant or getting someone pregnant as against less than 20% of hearing students. The researcher also suggested the need for adolescent health providers to design sexuality education programme including counselling on safer sex practices for students with hearing impairments.

Contrary, to the findings of Sangowawa (2009), the results of Moura et al (2013) did not establish statistically significant differences between male and female students regarding condom use at first sexual intercourse. However, data revealed a higher rate of condom use among male students during the six months prior to the study. When the researcher went further to determine if there was correlation between adolescent's use of condom during their first sexual intercourse and the sexual intercourse six months before the study the results revealed a statistically significant associated ($\chi^2 = 87.2$; $p < 0.001$).

Rusinga (2012) explored the perceptions of deaf adolescents regarding their vulnerability to sexual and reproductive health problems in Masvingo District of Zimbabwe. A quasi-survey was employed to conduct the research. The researcher employed the snowball sampling technique to identify the respondents for the study. The sample size was fifty (50) deaf adolescents aged between 15 – 24 years. The respondents were made up of 63% males and 37% females who were conveniently selected. Quantitative and qualitative methods were employed to collect data for the study. Thus, in addition to the questionnaires that were administered to all the fifty respondents to gather quantitative data, the researcher conducted in-depth face-to-face

interviews with ten (10) of the deaf youth in order to qualify the magnitude of deaf adolescent's perceptions regarding their vulnerability to sexual and reproductive health problems. The interviewees were purposively sampled.

Of the deaf youth who had had sex at the time of the survey, the author found that about 67% of them said neither they nor their sex partner used a condom the last time they had sex. However, 33% reported that either they or their sex partner used condom during their last sexual act. It also came out that condom use was more common among males (37%) than among females who are deaf (25%). The study also revealed that out of the 87% of the respondents who said they knew of contraceptives, more than half (59%) knew of condoms. Furthermore, majority (83%) of the deaf adolescents said they had received some education on HIV and AIDS from school, workshops, newspaper/magazines and television among others. This may have influenced the belief of about half (47%) the deaf adolescent that, sex before marriage could result in HIV infection. However, these did not reflect in their sexual behaviour. Thus, it is surprising that most respondents who are sexually active do not use condom despite their knowledge of it. There were however some differences regarding deaf adolescents' perception of problems associated with premarital sex, as only 9% of the females compared to about 68% of males feared that premarital sex could expose one to HIV and AIDS.

The findings also showed that 58% of the respondents would want to discuss some issues with their partner before engaging in sex. Among this category, most of them would like to talk about using a condom during sex so as to protect each other from HIV and AIDS and unwanted pregnancy.

With reference to Ghana, consistent contraceptive use (including condom use) among the sexually active in Boamah (2012) research was not encouraging (22.9%) as more than 30% of adolescents had had unwanted pregnancies resulting in 34% abortions and 42.5% live births. The researcher concluded that sexually experienced adolescents practice unsafe sex. Sexual behaviours that result in pregnancies have an equally high potential of resulting in HIV transmission including other STIs if the male sexual partner was already infected. The researcher did not expect the low condom usage among the sexually active adolescents since majority 85.9% of them knew of condoms. For instance, as much as 87.9% and 90.6% knew of male and female condoms respectively. One wonders if adolescents discuss condom use with their sexual partners at all. Once they all seem to know of condoms at least efforts should be made to discuss its usage during sex especially when they are not ready for pregnancy. However, Awusabo-Asare and Biddlecom (2006) cited in Boamah (2012) found from their study of adolescents that 60% of females and 58.5% of males said they had never discussed contraceptive use with their sexual partner.

The findings further revealed that some adolescents are concerned about contracting STIs as such 39.8% consistently protected themselves during sex. The same percentage went for those who had protected sex sometimes while 20.4% reported never protecting themselves despite their concern about getting STIs including HIV/AIDS.

The study therefore found a strong correlation between concerns about getting an STI from a partner and contraceptive use ($p < 0.05$). This is not surprising because if an individual is concerned about something he/she will most likely take a positive step against it. Thus it is understandable when people particularly adolescents who are

worried about contracting STIs including HIV/AIDS from their sexual partners protect themselves. What is surprising however is about those adolescents who failed to protect themselves during sex although they claim to be concern about getting STI infection. Some questions that come to mind regarding this unfortunate but risky behavior are: are these adolescents ignorant about how to protect themselves? Do they have the capacity (skill) to negotiate for safer sex with the partner? Sometimes, people risk their lives due to lack of knowledge or skill. However, Issaka (2015) gathered from her respondents during an interview that adolescent boys feel embarrassed buying and using condom. Some had the perception that only girls who are unfaithful and promiscuous insist on the use of condom. This may be the reason why adolescents with hearing impairment in her study who had had oral, vaginal or anal sexual contact did not use condom in the process.

2.2.6 Relationship between HIV/AIDS knowledge and sexual behaviours of deaf adolescents

Rydholm (2009) conducted a research on HIV/AIDS awareness and sexual behavior among adolescents in Babati, Tanzania. The purpose of the study was to analyze how HIV/AIDS awareness could affect sexual behaviour. The qualitative and quantitative approaches were employed. The semi-structured interviews and questionnaires were used to gather data for the study. The sample size for the study was 68, made up of 60 students from public (15males and 15 females) and private (15 males and 15 females) secondary schools, 4 teachers, 2 headmasters 1 development officer and 1 field assistant. The ages of the students ranged from 14 years to 23 years of age. Of the 60 students, 30 were males and 30 females.

The results of the study did not show evidence that students' HIV/AIDS awareness affected their sexual behaviour. Thus, the student's beliefs that there is cure for HIV/AIDS did not affect the occurrence of sexual relationships amongst them neither did it affect their ages of first intercourse. The researcher expressed surprise at the revelation, explaining that once the students had adequate knowledge about HIV/AIDS the expectation was that the number of sexual relationships would have been lower and their age of first intercourse would have probably been higher than people with less knowledge about HIV/AIDS. Again, there was no evidence in the results to support the hypothesis that adolescent sexual behaviour is affected by access to condoms. Thus students' access to condoms neither increased the occurrence of their sexual relationships nor lowered their age of first intercourse.

Moura, Lamounier, Guimarães, Duarte, Beling, Pinto, Goulart & Grillo_(2013) indicated that, majority (98.7%) of the teenagers expressed doubt on at least one question regarding HIV/AIDS issues. The researchers lamented on the students' doubts about how the AIDS virus is transmitted adding that such doubts could influence their vulnerability to HIV infection.

The researcher tried to establish the correlation between knowledge of HIV/AIDS and sexual behaviours students exhibit. Generally, the findings did not show significant association between scientific knowledge on HIV/AIDS and sexual behaviour of the students. Specifically, the report showed no correlation between knowledge on HIV/AIDS and frequency of condom use by students neither was there relationship between HIV/AIDS knowledge and number of sexual partners each student had.

Meaning, teenagers who appeared to be well informed about how the AIDS virus spreads as well as risky behaviours were not necessarily those that exhibited safer sexual behaviours in terms of condom use and minimal sexual partners. The researcher then concluded that knowledge on HIV alone is not sufficient to induce preventive behaviours. They however suggested that the combined effort of health professionals as key partners and the school is required to help students translate knowledge into behaviour. Thus as the schools provide knowledge on HIV/AIDS, health professionals could focus on attitude and practices through Behaviour Change Communication (BCC) strategies.

In the case of Ghana, Boamah (2012) indicated a strong relationship between adolescents' sexual behaviour (intercourse) and knowledge on pregnancy and when it can occur ($p < 0.05$) p.24. That is to say, adolescents who knew that unprotected sex could result in pregnancy either avoided sex or protected themselves against it or better still engaged in it only when they knew the period was safe. This also means that if adolescents are knowledgeable about behaviours that place them at risk of contracting HIV, they will take steps to avoid such behaviour or protect themselves. The reverse is true for adolescents who may not have knowledge about behaviours that can expose them to HIV infection. Thus, such adolescents will more likely expose themselves to sexual risks. Nevertheless, some who do not have the knowledge may also want to avoid all sexual activities in order not to expose themselves to the risk of infection or pregnancy. In a similar vein, Issaka 2015 explored HIV/AIDS knowledge and sexual behaviours of adolescents with hearing impairments (HI) in selected special schools in four regions of Ghana. The researcher employed the mixed method design. Using the cluster sampling technique 310 respondents was recruited for the study.

The researcher used Self-constructed questionnaire on HIV/AIDS Knowledge and sexual behaviour scales to gather data. The instruments used in gathering data for the study were Interviews and focus group discussions. The researcher analysed the data into frequency, means standard deviations, t-test and correlations using the SPSS version 17. The findings revealed that, there was a statistically significant relationship between students' knowledge of HIV/AIDS and their risky sexual conduct. Pearson $r(308) = +.85, p < .00$ (two tailed). The researcher then concluded that the risky sexual conduct of adolescents who are Hearing Impaired might have resulted from their lack of knowledge about HIV/AIDS. On the contrary, Yaw (2011) discovered from his study of adolescents that although most of the students who said they have ever been involved in sex believed that condom use was necessary in the prevention of HIV/AIDS infection even if one has only one sexual partner. For instance, more than half of them (56%) reported having engaged in sex without condom. This situation is unfortunate in that the adolescents had failed to utilise their knowledge of condom use to protect themselves against the AIDS virus. This action of the sexually active is dangerous as it could increase their risk of contracting the HIV and other STIs.

2.3 Summary of Literature Review

In this chapter, relevant literature on deaf adolescents and HIV/AIDS were reviewed by reviewing theoretical literature to provide a theoretical framework for the study. Attribution Theory was propounded by Bernard Weiner in 1935. Key concepts such as deafness, adolescence, HIV/AIDS and sexual behaviour were reviewed. Empirical literature was reviewed based on the research questions; thus the review covered adolescents on the basic facts of HIV/AIDS (knowledge of modes of transmission, diagnosis and symptoms of HIV/AIDS, signs and symptoms of HIV/AIDS, treatment

and management of HIV/AIDS as well as prevention of HIV/AIDS), sexual behaviour and relationship between HIV/AIDS knowledge and sexual behaviour.

The literature reviewed on knowledge on modes of transmission did not reveal adolescent's knowledge of transmission through vaginal delivery and breastfeeding by mothers infected with HIV/AIDS. Regarding diagnosis of HIV, literature reviewed from other countries did not include participant's knowledge of where to go for HIV test, and whether a person infected with HIV could test negative. No study was found in Ghana on adolescent's knowledge of how HIV is diagnosed, as such; one was unable to tell the nature of the situation. This study fills this gap by providing the knowledge of adolescents who are deaf regarding the diagnosis of HIV/AIDS.

There was no literature from Ghana regarding adolescents' knowledge of the signs and symptoms of HIV/AIDS; the literature from Ghana lacked information on adolescent's take on whether or not AIDS can be cured through unprotected sex with a virgin. This study fills these significant gaps.

From the literature reviewed on knowledge of adolescents on the treatment of HIV/AIDS, all the studies were conducted among hearing adolescents. This study provides the views of adolescents who are deaf regarding the treatment of HIV/AIDS.

Although the literature from Ghana included adolescents' knowledge of how to prevent transmission of HIV/AIDS, the studies were mainly on hearing adolescents. This study will contribute to enrich Ghanaian literature regarding adolescents' knowledge of HIV/AIDS prevention by providing the opinion of students who are deaf regarding this.

Regarding adolescents' engagement in oral and anal sex, the researcher did not find literature from Ghana on these behaviours separately. Issaka (2015) sought to know if adolescents with hearing impairments use condom during oral, anal, and vaginal sex. This questionnaire item did not provide information on adolescents' engagement in oral, anal sex specifically. This study fills the gap by providing information on adolescents' involvement in oral, anal sexual acts.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter covers the research design employed in the study, the population of the study, sample size and the procedure used to sample respondents for the study. The chapter also include, the instruments used to collect data for the research, validity and reliability of the instruments as well as the procedure for data collection. Other issues include data analysis and ethical consideration. The chapter ends with a summary.

3.1 Research Design

The study adopted the descriptive survey design using quantitative approach. Creswell (2012) explained descriptive survey as a design which portrays accurately the characteristics of particular individuals, situations or groups. (McMillan & Schumacher, 2010; Creswell, 2014) stated that a descriptive survey design is one of the most appropriate methods for obtaining factual or attitudinal information or, for research questions about self-reported beliefs, values, motives, ideas, habits, feelings, desires, characteristics and present or past behaviour.

Creswell (2014) describes descriptive survey as non-experimental which deals with relationship among non-manipulated variables. Since adolescents' opinions, beliefs, values and attitudes regarding HIV/AIDS do exist or already have occurred, the study will seek to obtain descriptive and self-reported information from students about the causes, management and prevention of HIV/AIDS among others as well as their sexual behaviours. The descriptive survey design will be the most appropriate. This is because the design assumes that the respondents in this study have information or experiences that bear on the problem being investigated. Besides, the design will

enable the researcher to make use of questionnaires to obtain information from respondents for the study (Creswell, 2012)

Quantitative research involves the collection and use of numerical data. It also analyses data using descriptive and inferential statistics and produces data that are statistically reliable (McMillan & Schumacher, 2010; Creswell, 2014). The quantitative approach was deemed the most appropriate method of collecting data in a non-threatening, confidential manner, as it enabled the researcher to anonymously gather respondents' opinions, beliefs and practices to answer the research questions. The anonymity aspect motivated respondents to be honest in their response to the questions.

3.2 Population

The population of the study was all adolescents in the Junior High School (JHS) level in the schools for the Deaf in the Ahafo and Ashanti regions of Ghana. There were a total of 227 students all together. The population included in this study was adolescents in JHS two and three classes in the Bechem School for the Deaf, and Ashanti school for the Deaf, who were between 13 and 24 years, are deaf, and use Sign Language as their mode of communication. There were 147 students in this category. The researcher preferred students from these classes because they had stayed long enough in their respective schools and might have had adequate exposure to the HIV/AIDS Alert school programs which is on-going in public basic schools in the country. This implies that the JHS 2 and three students might have gained enough experiences that could enable them to provide the information required for the study.

3.2.1 Sample size

The sample size for the study was 110 made up of 23 males and 14 females from Bechem School for the Deaf and 39 males and 34 females from Ashanti School for the Deaf. Agyedu, Donkor & Obeng (2013) asserted that the sample size should neither be excessively large nor too small and it must be adequate enough to make meaningful conclusions. The authors indicated that up to 30% of the population is appropriate. Therefore, the 110 respondents representing 48% of the target population of 227 students was very appropriate.

3.2.2 Sampling techniques

The probability and non-probability sampling techniques were used. The purposive, proportional and simple random sampling techniques were used to select respondents for the study. First, the researcher purposefully chose JHS 2 and JHS 3 from where participants were selected. The researcher then used proportional representation to select the sample size from JHS 2 and JHS 3 of each special school. This gave a reflection of each school's population in the sample size. Proportional representation/allocation according to Agyedu, Donkor & Obeng (2013) and Alvi (2014) is a sampling technique in which the researcher divides a finite population into sub-populations and then applies random sampling techniques to each sub-population. The principle of proportional sampling however enables the researcher to determine the sample sizes of each sub-population and to evenly spread sampling units over the study region. Thus, given the combined accessible population of 147, with 98 from Ashanti School for the Deaf, and 49 from Bechem School for the Deaf, the proportion selected from each school was 73 and 37 respondents respectively. Secondly the proportional representation was again used to select 39 males and 34 female students from Ashanti School for the Deaf and 23 males and 14 females from Bechem School

for the Deaf. This was based on the number of male and female students in these schools. The proportional representation was necessary because Ashanti school for the Deaf (Jamasi) which has the larger population was largely represented. Again, the male population which is larger in both schools had larger representation.

To give equal chance to all eligible respondents, the simple random sampling was employed to obtain the proportion of student respondents of each school. Thus the researcher used the lottery method (with replacement) by writing „Yes“ and „No“ on pieces of paper based on the total number of adolescents in the chosen classes. The number of Yes was equal to the proportion to be selected. The papers were rolled into balls and placed in a non-transparent container for each eligible student respondent to pick one. All those who picked „Yes“ were included in the study.

Table 3.1: Sample size

	Males (Proportion)		Females (Proportion)		Total (Proportion)	
Bechem School for the Deaf	30	(23)	19	(14)	49	(37)
Ashanti School for the Deaf	52	(39)	46	(34)	98	(73)
Total	82	(62)	65	(48)	147	(110)

3.3 Research Instruments

HIV/AIDS Knowledge Questions (HAKQ) and Sexual Behaviour Questions (SBQ) were used to collect data for the study. The HAKQ covered the key themes of the research questions such as knowledge on transmission, diagnoses/symptoms, treatment/management as well as prevention of HIV/AIDS whereas the SBQ focused on the research question regarding sexual behaviour. The questionnaires were crafted in a closed ended five (5) point Likert scale such as strongly disagree, disagree, not sure, agree, and strongly agree. Questionnaires were used to obtain information from the respondents for the study (See Appendix „A“).

3.4 Validity

Content validity was determined by consulting the researcher's supervisor, other lecturers in the Department of Special Education from the University of Education, colleagues in the Special Education Department of the University of Education, Winneba as well as peers who are studying statistics as a course. The consultation was focused on the construction of the questionnaire items as well as the coverage. The researcher first sought the opinion of course mates who read through the questions and made their input. Again, some lecturers were consulted for their suggestions regarding the construction and coverage of the instrument. The researcher's supervisor then scrutinised and made suggestions. All these were incorporated into the questionnaire to ensure their suitability in measuring the attributes being assessed.

3.5 Reliability

Reliability is an effective means of evaluating quantitative research instrument. Creswell (2014) and Atindanbila (2013) explains reliability as the consistency with which a research instrument measures the target attribute in the study. Thus if the same instrument was administered by various researchers under comparable conditions it will provide almost the same results. Bolarinwa (2015) suggests that reliability could be estimated through internal consistency and test-retest among others. In this study, the reliability of the questionnaire was determined by using internal consistency and the test re-test method.

Internal consistency test was run on the questionnaires (HIV/AIDS Knowledge Questions (HAKQ) and Sexual Behaviour Questions (SBQ) by means of Cronbach's Alpha statistics using the SPSS Version 20. Atindanbila (2013) and Tayakol & Dennick (2011) opined that Cronbach's Alpha is the most popular means of determining internal consistency of research questionnaires. The Cronbach's Alphas for each sub-scale in section 2 of the questionnaire emerged as follows: HIV/AIDS Knowledge ($\alpha = 0.722$), Sexual Behaviour ($\alpha = 0.832$). However, an overall Alpha (α) value of 0.777 was attained on the entire questionnaire. According to Battaglia (2011) a reliability value of 0.70 and above is reliable and hence acceptable. This is an indication that the pilot sample of students with deafness consistently responded to most of the items in the questionnaire for the final draft of (HAKQ) and (SBQ).

In addition, the test re-test method was used to test the reliability of the questionnaire. Thus, a group of 15 students who did not form part of the sample size but were of similar ages, and from JHS two and three were conveniently sampled from Koforidua School for the Deaf, to reflect the characteristics of the actual respondents. The

questionnaire was administered to the same group of students twice within a week using the same procedure. The two sets of scores were generated and a reliability coefficient index was calculated. The result yielded was 0.98. (See Appendix“C”). This indicates that the reliability of 0.98 obtained in this study is very strong (Battaglia, 2011).

The reliability results indicate that the research instrument was suitable for investigating HIV/AIDS knowledge and sexual behaviour of adolescents who are deaf in schools for the deaf in the Ahafo and Ashanti regions of Ghana. This pre-test helped eliminate ambiguous questions, established the feasibility of the study, and test the data collection instruments. It also established if there were problems in the questionnaire that was used to collect data to answer the research questions. This agrees with the opinion of Bolarinwa (2015); and Tavakol & Dennik (2011) about a pilot- test when they noted that pilot test helps perfect the instruments so that participants in the main study will experience fewer difficulties in completing them.

3.6 Procedure for Data Collection

3.6.1 Procedure for data collection at Bechem School for the Deaf

According to Creswell (2012), the site where research takes place and gaining permission before entering a site is very paramount in research. An introductory letter was obtained from the Department of Special Education, University of Education- Winneba stating the aims and purpose of the study and the need for the participants to be given their consent and co-operation. This was sent to the Education Directorate of Tano South District in order to gain access to the school, participants, and other documents that could facilitate the study. A copy of the letter was given to the Headmaster of Bechem School for the Deaf during which phone contacts were

exchanged. The researcher and headmaster of the school agreed on the date for interaction with the teachers and students.

Prior to the first day of visit, the researcher contacted the headmaster through phone call to notify of him of my visit. On arrival, I was introduced to the teachers and students by the headmaster in order to establish rapport with them through personal interactions. This interaction was done to solicit participants' maximum support in the conduct of this research. In the cause of establishing rapport, I then explained the import of the research and the nature it will take; including who is required to be involved and why. Explanation regarding why their schools were chosen and the benefits it may bring to the school was made. The researcher then asked for the support of some teachers to assist in interpreting the questionnaire items to the students. In response to this offer, the headmaster of the school invited some teachers and asked me to discuss the task with them, and ask them to give all their support. Through the informal interaction with teachers and students, the researcher discussed the nature of the exercise and the possible dates for administration of the questionnaire.

On my second visit to Bechem School for the Deaf, the Headmaster had already engaged the research assistants in organising JHS 2 and JHS 3 students in the classrooms to enable me select eligible respondents among them using the sampling procedures described in the study. The researcher sought the consent of the participants assured them of their privacy and confidentiality. This is necessary for research ethics because, permission and assurance of security raise respondents' cooperation to provide data (Creswell, 2014). Subsequently, the questionnaires were personally administered to consented teachers by the researcher. It took participants

almost 1 hour to complete the questionnaire. The completed questionnaires were retrieved the same day. The researcher went through each completed questionnaire and ensured that every item was responded to before it was taken from the student. This aided the 100% retention rate of the administered questionnaire.

3.6.2 Procedure for data collection at Ashanti School for the Deaf

The researcher collected an introductory letter from the Department of Special Education to the Ashanti School for the Deaf (See Appendix „B“). The letter stated in brief the reason for the study. The researcher went to the school with the letter after contacting the headmistresses through phone call to ascertain appropriate date to visit. Upon arrival in the schools on the agreed dates, the researcher's first point of call was the school's registry where the secretary asked of my mission and then took me to the office of the headmistress. After the usual pleasantries, the heads asked of my mission and I gave out the introductory letter from my department. I then explained the import of the research and the nature it will take; including who is required to be involved and why. Explanation regarding why that particular school was chosen and the benefits it may bring to the school was made. The researcher then asked for the support of some teachers to assist in interpreting the questionnaire items to the students. The headmistress of Ashanti School for the Deaf invited some teachers and asked me to discuss the task with them, and asking them to give all their support. The researcher then sought permission from the headmistresses and then had informal interaction with staff and students to discuss the exercise and the possible dates for administration of the questionnaire.

On my second visit to Ashanti School for the Deaf, the headmistress had travelled for a meeting so I went to the research assistants straightaway. Once they knew of my visit, as I had called them on phone, the research assistants quickly organised the JHS two and JHS three students in their classrooms to enable me select eligible respondents among them using the sampling procedures described in the study. The researcher sought the consent of the participants assured them of their privacy and confidentiality. This is necessary for research ethics because, permission and assurance of security raise respondents' cooperation to provide data (Creswell, 2014). The teachers were involved because of their understanding of the Ghanaian sign language. They helped the students better understand the questions by interpreting the questions to them ahead of the actual administration.

Before the third visit, the researcher called the heads and the teachers concern to remind them about the exercise and to confirm if the chosen dates and times still stand. The researcher then went to the school on the agreed dates and called on the headmistress in her office. Again, after exchanging greetings, they gave me permission to go ahead and see the teachers concern. The teachers had already arranged a suitable place and organised the students for the administration of the questionnaire. Each student participant answered the questionnaire independently. It took participants between 45mins to 52mins to complete the questionnaire. All participants were made to return the completed questionnaires the same day. The researcher went through each completed questionnaire and ensured every item was responded to before it was taken from the student. This was why analysis did not record missing items.

Baseline information about deaf respondents was obtained; this included their ages recorded in completed years, the school, the class they currently are as well as their sex. The knowledge base of deaf adolescents regarding HIV/AIDS was investigated base on their responses on transmission modes, diagnosis, signs and symptoms as well as treatment and prevention of HIV/AIDS. Adolescents' sexual behaviours were explored base on their first sexual experience, type of sexual activity practiced, number of sexual partners, and condom use among others. Answered questionnaire was put in poly-bags to avoid dirt and possible soiling by rain while on the field. At home, it was kept in a box under lock to ensure safety and confidentiality.

3.7 Data Analysis

The SPSS version 20 was used to analyse the data descriptively into frequencies and percentages presented in the form of tables, pie charts and bar graphs. The independent t-test with a 0.05 level of significance and Pearson correlations were used to test differences and relationships respectively. Creswell (2014) and Alvi (2014) indicated that the independent-samples *t*-test is used to evaluate differences between the means of two independent or unrelated groups. That is, independent-samples *t*-test enables the researcher to assess whether the means for the two independent groups varied significantly from each other. The researcher therefore considers the *t*-test as appropriate in testing the hypothesis since it compared means of two variables - knowledge of male and female students about basic facts of HIV/AIDS, knowledge of students in the Ahafo and Ashanti regions of Ghana on basic facts of HIV/AIDS as well as sexual behaviours of male and female students in Bechem and Ashanti schools for the deaf. Each research question was analysed descriptively into frequencies and percentages. The analysis was done after the five-point questionnaire was collapsed to 3 point [Disagree= 1, Not sure= 2 and Agree=3]

3.8 Ethical Considerations

In conducting research, it is important that ethical considerations be given due attention. The researcher took due cognizance of ethical responsibility in the collection and analysis of data, and the reporting of the information. Informed consent letters were sent to the headmistresses of the two schools. Consent of respondents was sought before the questionnaires were administered. The researcher gave anonymity to respondents by not requiring them to indicate their names on the questionnaire. However, all the schools that took part were acknowledged and given a summary of the report so that goodwill is maintained in future research. Besides, they can benefit from the lessons the study will generate.

3.8 Summary of Chapter

The focus of this chapter was to provide clear description of how the researcher gathered data for the investigation. This was done by indicating the appropriateness and use of the research design (descriptive survey), sampling technique (proportional sampling) instrumentation, and data collection procedure (questionnaire). Validity and reliability of the questionnaire were discussed. The chapter also discussed how data and hypotheses would be analysed into (frequencies and percentages and the t-test with a 0.05 level of significance to test all hypotheses)

CHAPTER FOUR

PRESENTATION OF RESULTS/FINDINGS

4.0 Introduction

In this Chapter, the results of the study are presented in tables and interpreted to reflect the research questions and objectives. The main purpose of the study was to investigate Adolescents' HIV/AIDS Knowledge and sexual behaviours in schools for the Deaf in the Ahafo and Ashanti Regions of Ghana. Thus the results presented are based on the following research questions:

1. What knowledge do adolescents who are deaf in Bechem and Ashanti Schools for the Deaf have about transmission of HIV/AIDS?
2. What do adolescent students who are deaf know about diagnosis and symptoms of HIV/AIDS?
3. How knowledgeable are adolescent students with deafness regarding treatment and management of HIV/AIDS?
4. What is the knowledge of deaf adolescents about prevention of HIV/AIDS transmission?
5. Which types of sexual behaviours do deaf adolescents in Bechem and Ashanti schools for the deaf exhibit?

Hypotheses

H₀₁: There will be no significant difference between knowledge of male and female adolescents of Bechem and Ashanti schools for the deaf on basic facts (modes of transmission, diagnosis, symptoms, treatment and prevention) of HIV/AIDS.

H₀₂: There will be no significant difference between knowledge of adolescents in schools for the deaf in Ahafo and Ashanti regions on basic facts (modes of transmission, diagnosis, symptoms, treatment and prevention) of HIV/AIDS.



Figure 4.1 shows that majority of the respondents 73(66.4%) were sampled from Ashanti school for the Deaf while 37 respondents representing 33.6% were taken from Bechem School for the Deaf. Most of the respondents were sampled from Ashanti school for the deaf because that school has a higher population compared to Bechem School for the Deaf.

Table 4.1: Sex distribution of respondents

Sex	Frequency	Percentage
Male	62	56.4
Female	48	43.6
Total	110	100.0

Source: Field data (2018)

From Table 4.1, it is evident that male respondents (62) represented 56.4% whereas their female counterparts (48) represented 43.6% of the study sample. This is so because in both schools, male are more in number.

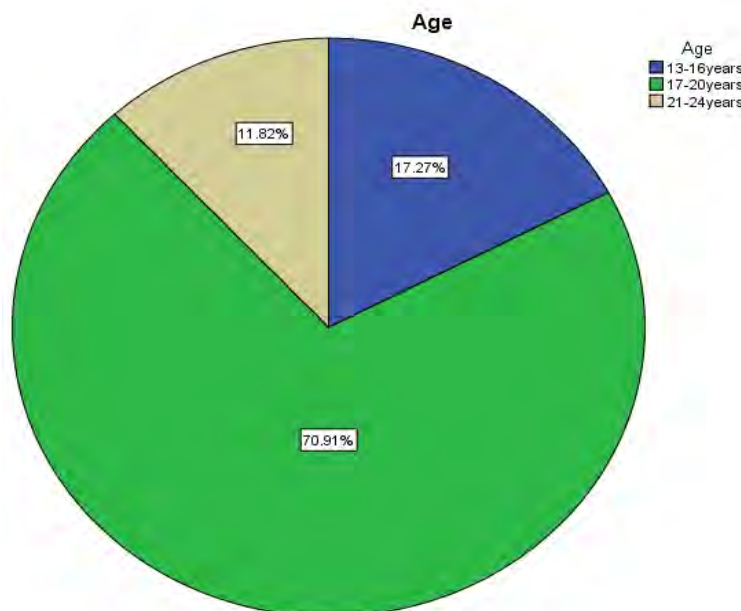


Figure 4.2: Age distribution of participants

Source: Field data (2018)

Information on Figure 2 shows that majority (78) of the students were between the ages of 17-20 representing (70.9%). About 17% of the respondents were aged between 13-16 while those between the ages of 21-24 years constituted a little above eleven percent (11.8%).

4.2 Research Question 1: What knowledge do deaf Adolescents in Bechem and Ashanti schools for the deaf have about transmission of HIV/AIDS?

Figure 4.3 shows the frequency and percentage scores for items on knowledge of modes of HIV/AIDS transmission. Eight items were used and scored as follows: Strongly Disagree (SD) = 1, Disagree (D) = 2, Not sure (NS) = 3, Agree (A) = 4 and Strongly Agree (SA) = 5. For the purpose of analysis, the researcher merged strongly disagree and disagree to be disagree while strongly agree and agree were brought together to become agree.

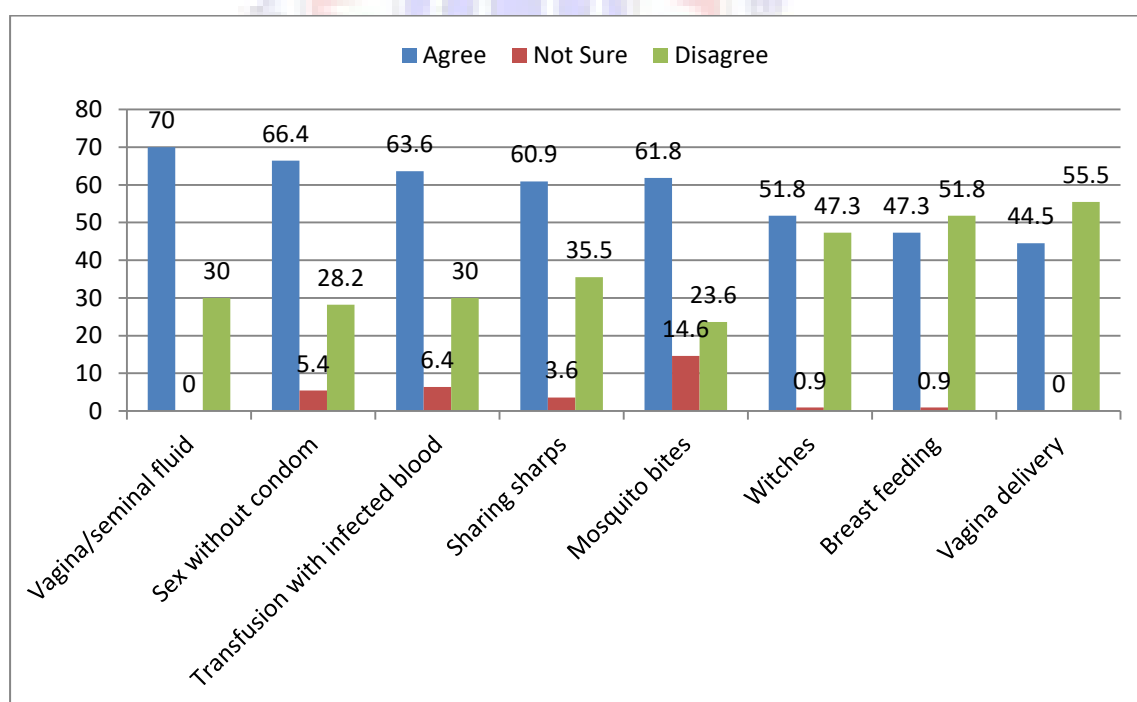


Figure 4.3: Descriptive statistics of adolescents' knowledge regarding modes of transmission of HIV/AIDS

Source: Field data (2018) [Sub-scale Mean = 26.53, Sub-scale Standard Deviation = 5.26]

From Figure 4.3, it is evident that majority 77 (60.9%) of the respondents agreed to the statement that HIV/AIDS could be transmitted through vaginal and seminal fluids. However, 37 (33.6%) disagreed to the statement that HIV/AIDS could be transmitted through vaginal and seminal fluids. Only 6 respondents constituting 5% were not sure whether HIV could be transmitted through vagina and seminal fluid or not.

It is evident from Figure 4.3 that a greater number of the respondents 73 representing (66.4%) agreed with the statement that sex with an HIV infected person without using condom could lead to the transmission of HIV/AIDS. On the other hand, 31(28.2%) of the respondents disagreed with the statement. Six (6) respondents representing 5.4% could not take a decision whether sex with an HIV infected person without using condom could lead to the transmission of HIV/AIDS.

It is evident from Figure 4.3 that majority 70 (63.6%) of the adolescent students agreed with the statement that HIV/AIDS can be transmitted through transfusion with infected blood. However, 33 (30.0%) of the respondents disagreed with the statement that, transfusion with infected blood can result in HIV/AIDS transmission.

Figure 4.3 indicates that most of the students 67 (60.9%) believed that HIV/AIDS can be transmitted through sharing sharp and piercing instruments. On the contrary, 39 (35.5%) of them indicated that sharing sharp and piercing instruments cannot lead to HIV/AIDS transmission. Only 4 respondents representing 3.6% could not indicate their opinion on the issue.

From Figure 4.3, it is clear that majority 68 (61.8%) of the respondents were of the opinion that HIV can be transmitted through mosquito bites whereas 26 (23.6%) of the respondents disagreed with the statement that mosquito bites facilitate HIV/AIDS

transmission. Sixteen 16 (14.6%) of the respondents were not sure whether or not HIV/AIDS can be transmitted through mosquito bites.

It can be seen from Figure 4.3 that, more than half of the students 57 (51.8%) were of the view that an individual could contract HIV/AIDS through the actions of witches and wizards. On the other hand, 52 representing 47.3% disagreed to the statement. Only one respondent (0.9%) did not indicate his/her view whether HIV/AIDS can be transmitted through witches and wizards.

Figure 4.3 shows that 52 of the students representing 47.3% indicated that an infected mother may transmit HIV to the baby through breastfeeding. On the other hand, more than half of the respondents 57 (51.8%) were of the view that HIV infected mothers cannot transmit HIV to their babies through breastfeeding the child. However, one respondent (0.9%) was not certain whether a mother who is infected with HIV can pass on the virus to the baby through breastfeeding.

From Figure 4.3, it is clear that 49 respondents representing 44.5% agreed with the statement that an HIV infected mother may transmit HIV to the child through vaginal delivery. On the contrary, a greater number of the respondents 61 (55.5%) disagreed to the statement that HIV can be transmitted through vaginal delivery.

4.3 Research Question 2

What do deaf Adolescent students who are deaf know about diagnosis and symptoms of HIV/AIDS?

Students were required to state their opinion regarding the diagnosis and symptoms of HIV/AIDS using the five-point likert scale; SD, D, NS, A, and SA. There were 13 items for students who are deaf to respond to. This was made up of 6 items on diagnosis and 7 items on signs and symptoms of HIV/AIDS. Students' responses to these items are presented in Table 2 below.

Table 4.2: Descriptive statistics of adolescents' knowledge regarding diagnosis/signs and symptoms of HIV/AIDS

Statement	Agree		Not Sure		Disagree		<i>M</i>	<i>SD</i>	<i>SSM</i> [<i>SSSD</i>]
	Freq.	(%)	Freq.	(%)	Freq.	(%)			
There are tests available for HIV	84	(76.4)	4	(3.6)	22	(20.0)	2.56	0.93	
Can test blood for HIV	74	(67.3)	7	(6.3)	29	(26.4)	2.41	0.76	
Can test urine/stool for HIV	68	(61.8)	9	(8.2)	33	(30.0)	2.32	0.83	
Can test vaginal/seminal fluid for HIV	76	(69.1)	5	(4.5)	29	(26.4)	2.43	0.90	2.14 [0.91]
HIV is tested in an accredited hospital	41	(37.3)	0	(0.0)	69	(62.7)	1.75	1.05	
May test negative but really infected	35	(31.8)	0	(0.0)	75	(68.2)	1.64	1.00	
Signs and symptoms of HIV/AIDS									
Weight loss	68	(61.8)	9	(8.2)	33	(30.0)	2.32	0.70	
Persistent cough	64	(58.2)	4	(3.6)	42	(38.2)	2.20	0.88	
Persistent diarrhoea	63	(57.3)	10	(9.1)	37	(33.6)	2.24	0.90	
Unexplained weakness	51	(46.4)	0	(0.0)	59	(53.6)	1.93	0.84	2.02 [0.86]
Skin rashes	50	(45.5)	0	(0.0)	60	(54.5)	1.91	0.79	
Persistent fever	48	(43.7)	2	(1.8)	60	(54.5)	1.89	0.94	
HIV infected person may appear healthy	35	(31.8)	0	(0.0)	75	(68.2)	1.64	0.96	

Source: Field data (2018) [*M*=Mean, *SD* = Standard Deviation, *SSM* = Sub-scale Mean, *SSSD* = Sub-scale Standard Deviation].

Table 4.2 shows that majority of the respondents 84 (76.4%) opined that there are tests available for diagnosing HIV/AIDS. On the other hand, 22 (20.0%) of the respondents thought otherwise. However, 4 (3.6%) of the respondents did not indicate their opinion regarding the availability of tests for HIV/AIDS.

From Table 4.2, majority of the students 74 (67.3%) indicated that HIV/AIDS can be diagnosed by testing the blood of individuals whereas 29 representing 26.4% disagreed with the statement that HIV/AIDS can be diagnosed by testing blood. However, 7 (6.3%) were unable to take a decision whether or not HIV/AIDS can be diagnosed through blood test.

Table 4.2 indicate that a greater number of the respondents 68 (61.8%) agreed with the statement that HIV/AIDS can be diagnosed by testing urine/stool of an infected person, while 33 (30.0%) of the respondents think that HIV/AIDS cannot be diagnosed by testing urine/stool. However 9 (8.2%) of the respondents were not certain if urine/stool test could help diagnose HIV/AIDS.

It is evident from Table 4.2 that 76 of the respondents representing 69.1% believed that testing vaginal and seminal fluids is a means of diagnosing HIV/AIDS. On the contrary minority of the respondents (29) representing 26.4% disagreed with the statement that HIV/AIDS can be diagnosed by testing vaginal and seminal fluids. Only 5 (4.5%) of the respondents could not indicate whether HIV/AIDS can be diagnosed by testing vaginal and seminal fluids.

Table 4.2 shows that 41 (37.3%) of the respondents believed that tests for HIV/AIDS can be done in all accredited health facilities. On the contrary, most of the respondents 69 (62.7%) indicated that HIV/AIDS tests is not done in all accredited health facilities.

From Table 4.2, it is clear that only 35 (31.8%) indicated that an individual may test negative to HIV/AIDS although he/she is really infected with HIV/AIDS. However, majority of the deaf respondents 75 (68.2%) disagreed with the statement.

Table 4.2 indicate that majority of the students 68 (61.8%) agreed to the statement that persons infected with HIV/AIDS may lose up to 10% of their body weight. On the contrary 33 of them representing 30.0% disagreed to the statement that loss of body weight up to 10% is a symptom of HIV/AIDS. Nine (9) respondents representing 8.2% could not indicate their opinion regarding the statement that an individual living with HIV/AIDS may lose up to 10% body weight.

It is evident from Table 4.2 that most of the students 64 (58.2%) opined that persons infected with HIV/AIDS may suffer persistent cough for one month or even more. On the other hand, 42 (38.2%) of the students did not believe that individuals infected with HIV/AIDS suffer persistent cough for one month. Only 4 (3.6%) of the respondents could not take a decision whether HIV/AIDS infected persons suffer persistent cough up to a month.

Table 4.2 shows that a greater number of the respondents 63 (57.3%) were of the opinion that persons infected with HIV/AIDS may suffer diarrhoea which may last for one month or more, while 37 (33.6%) of the respondents disagreed with the statement. However 10 (9.1%) of the respondents were not sure if persistent diarrhoea for one month or more is a symptom of HIV/AIDS.

From Table 4.2 it is clear that 51 (46.4%) of the respondents agreed to the statement that unexplained body weakness is a symptom of HIV/AIDS whereas most of the respondents 59 (53.6%) indicated that unexplained body weakness is not a symptom of HIV/AIDS.

It is clear from Table 4.2 that 50 (45.5%) of the respondents agreed to the statement that shingles/Anansi (skin rash) is a symptom of HIV/AIDS. However, most respondents 60 (54.5%) disagreed with the statement that shingles/Ananse (skin rashes) is a symptom of HIV/AIDS.

Table 4.2 shows that less than half of the respondents 48 (43.7%) were of the opinion that persistent fever lasting more than one month is a sign and symptom of HIV/AIDS. On the contrary, a greater number of the respondents 60 (54.5%) were of the view that persistent fever that lasts more than one month is not a symptom of HIV/AIDS. However, 2 (1.8%) could not indicate their opinion whether or not persistent fever for a month is a symptom of HIV/AIDS.

From Table 4.2, it is clear that 41 (37.2%) of the respondents agreed to the statement that an individual infected with HIV may appear healthy without symptoms. On the contrary, majority of the students 66 (60.0%) disagreed with the statement. Three (3) students representing (2.7%) were not sure if an individual could look healthy although he/she is infected with HIV.

From items 1-3 it is evident majority of the students who are deaf have good knowledge of HIV/AIDS diagnosis. However, a greater number of the students do not have adequate knowledge regarding items 4-6 (Table 4.2). Again, Table 4.2 above shows that more than half of the respondents are knowledgeable about signs and symptoms of HIV/AIDS (items 7-9). On the other hand, from items 10-13 it is clear that more than half of the respondents have limited knowledge about signs and symptoms of HIV/AIDS.

4.4 Research Question 3: How knowledgeable are deaf adolescent students regarding the treatment and management of HIV/AIDS?

Just like in the other sections of the questionnaire, students were required to indicate whether they disagreed, agreed or otherwise with statements regarding how HIV/AIDS is treated/managed. Seven items were presented in the form of positive statements and students were to indicate that opinion through the 5-point Likert scale. Below are the results of Figure 4.4.

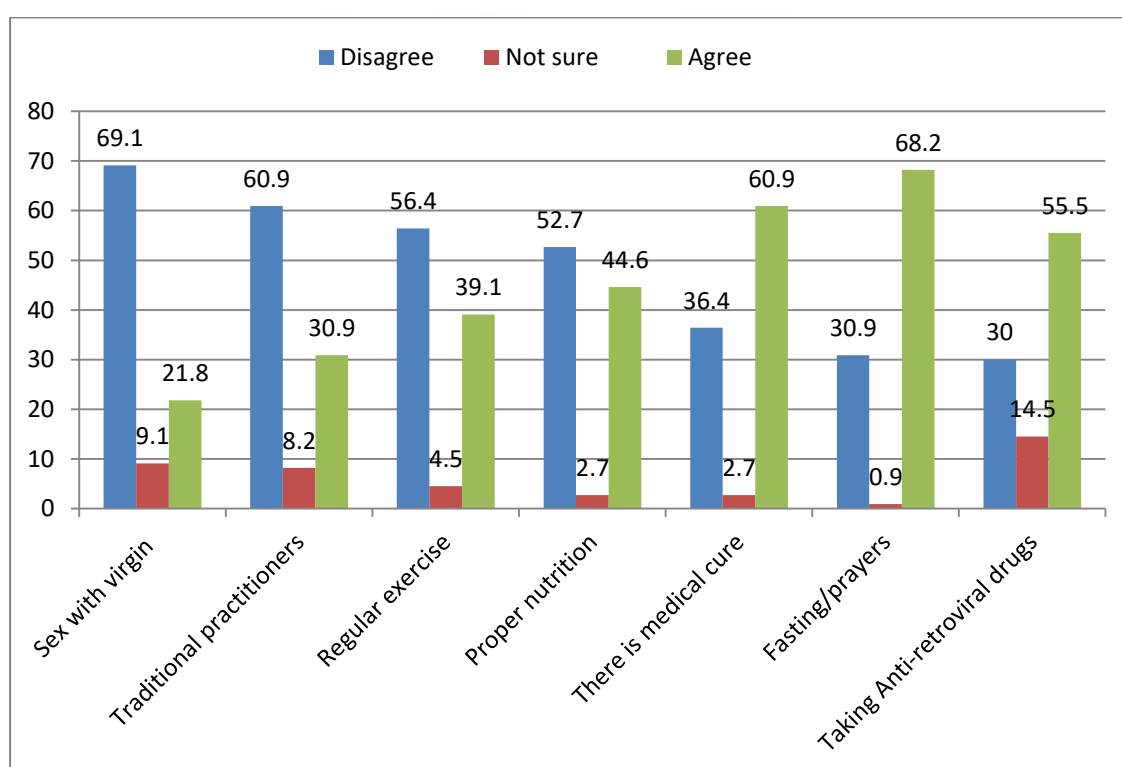


Figure 4.4: Descriptive statistics of adolescents' knowledge regarding treatment/management of HIV/AIDS

Source: Field data (2018) [Sub-scale Mean = 20.79, Sub-scale Standard Deviation = 3.89]

From Figure 4.4, it is evident that majority of the adolescent students 76 (69.1%) disagreed with the statement that having unprotected sex with a virgin can cure one of HIV/AIDS. On the other hand, 24 (21.8%) of the students opined that, when a person infected with HIV/AIDS engages in unprotected sexual intercourse with a virgin,

he/she could be cured of the disease. However, 10 (9.1%) of the students were not sure whether or not having unprotected sex with a virgin could cure one of HIV/AIDS.

It can be seen from Figure 4.4 that most of the respondents 67 (60.9%) believed that traditional practitioners cannot cure HIV/AIDS, while less than half of the respondents 34 (30.9%) were of the view that traditional practitioners can cure HIV/AIDS. However, 9 of the respondents representing 8.2% could not take decision on the statement.

Figure 4.4 indicates that a greater number of the respondents 62 (56.4%) disagreed with the statement that light regular exercise can help reduce the effect of HIV/AIDS on infected persons. On the contrary, 43 (39.1%) of the respondents agreed with the statement. Only 5 (4.5%) of the respondents did not indicate their opinion regarding the statement that the effect of HIV/AIDS on infected persons can be reduce through light, regular exercise

It is evident from Figure 4 that more than half 58 (52.7%) of the respondents were of the view that taking proper nutrition cannot help in reducing the effect of HIV/AIDS on the infected person. On the other hand, 49 (44.6%) of the respondents opined that taking proper nutrition can help manage HIV/AIDS. However, 3 (2.7%) of the adolescents were not sure if taking proper nutrition could help persons living with HIV/AIDS.

From Figure 4.4, it is evident that less than half of the respondents 40 (36.4%) disagreed with the statement that there is medical cure for HIV/AIDS whereas majority of the respondents 67 (60.9%) think that HIV/AIDS can be cured medically.

However, 3 (2.7%) could not take a decision regarding availability of medical cure for HIV/AIDS.

Figure 4.4 indicates that majority of the respondents 75 (68.2%) opined that HIV/AIDS can be cured through prayers and fasting, while 34 (30.9%) of the respondents disagreed with the statement. One respondent (0.9%) did not indicate his/her opinion whether prayers and fasting can cure HIV/AIDS.

It is clear from Figure 4.4 that, a greater number of the respondents 61 (55.5%) believed that taking anti-retroviral drugs can help reduce the effect of HIV/AIDS on an infected person. However, 33 representing 30.0% of the respondents did not think so. Sixteen (14.5%) of the respondents could not take a decision whether or not anti-retroviral drugs can help manage HIV/AIDS.

The adolescent students' responses on items 1 and 2 indicate that a majority of them have adequate knowledge about the misconceptions regarding treatment/management of HIV/AIDS. From item 6, students have good knowledge about managing HIV/AIDS. However, items 3 - 4, show that more than half of the students have inadequate knowledge of how HIV/AIDS can be treated/managed.



Table 4.3 indicates that a greater number of the respondents 73 (66.4%) agreed with the statement that HIV infection can be prevented by washing the genitals immediately after unprotected sex with an HIV infected person. However, a few of the respondents 26 (23.6%) indicated that washing the genitals immediately after unprotected sex with an infected person cannot prevent infection with HIV/AIDS. Only 1 (0.9%) respondent could not take a decision on the statement.

From Table 4.3, it is clear that most of the respondents 67 (60.9%) indicated that persons who avoid sharing of sharp and piercing instruments with infected persons may reduce their risk of being infected with the AIDS virus. On the contrary, 34 (30.9%) of the respondents did not agree with the statement. Nine (8.2%) of the students were not sure whether an individual could prevent HIV infection by avoiding sharing sharp and piercing instruments.

Table 4.3 show that majority of the respondents 67 (60.1%) opined that avoiding transfusion with infected blood is a means of preventing HIV infection while 34 (30.9%) of the respondents disagreed with the statement that HIV infection can be prevented by avoiding transfusion with infected blood, only 8 (7.3%) of the respondents could not indicate their opinion whether avoiding transfusion with infected blood can prevent HIV infection.

From Table 4.3, a greater number of the students who are deaf 68 (61.8%) disagreed with the statement that HIV infected mothers may prevent transmitting the virus to their babies if they avoid delivering through the vagina. However, 29(26.4%) of the respondents agreed with the statement. Thirteen (13) of the respondents representing 11.8% did not take a decision whether infected mothers could prevent transmitting HIV/AIDS onto their babies if they avoided vagina delivery.

Table 4.3 indicates that majority of the respondents (62) 56.4% were of the opinion that abstaining from oral, vaginal and anal sex is not a means of preventing HIV/AIDS infection. On the other hand, 41 (37.2%) of the respondents agreed to the statement that abstaining from oral, vaginal and anal sex may prevent HIV/AIDS infection. Only 7 (6.4%) of the respondents were not sure if abstaining from all forms of sex could prevent HIV/AIDS infection.

From Table 4.3, it is evident that more than half of the respondents 57 (51.8%) disagreed with the statement that keeping to only one faithful, uninfected sexual partner may reduce the risk of contracting HIV/AIDS. On the other hand, 49 (34.6%) of the respondents agreed with the statement an individual may avoid HIV infection if he/she keeps to only one faithful uninfected sexual partner. However, 4 (3.6%) of the respondents did not indicate their opinion regarding the statement that having sex with one partner who is faithful and uninfected can reduce the risk of HIV/AIDS infection.

Items 1, 3, and 4 show that a greater number of the respondents demonstrated good knowledge on how HIV/AIDS infection can be prevented. On the contrary, it is clear from items 5-7 more than half of the respondents exhibited inadequate knowledge on HIV/AIDS prevention strategies. From item 2, it shows that majority of the students have a misconception of how HIV/AIDS can be prevented.

4.6 Research Question 5: Which types of sexual behaviour do adolescent students in Bechem and Ashanti schools for the deaf exhibit?

Table 4.4: Sexual behaviour of deaf adolescents

Statement	Agree Freq. %)	Not Sure Freq. %)	Disagree Freq. %)	Mean	SD	SSM [SSD]
Have had oral sex	22 (20.0)	8 7.3	80 (72.7)	2.89	0.89	
I engage in anal sex	33 (30.0)	0 0.0	77 (70.0)	2.40	0.99	
I use condom always	34 (30.9)	0 0.0	76 (69.1)	2.38	0.76	
Had sex with others beside regular partner	39 (35.5)	5 4.5	66 (60.0)	2.25	0.84	
Had more than one sex before age 15	37 (33.6)	10 9.1	63 (57.3)	2.24	0.95	2.20[0.81]
Sex with more than one regular partner	60 (54.5)	0 0.0	50 (45.5)	1.91	0.63	
Can have many partners once I trust them	60 (54.5)	7 6.4	43 (39.1)	1.85	0.61	
Have had sex before	73 (66.4)	0 0.0	37 (33.6)	1.67	0.77	

Source: Field data (2018) [*M*= Mean, *SD* = Standard Deviation *SSM* = Sub-scale Mean, *SSSD* = Sub-scale Standard Deviation]

Table 4.4 indicates that a greater number of the respondents 80 (72.7%) disagreed with the statement that they do engage/have ever engaged in oral sex whereas 22 (20.0%) of the respondents agreed with the statement. However, 8 (7.3%) of the respondents could not indicate their opinion whether they do engage/have ever engaged in oral sex or not.

From Table 4.4, it is clear that majority of the students 77 (70.0%) indicated that they have never engaged in anal sex. On the contrary, 33 (30.0%) of the students opined that they engage/have ever engaged in anal sex.

Table 4.4 show that most of the respondents 76 (69.1%) were of the opinion that they do not always use condom during sexual intercourse. Only 34 (30.9%) of the respondents opined that they use condom during every sexual debut.

From Table 4.4, it is evident that a greater number of the respondents 66 (60.0%) disagreed with the statement that they ever engaged in sex with other people beside their regular sexual partner (s). However, 39 (35.5%) agreed with the statement that they ever had sex with other people either than their regular sexual partner (s). only 5 (4.5%) of the respondents did not indicate their opinion on the statement.

Table 4.4 shows that more than half of the respondents 63 (57.3%) indicated that they did not experience sexual intercourse before they turned 15 years whereas 37 (33.6%) were of the view that they had experience in sex before age 15. However, 10 (9.1%) of the respondents could not take a decision whether they experienced sex before turning 15 years or not.

From Table 4.4 most of the students who are deaf 60 (54.6%) agreed to the statement that they have/have had more than one regular sexual partner in their life time. On the other hand, 50(45.4%) of the respondents disagreed with the statement.

Table 4.4 indicates that majority of the respondents 60 (54.6%) were of the view that they could have many sexual partners once they trusted them. This is contrary to the views of 43 (39.1%) of the respondents who think that they could not have many sexual partners on the basis of trust. However, 7 (6.4%) of the respondents did not take any decision whether trust alone was a good basis to have many sexual partners.

From Table 4.4 it is evident that majority of the respondents 73 (66.4%) agreed with the statement that they had had sex before, whereas 37 (33.6%) of the respondents indicated they have never had sex in their lifetime.

It is clear from items 1 and 2 that a greater number of the respondents demonstrated good behaviour regarding their sexual life. Items 4 and 5 indicates more than half of the respondents exhibit a good sexual life whereas items 3, 6, 7 and shows that majority of the respondents, engage in risky sexual behaviour.

4.7 Research Hypotheses

4.7.1 Hypothesis 1: Differences in knowledge of basic facts of HIV AIDS

between male and female adolescents in Bechem and Ashanti schools for the deaf.

It is hypothetical that:

H₀: Statistically, significant difference does not exist in the knowledge of male and female adolescents on basic facts of HIV AIDS in Bechem and Ashanti schools for deaf.

H₁: Statistically, significant difference does exist in the knowledge of male and female students on basic facts of HIV AIDS in Bechem and Ashanti schools for deaf.

Table 4.5: Group statistics and independent sample T-test of male and female adolescents on basic facts of HIV/AIDS in Bechem and Ashanti School of Deaf

Sex	N	Mean	Sd	T	Df
Male	62	112.58	14.606	-173	108
Female	48	113.02	11.300		113.0

Source: Field data(2018)

Table 4.5 presents group statistics and independent sample T-test of male and female adolescents' knowledge of basic facts of HIV AIDS in Bechem and Ashanti schools for the deaf. An examination of the means (Male: mean = 112.6, SD 14.6; Female: mean = 113.0, SD 11.3) indicates that there is some differences between them. To determine whether this difference is statistically significant, an independent t-test was calculated. The t-test showed that the calculated value was -1.73. The critical value with a degree of freedom of 108 at an alpha level (α) of 0.05 was 1.660. Since the critical value is greater than the calculated value of t-test, we fail to reject the null hypothesis. This means that we accept the null hypothesis which states that there is no statistically significant difference between the means of male and female adolescents' knowledge of HIV AIDS in Bechem and Ashanti Schools for the Deaf.

4.7.2 Hypothesis 2: Differences in knowledge of HIV AIDS between adolescent in Bechem and Ashanti school for the deaf.

H₀: *There is no statistically significant difference between knowledge of adolescents in Bechem and that of Ashanti schools for the deaf regarding HIV AIDS.*

H₁: *There is statistically significant difference between knowledge of adolescents in Bechem and Ashanti schools for the deaf regarding HIV AIDS.*

Table 4.6: Group statistics and independent sample t-test of adolescents' knowledge of HIV AIDS in Bechem and Ashanti School for the Deaf

School	N	Means	SD	T	Df
Bechem	37	108.46	13.834	-2.496	108
Ashanti	73	114.96	12.412		

Source: Field data (2018)

Table 4.6 above shows the means scores and standard deviation for adolescents in Bechem and Ashanti schools for the deaf. Bechem mean score is 108.46, and SD is 13.83. Ashanti mean score is 114.96 and SD is 12.41. A look at the two means reveal some differences. To find out whether the difference is statistically significant, an independent t-test was conducted. The t-test revealed that the calculated value was -2.496. The critical value of t-test with a degree of freedom of 108 and at an alpha level of 0.05 significant was 1.660. Since the calculated value of the t-test is less than its critical value, the null hypothesis is accepted. This means, there is no significant difference in knowledge regarding HIV AIDS between Bechem and Ashanti schools for the deaf adolescents.

4.7.3 Hypothesis 3: Differences in sexual behaviour between male and female adolescents in Bechem and Ashanti schools for the deaf.

H₀: There is no statistically significant difference between male and female adolescents sexual behaviour in Bechem and Ashanti schools for the deaf.

H₁: There is statistically significant difference between male and female adolescents' sexual behaviour in Bechem and Ashanti schools for the deaf.

Table 4.7: Group Statistics and independent sample T-Test of male and female sexual behavior in Bechem and Ashanti Schools for the Deaf

Sex	N	Means	SD	T	Df
Male	62	21.84	5.602	0.23	108
Female	48	21.81	6.184		

Source: Field data (2018)

Table 4.7 indicates that male means score (21.84) is greater than that of the female mean score (21.81). To determine whether this difference is statistically significant, independent sample t-test was computed. The t-test yielded a calculated value of 0.23.

At an alpha level of 0.05 with a degree of freedom of 108, the critical value was 1.660. Since the calculated value of t-test is smaller than the critical value the alternative hypothesis is rejected in favour of the null hypothesis. Which states that: there is no statistically significant difference between sexual behaviour of male and female adolescents in Bechem and Ashanti school for the deaf.

4.7.4 Hypothesis 4: Difference in sexual behaviour between adolescents in

Bechem and Ashanti schools for the deaf.

H₀: Statistically, significant difference does not exist between sexual behaviour of adolescents in Bechem and Ashanti school for the deaf.

H₁: Statistically Significant differences exist between sexual behaviour of adolescents' in Bechem and Ashanti school for the deaf.

Table 4.8: Group statistics and independent sample t-test of sexual behaviour of adolescents in Bechem and Ashanti school for the deaf

School	N	Mean	SD	T	Df
Bechem	37	22.41	4.843	.738	108
Ashanti	73	21.53	6.290		

Source: Field data (2018).

It is evident from Table 4.8 that there are differences in the mean scores and standard deviations of Bechem (mean 22.41 and SD 4.843) and Ashanti (mean 21.53 and SD 6.290) respectively. To find out whether this difference was statistically significant, an independent sample t-test was calculated. The calculated value of the t-test was .738. The critical value of “t” using 0.05 level of significant with the degree of freedom (df) of 108 was 1.660. Comparing the critical value with the calculated value, the critical value is greater; hence the null hypothesis is accepted whiles the alternate hypothesis

is rejected. This means there is no statistically significant difference in sexual behaviour between adolescents in Bechem and Ashanti schools for the deaf.

4.7.5 Hypothesis 5: Relationship between adolescent's Knowledge of HIV/AIDS and their sexual behaviours.

H₀: There is no statistically significant relationship between adolescent's knowledge and their sexual behaviour

H₁: There is statistical relationship between adolescent's knowledge and their sexual behaviour.

Table 4.9: Correlation between HIV/AIDS knowledge and sexual behaviour

		HIV/AIDS Knowledge	Sexual Behaviour
HIV/AIDS Knowledge	Person	1	-.346
	Correlation		
	Sig. (2-tailed)		.000
	N	110	110
Sexual behaviour	person	-.346	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	110	110

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

Source: Field data (2018)

A correlation analyses was used to examine the relationship between sex-related HIV/AIDS knowledge and sexual behaviour of adolescent students. From a statistical view, it was indicated that knowledge and sexual behaviour were significantly correlated, $r(108) = -.35, p < .00$. With the value of r being negative implies that there is an inverse linear relationship between the data P-value - .00. an alpha of 0.05 level (2-tailed). Comparing p-value to that of the significant level, the p-value is lower than the significant level of 0.05. This implies that the correlation is statistically

significant. Thus, comparing the two variables; HIV/AIDS knowledge and sexual behaviour indicates positive correlation.



CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter presents the discussion of results of the study. These discussions are organized based on the research questions. This study investigated HIV/AIDS knowledge and sexual behaviour of adolescent students who are deaf. Key to this study was to find out the difference between male and female students knowledge as well as determine the relationship between students' knowledge of HIV/AIDS and their sexual behaviour.

In this chapter, the focus is to discuss key findings presented in chapter four. The discussion begins with students' background information and followed by knowledge of HIV/AIDS transmission, knowledge on treatment/management of HIV/AIDS, knowledge on HIV/AIDS prevention, sexual behaviour and ends with relationship between students HIV/AIDS knowledge and their sexual behaviour.

5.1 Background Information

A sample of one hundred and ten ($n=110$) students who are deaf were involved in the study. The sample was obtained from two (2) schools for the deaf in the Brong Ahafo and Ashanti regions of Ghana, thus Ashanti school for the deaf which form the majority 73 (66.4%) and Bechem School for the Deaf 37 (33.6%). The sample was made up of males which represented the majority 56.4% while females were the minority group 43.6%. This reflects the population of each school.

5.2 Discussion of Findings

5.2.1 Findings on research question 1: What knowledge do adolescents who are deaf in Bechem and Ashanti schools for the deaf have about transmission of HIV/AIDS?

Analysis of data on the knowledge of adolescents in Bechem and Ashanti schools for the deaf about transmission of HIV/AIDS revealed that, majority (70%) of the students was of the view that HIV/AIDS can be transmitted through vaginal and seminal fluids. This finding agreed with Othman (2014) who researched into the knowledge about HIV/AIDS among high school students in Erbil city- Iraq. The findings revealed that a greater number of the 437 students were aware that HIV can be transmitted through sexual intercourse. Similarly, Appiah-Agyekum and Suapim (2013) found out from their study that a greater number of the adolescent respondents in Accra, Ghana knew that HIV can be transmitted through semen and vaginal secretions. On the other hand, the finding contradicted the finding of Blaloyi (2010) who undertook a study on HIV/AIDS knowledge among adolescents who are deaf in South Africa and found that the students did not have sufficient knowledge about the modes of transmission of HIV/AIDS.

From the above findings“ the students who know that vaginal and seminal fluids are mediums through which one may contract HIV/AIDS they are likely to avoid unprotected sex in order to avoid coming to contact with vaginal and seminal fluids. In line with the attribution theory, when the students attribute scientific and correct modes of transmission of the disease; their conduct will be influenced positively. Particularly students may avoid sexual intercourse which often involves exchange of such fluids. Even where students are unable to avoid sex, they may use condom in the process. Avoiding sex or using condom during sex will help reduce students“ risk of

contracting HIV/AIDS and thereby reduce HIV/AIDS prevalence among adolescents. On the other hand, students who lack knowledge on this may get involved in unprotected sexual intercourse which may expose them to the AIDS virus hence increasing the HIV/AIDS prevalence rate among the youth.

The results of the study also indicated that a greater number (66.4%) of the students were aware that engaging in sex with an infected person without using condom may result in HIV/AIDS transmission. This means that if deaf students must engage in sex, they will always use condom in order that they may avoid being infected with HIV. When deaf students use condom during every sexual act, it will help reduce their risk of becoming expose to sexually transmitted infections (STIs) including HIV/AIDS. Condom use will also prevent unwanted pregnancy which often take adolescents out of school or slow their progress in school. However, if the students are unaware that sex without using condom can lead to unplanned pregnancies and sexually related infections, they would probably engage in risky behaviour that may make them victims of the above situations. This study is consistent with Tarkang (2009) and Appiah-Agyekum and Suapim (2013) as they found from their respective studies that majority of the respondents were aware that HIV/AIDS may be transmitted through having unprotected sex with an infected partner. Similarly, Ocran and Danso (2009) indicated in their study on adolescents' knowledge of HIV/AIDS in the Elembelle District of the Western region of Ghana that majority of the students were well informed that HIV/AIDS can be transmitted through unprotected sexual contact.

The study further revealed that about 62% (n= 68) of the students thought that HIV/AIDS can be transmitted through mosquito bite. This is an indication that students lack knowledge that mosquitoes cannot transmit HIV/AIDS. Students may

then focus attention on avoiding contacts with mosquitoes thinking they are protecting themselves against HIV infection, while ignorantly involving themselves in practices that may expose them to HIV. Such behaviour has the potential of increasing adolescents risk for HIV infection. However, if students are aware that mosquitoes do not transmit HIV, they may focus on their efforts on the true transmission modes thereby reducing their risks for infection. In tandem with the above, Agyemang, Buor and Tagoe-Darko (2012) established from their study among hearing adolescents in Ejura-Sekyidumasi in the Ashanti region of Ghana that nearly half of the respondents had the perception that HIV/AIDS could be transmitted through mosquito bites. In a similar vein, Mprah (2013) found in his study among deaf adolescents in the cities of Accra and Tamale in Ghana, that majority of the students was of the view that mosquitoes could transmit the virus that causes AIDS. On the contrary, Tarkang (2009) and Bharati and Bharati (2014) reported from their studies in Cameroun and Nepal respectively that most of the students knew that HIV/AIDS is not transmitted through mosquito bites

Again, the findings revealed that more than half (51.8%) of the respondents thought that HIV/AIDS can be transmitted through witchcraft. This means that respondents have a misconception regarding modes of transmission of HIV/AIDS. This misconception may mislead students who are deaf into thinking that being careful of witches and wizards in their community will prevent them from contracting HIV/AIDS. This finding agrees with that of Issaka (2015) which revealed that adolescents with Hearing impairment in some selected special schools in Ghana ($M=2.94$, $SD =1.44$) believed that a person can acquire HIV and AIDS from being bewitched. On the other hand, the results of this study does not agree with the finding of Agyemang, Buor and Tagoe-Darko (2012) who found from their study that only

one-third of the adolescents in Ejura- Sekeredumasi in the Ashanti region of Ghana believed that HIV/AIDS could be transmitted through witchcraft. Similarly, Gabriel et al 2016 found in their research on knowledge of HIV/AIDS, attitudes towards sexual risk behaviour and perceived behavioural control among college students in Botswana that majority of the students knew that HIV is not transmitted by witchcraft. In a similar vein, Zunurene (2014) found from his study that most of the respondents indicated that HIV is not transmitted through the actions of witches and wizards. The results of this study imply that the students have attribution error regarding the transmission of HIV/AIDS. According to the attribution theory, when people are ignorant of the actual cause of disease such as HIV/AIDS, they are likely to engage in risky lifestyles. Thus the students in this study may focus on avoiding contacts with people they believe are witches/wizards (which is a „no risk“ behaviour) while sharing sharps and engaging in blood covenant with people they have no idea about their HIV status. Such behaviour has a high risk for infection with HIV.

This difference may be so because the hearing students in the other studies may have better knowledge of the modes of transmission of HIV/AIDS probably due to their ability to access information about the disease from radio and television; common media that carry information about HIV/AIDS.

It is worth noting that more than half (51.8%) of the students were of the view that HIV infected mothers cannot transmit the virus to their babies through breast feeding. This is an indication that students are not well informed about the modes of transmission of HIV/AIDS. Such lack of knowledge may cause adolescent mothers who are deaf to breast feed their babies or even advice their relatives to do same even when they know they are infected with HIV. Such ignorant behaviour may lead to an

increase in HIV infection rate among new babies of adolescents who are deaf. However, for the minority who opined that breastfeeding from HIV infected mothers may result in transmitting the virus to the babies are not likely to breastfeed or advice others to breastfeed babies when they know they are infected. This may help reduce HIV/AIDS prevalence among children. The findings do not agree with Othman Samir (2014) study in Erbil city in Iraq which indicated that most of the students agreed that HIV/AIDS can pass on from an infected mother to a child. Similarly, Appiah-Agyekum and Suapim (2013) established from their study that most (90%) of the students indicated that HIV can be transmitted through sucking the breast milk of an infected mother. This buttresses the point that hearing adolescents have better knowledge regarding the modes of HIV/AIDS transmission. The reason for the difference could be that the hearing students have better reading skills and as such are able to understand written material on HIV/AIDS transmission than their non- hearing counterparts in this study. It can be concluded that adolescents who are deaf in the Bechem and Ashanti schools for the deaf have insufficient knowledge about the modes of transmission of HIV/AIDS.

5.2.2 Discussion of research question 2: What do adolescents who are deaf know about diagnosis and symptoms of HIV/AIDS?

5.2.2.1 Diagnosis of HIV/AIDS

The analysis of questionnaire data on what adolescents know about diagnosis and symptoms of HIV/AIDS revealed that a greater number 74 (67.3%) of the students knew that there are tests available for diagnosing HIV/AIDS. This implies that students are likely to find out their HIV status through such tests. They may also inform/advice/encourage friends and family members to know their HIV/AIDS status through tests. When people go to get tested for HIV/AIDS, they are often given some

education about modes of HIV/AIDS transmission, prevention strategies and how to manage the condition in case of infection. These useful facts are shared by the counsellor in accredited hospitals during the pre and post-test counselling sessions with the client.

When adolescents are well informed about transmission and prevention of HIV/AIDS they will be better prepared to live in this world of HIV/AIDS without becoming infected. Even where they are already infected, they can manage the condition in order to live longer. This will help reduce HIV/AIDS related deaths particularly among adolescents. Knowledge about availability of HIV/AIDS tests may help adolescents who may want to enter into sexual relations to request or insist that their potential partners test for HIV/AIDS before they can have sex. This step will enable the adolescent to reduce their risk of exposure to the AIDS virus. This finding is contrary to that of Shweta, Mundkur, and Chaitanya (2011) which found out that majority (57%) of the adolescent students in the Udupi district of Karnataka-India, were not aware that tests are available to detect HIV in an infected person.

Secondly, it is worth mentioning that majority (67.3%) of the students were of the opinion that HIV/AIDS can be diagnosed by testing blood of individuals. This good knowledge may help the deaf students know what is expected when going for HIV/AIDS test in order that they are not deceived by people who may want to take advantage over their inability to speak. This knowledge may also help particularly those in relationship to verify if their sexual partners really did the test. However, when students who are deaf lack this information they could easily be deceived with urine/stool test results by their partners who actually never tested for HIV/AIDS. This action may increase their risk. This finding supports that of Bharati and Bharati

(2014) in their study among students in Jajarkot district of Nepal that a greater number of the respondents knew that HIV/AIDS is diagnosed by testing blood.

It is however worth noting that a greater number of the students believed that HIV/AIDS cannot be diagnosed in all accredited health facilities. This shows that deaf adolescents are ignorant of where to get tested for HIV/AIDS. Accredited health facilities are in at least every district. Those who lack this knowledge may think that one must travel to the nation's capital or other far places before they can test for HIV/AIDS. Such thoughts may cause them not to take the step of finding out their HIV/AIDS status. They might also accept excuses from their sexual partners that such facilities are inaccessible.

On the other hand, for the few adolescents who are of the view that HIV/AIDS can be diagnosed in all accredited health facilities, they and their sexual partners including family members may be motivated by the closeness to such facilities to patronise the service. This may help provide accurate statistics regarding HIV prevalence among adolescents.

The results of the study revealed that, most of the students were not aware that an individual may test negative to HIV although he/she is really infected. This implies that students who are deaf are likely to accept the first HIV test results that are negative as the true status of the person. This can be misleading and dangerous to adolescents who are deaf in the sense that, not all negative results indicate that the person is free from the AIDS virus. Some people may get tested during the window period when the body has not yet produced enough antibodies to the virus that can be detected by any test; yet the person can pass on the virus to others. This ignorance may lead the adolescent students to involve in risky behaviour with infected person

who produce results indicating that they are negative. The consequence is that such adolescents could easily become infected thereby adding to the prevalence among the deaf. On the other hand, if deaf adolescents are of the opinion that people may test negative to HIV even when they are infected, the deaf can always ask for confirmatory test results from their sex partners before engaging in sex with them. They may also go for confirmatory test before accepting to engage in sex. These actions will help reduce the spread of HIV/AIDS among the deaf.

5.2.2.2 Signs and symptoms of HIV/AIDS

The findings of the study indicated that majority (58%) of the students knew that persons infected with HIV/AIDS may experience persistent cough for one month or more. This suggests that students who are deaf can recognize persons living with HIV/AIDS who exhibit this symptom. This will help the student take precautions in order not to contract the tuberculosis once it is airborne. On the contrary, if the adolescent lacks this knowledge he/she may engage in some behaviours such as sharing drinking cups or sleeping on the same bed with the person and this can cause him/her to contract the bacterial causing the tuberculosis (TB). The effect is that the prevalence of TB among adolescents may rise. This has cost implication for government once the cost of treating TB remains free. Contrary to this study, Shweta et al, (2011) established in their study that majority of the students did not know the symptoms of HIV/AIDS as more than half of the students did not know that a person with AIDS may experience tuberculosis. The difference shows that probably students in Bechem and Ashanti schools for the deaf take the HIV/AIDS Alert School programme which is on-going in all public basic schools serious.

Another revelation from the study was that most (68%) of the students were of the view that persons infected with HIV/AIDS may experience weight loss up to 10% of their body weight. This demonstrates good knowledge of the symptoms of AIDS. The implication is that the adolescent will be better able to distinguish between weight loss due to other conditions and weight loss resulting from HIV/AIDS. This will prevent students who are deaf from referring to all people who reduce in weight as having HIV/AIDS. They will also be able to educate their peers and others that not every loss in weight is as a result of HIV/AIDS. If adolescents lack this information, they could wrongly accuse people of having AIDS which can bring about social disputes which may lead to conflict. This study shares similar opinion with Rana (2014) when she conducted a research on adolescents' knowledge about HIV/AIDS in Nepal established that the respondents had knowledge on the signs and symptoms of HIV/AIDS in that half of them rightly identified weight loss up to 10% body weight as a symptom of HIV/AIDS,

On the other hand, less than half (43.7%) of the students indicated that persistent fever is a symptom of HIV/AIDS. This is worrisome; as it suggests that students lack knowledge about the signs and symptoms of HIV/AIDS as such they may not be able to identify early symptoms of HIV/AIDS in their own bodies and or that of others. If this happens students may continue to engage in actions that cause them to spread the virus (if they are already infected) or lead them to become infected by others. Students may also not be able to help persons infected with HIV in their communities to go seek early treatment. People who are unaware that persistent fever is a sign of HIV/AIDS may continue seeking treatment for other diseases such as malaria which may not be the actual cause of their fever. This is likely to delay early treatment and worsen their condition. However, if a deaf adolescent have knowledge that persistent

fever that lasts for a month is a symptom of HIV/AIDS they and their relations are likely to seek early treatment if they are infected. This finding is not in tandem with that of Rana (2014) which revealed that majority of the adolescent respondents were aware that persons who have AIDS may experience persistent fever for more than one month.

The study further revealed that as much as 75 (68.2%) of the students who are deaf disagreed with the statement that a person infected with HIV may appear healthy without symptoms. Such students stand a higher chance of becoming infected with the AIDS virus because although symptoms may not be present, the virus is still transmittable. Students' perception that only persons exhibiting the signs and symptoms of HIV/AIDS can transmit the virus may lead them to be less careful in their interactions with seemingly healthy-looking persons. They may continue to share personal items such as blades, shaving sticks, injection needles and the like with their seemingly healthy relatives and loved ones who though not currently exhibiting signs of the virus were infected. The deaf may also involve in risky behaviour such as unprotected sex, blood covenant and the like with such individuals. The resultant effect is that adolescents may contract the virus from such healthy-looking persons leading to an increase in HIV/AIDS and other STI prevalence among deaf students. This study affirms the results of Touko et al (2010) in their study that some of the respondents are deaf hold the opinion that healthy-looking people cannot transmit the AIDS virus. In another scenario, Shweta et al, (2011) found from their study that adolescents' knowledge of the symptoms of AIDS is inadequate as less than half of the students were aware that a person infected with HIV may look and feel healthy.

On the other hand, the minority 35 (31.8%) of students who are aware that some healthy-looking people may be infected with HIV/AIDS look beyond the physical appearance of people when considering sexual relations or sharing sharp and piercing instruments.

5.2.3. Discussion of research question 3: How knowledgeable are adolescent students who are deaf regarding the treatment/management of HIV/AIDS?

Analysis of students questionnaire data on how knowledgeable adolescent who are deaf are regarding the treatment/management of HIV/AIDS revealed that more than two-thirds (69.1%) of the respondents were of the view that having unprotected sex with a virgin cannot cure HIV/AIDS. This is indicative that students with deafness are aware that HIV/AIDS cannot be cured by having unprotected sex with a virgin. Adolescent students who may be infected with HIV may not be poised to engage in unprotected sex with virgins as a means to cure the disease. They may also educate others who are not informed about this issue. This is likely to help reduce rape and defilement cases that may happen in search for a cure for AIDS that never exist. After all there is nothing in the virginity to cure HIV/AIDS. A reduction in rape and defilement cases that involve adolescents particularly the deaf will help reduce HIV/AIDS prevalence rate not only among them, but also across age groups.

On the contrary, the few adolescents who are not well informed on this issue may stand the risk of increasing their vulnerability to HIV/AIDS and other STIs infection that may result from rapists seeking cure for HIV/AIDS from them. This study disagrees with Bogart et al (2011) as they reported from their research on HIV/AIDS misconceptions and condom use among black South Africans that a significant

proportion of the participants thought that HIV can be cured by sleeping (having sex with a virgin) with a virgin.

Secondly, majority (60.9%) of the students indicated that traditional practitioners cannot cure HIV/AIDS. This finding suggests that students are well informed regarding the cure of HIV/AIDS. This implies that the students will not make attribution errors regarding the cure of HIV/AIDS. Students who may be infected with HIV/AIDS will not patronise the services of traditional healers in search for cure. The students will be in a better position to advice friends and relatives infected with HIV/AIDS to guard against these traditional healers who often promise cure to all illnesses such as HIV/AIDS although it is a world known truth that HIV/AIDS has no cure yet. Adolescents' knowledge about the cure of HIV/AIDS may also help save families with people living with HIV/AIDS the burden of coughing large sums of money for these charlatans in the name of seeking cure for their ailment.

On the other hand, for the students who are not aware that traditional practitioners cannot cure HIV/AIDS, they and their loved ones may spend so much time and money seeking for HIV/AIDS cure where it does not exist. This could contribute to delay in receiving ART that could better manage the condition. As a result, the condition may progress faster to the terminal state where ART may not be useful anymore. This study is in agreement with Appiah-Agyekum and Suapim (2013) which found that more than half of the respondents from West African Senior High School in Accra, Ghana believed that herbal or traditional medicine as well as spiritual treatment could cure HIV/AIDS. Zuma et al (2017) researched into Traditional Practitioners Management of HIV/AIDS and found that all the respondents who were Traditional Health Practitioners admitted that, they lack the

capacity to treat/cure HIV/AIDS. Similarly, Appelbaum et al. (2015) undertook a study among 11 Traditional Health Practitioners in KwaZulu-Natal and established that none of the respondents indicated that they could cure HIV/AIDS.

Further findings in this sub section revealed that more than half 60.9% (n= 67) of the students believed that there is medical cure for HIV/AIDS. This finding confirms that of Appiah-Agyekum and Suapim (2013) which revealed that half of their adolescent respondents erroneously indicated that there is a scientifically proven cure for HIV/AIDS.

What is the implication when students have the wrong notion that AIDS has medical cure? Students may develop attribution error that could cause them not to take serious precautions to protect themselves against HIV infection. Thus, attribution error may not motivate students to use condom during sex or keep to only uninfected partners. Such misconceptions that make students erroneously liken HIV/AIDS to malaria and other diseases that can be cured often lead to the spread of HIV/AIDS among adolescents.

On the other hand, this study does not agree with Ocran and Danso (2009) who found that adolescents in Ellembele District of Ghana knew that HIV/AIDS can only be treated but cannot be cured. In the same vein, Touko et al (2010) found that only few of the adolescent respondents in their study indicated that AIDS is curable. When adolescents are aware that HIV/AIDS cannot be cured medically they will be more cautious and adapt behaviours that will not expose them to a disease that will live with them for life. Such students will have positive attitudes toward the disease due to the wrong attribution error regarding its cure.

Further findings indicated that as high as 68.2% of the respondents opined that HIV/AIDS can be cured through prayers and fasting. This implies that adolescents who may be infected or have relatives living with HIV/AIDS are likely to rely on pastors, prayers and fasting in a bid to receive cure for their illness. When HIV infected persons involve in fasting in order to cure their ailment they may be denying their body the nutrients required to build a stronger immune system. This may result in the immune system deteriorating faster, leading to early demise of the victim. Using fasting and prayers as means to curing HIV/AIDS may also delay treatment for opportunistic infections which can quicken the progression of HIV infection to AIDS. On the contrary, for the few students who are of the view that fasting and prayers cannot cure AIDS, they and their relatives who may be infected may report early to hospital for early treatment for opportunistic infections and also for ART to strengthen their immune system so they may live longer. This study is not in tandem with Appiah-Agyekum and Suapim 2013 report that few of their respondents believed strongly that HIV/AIDS could be cured through anointed men of God.

Similarly, Azunurene (2014) established in his study on Adolescents' sources of information and knowledge levels on HIV/AIDS in the Eastern region of Ghana that majority of the adolescents believed that men of God could not cure HIV/AIDS.

5.2.4 Discussion of research question 4: What is the knowledge of adolescents who are deaf about prevention of transmission of HIV/AIDS?

The results that emerged from this study indicated that more than two-thirds (69.1%) of the respondents opined that using condom consistently and correctly during sex may prevent an individual from getting infected with HIV. This suggests that adolescents have good knowledge of preventing HIV/AIDS transmission through condom use. The findings in this study is consistent with Agyemang, Buor and Tagoe-Darko (2012) which established that adolescents in Ghana have knowledge on HIV prevention in that more than half of their respondents identified condoms use as effective means of preventing HIV/AIDS transmission. According to the attribution theory, when adolescents who are deaf have accurate and relevant information about HIV/AIDS, they may not develop attribution error. Instead, they will attribute correct prevention strategies regarding the disease. As a result, their sexual behaviour will be influenced positively. Hence the sexually active adolescents will more likely adopt safer and healthier lifestyles such as using condom correctly or encouraging their partners to do so during every sexual act. In this way they may avoid contracting HIV/AIDS and other STIs as well as prevent unplanned pregnancies. Such low-risk behaviour has the potential of reducing HIV prevalence among the youth in general and the deaf.

On the contrary, this study does not agree with Rahaman, Shahidullah and Kabir, (2009) in their study of HIV/AIDS knowledge among adolescents in Bangladeshi. The researchers found that adolescents do not have sufficient knowledge about prevention of HIV/AIDS transmission. In a similar vein, Mprah (2013) in a related study in Ghana established that the respondents in his study could not identify preventive methods of HIV transmission and that most were not aware that using condom during

sex can help prevent transmission of HIV/AIDS and STIs infection. In this study, the few adolescents who demonstrated ignorance about the benefits of using condom may develop high attribution error. This may lead them to involve themselves in high-risk sexual acts (sex without condom). When that happens, HIV/AIDS and other STIs are likely to spread among adolescents like wildfire. Also, teenage pregnancy with its attendant problems may affect the education and health of such adolescents.

The findings also revealed that a greater number (60.9%) of the students were of the view that HIV/AIDS infection may be prevented by avoiding sharing sharp and piercing objects. This revelation is heart-warming in that students may be careful not to use the same sharp/piercing objects with other people especially when they do not know the HIV status of the person. This means that adolescents may secure their own instruments for barbering, manicure, pedicure and tattooing. When this happen the students who are deaf will be reducing their vulnerability to infection with the AIDS virus. On the contrary, when adolescents lack this important information they may expose themselves to the virus through sharing needles, blades and shaving blades with others who may be infected with HIV/AIDS. This study supports that by Agyemang, Buor and Tagoe-Darko (2012) as they found in their study among adolescents in Ghana that the knowledge of respondents on the prevention of HIV was good in that majority indicated that avoiding sharing sharp items with another person may prevent HIV infection. Similarly, Zunurene (2014) in his study on Adolescents' sources of information and knowledge levels on HIV/AIDS reported that a greater number of the respondents were aware that HIV transmission could be prevented by not sharing sharp and piercing objects.

Further findings indicated that more than half (56.4%) of the respondents were of the opinion that abstinence from oral and anal sex cannot reduce a person's risk of getting HIV infection. This implies that students are not aware that HIV/AIDS can be passed on from one person to another through oral and anal sex. Students may resort to these forms of sexual acts with the belief that they will not be exposed to HIV/AIDS. Oral and anal sex has the potential of exposing adolescents to HIV infection although they may not need to worry about teenage or unprepared pregnancies. The mucus lining of the anus is very fragile and can easily be bruised as such HIV transmission is easier particularly if condom is not used and the active partners is infected. On the contrary, the few students who have knowledge that avoiding anal sex can prevent HIV infection they may not engage in it at all or they may use condom in the process. This may help reduce their risk of getting the AIDS virus. The finding in this study disagree with Agyemang, Buor and Tagoe-Darko (2012) as they established in their study that a greater number of the participants knew that abstinence from sex is a means of preventing HIV infection. In a similar vein, Ruma (2009) found that majority of the respondents were of the view that abstinence from sex could help avoid HIV infecting.

Again, further results revealed that majority (51.8%) of the respondents indicated that having sex with only one faithful partner who is not infected with HIV/AIDS is not a means of preventing HIV infections. This finding demonstrates adolescent students' poor knowledge of HIV/AIDS prevention strategies. Students are likely to engage in sexual relations with multiple partners if they are unaware that an individual's risk for HIV infection increases as the number of sexual partners increase. This is because, the likelihood that one of the several sexual partners is exposed to the virus already is higher compared to having only one sexual partner. However, the adolescents who are

of the opinion that sex with only one faithful and uninfected partner can reduce their risk of being exposed to the AIDS virus, may make efforts to stick to one sexual partner who is faithful and uninfected thereby reducing their risk of exposure. This study agrees with Gabriel et al (2016) in a study on knowledge of HIV/AIDS, Attitude towards sexual risk behaviour and perceived behavioural control among college students in Botswana. The study revealed that most students are of the opinion that having sex with only one faithful, uninfected partner may reduce an individual's risk of HIV infection. Similarly, Zunurene (2014) in his study on Adolescents' sources of information and knowledge levels on HIV/AIDS in two communities in the eastern region of Ghana established that majority of the respondents in his study were aware that HIV transmission could be avoided by being faithful to only one sexual partner

5.2.5 Discussion of research question 5: Which types of sexual behaviour do deaf adolescents exhibit in Bechem and Ashanti schools for the deaf?

It emerged from the analysis of students questionnaire data on the sexual behaviours of adolescents who are deaf that that a greater number (72.7%) and (70%) of the respondents indicated that they do not engage in oral or anal sex respectively. The behaviour of the students reflects their understanding that HIV/AIDS can be transmitted through vagina and seminal fluids. This supports the argument by Weiner 1935 that when students attribute the cause of HIV/AIDS to factors such as contact with infected seminal and vaginal fluids, they will more likely avoid behaviours that will bring them into contact with such factors. Thus, adolescents who are deaf do not engage in oral and anal sex because they are aware that such acts could expose them to the AIDS virus. This behaviour may lead to a reduction in the number of HIV infections resulting from anal sex. This therefore implies that if efforts are made to

equip adolescents with relevant information regarding the modes of transmission and prevention of HIV/AIDS infection, their sexual behaviour could improve positively.

It is possible that students who reported having involved themselves in such high risk behaviours are those who do not attribute HIV infection to contact with infected vaginal and seminal fluids. If such students do not use condom during sex, they stand the risk of being exposed to HIV/AIDS. It is possible for some people to think that anal sex is safer especially that one may not need to worry about pregnancy. However, the risk for STIs infection including HIV/AIDS may be higher.

The findings on respondents' sexual behaviour revealed that two-thirds (66.4%) of the students who are deaf are sexually active. This is notwithstanding their knowledge that seminal and vagina fluids constitute medium through which HIV spreads from one person to another. This study shares the same view with Yaw (2011) who reported from his study of hearing and non-hearing adolescents in the country that majority of the students reported having had sexual intercourse in their life time. In a similar vein, Issaka (2015) revealed that all the respondents who are hearing impaired in her study had had sex. One would expect that adolescents' knowledge of HIV/AIDS transmission should influence their sexual behaviour positively as suggested in the attribution theory, but that was not the case in this study regarding adolescents' sexual experience. This is an indication that knowledge alone is not sufficient prerequisite for positive sexual behaviour among adolescents. This is worrisome as it indicates that adolescents who are deaf are a high-risk group regarding HIV/AIDS infection particularly if they do not use condom during their sexual acts. The situation implies that for any intervention to work effectively it must look beyond mere provision of knowledge on modes of transmission of HIV/AIDS.

On the other hand, this study does not agree with Rusinga (2012) which found from his study of adolescents who are deaf in Zimbabwe that, less than half (40%) of the respondents had had experience of sex. It is however refreshing to note that a few of the students have never had sex. This is an indication that not all adolescents engage in sex. The behaviour of these few is a good sign that HIV/AIDS prevalence among adolescents can reduce. The reason for the difference with Rusinga's finding could be attributed to cultural rules that do not support adolescent engagement in sex before marriage. Again, maybe Zimbabwean adolescents who are deaf might be receiving better sex education in their schools than their counterparts in Ghanaian schools for the deaf.

Again, a greater number (54.5%) of the respondents who reported having had sex before, indicated that they have/have had sex with more than one regular sexual partner. This revelation is disturbing and confirms respondents' earlier opinion that having sex with only one faithful, uninfected partner is not a means of preventing HIV infection. The results of this study is consistent with the finding of Touko et al (2010) who found among the sexually active interviewees that more than half of both the males the females admitted they were into multiple concurrent sexual relationships. Similarly, Yaw (2011) indicated that more than half of the hearing and non-hearing students reported they had more than one sexual partner since they became sexually active. In the same vein, Issaka (2015) indicated that 52.3% of the adolescents with hearing impairment had sex with more than one partner. The finding in this study buttresses the attribution theory's claim that when adolescents lack the relevant information about disease prevention, they tend to engage in risky lifestyles such as sex with multiple partners. This suggests that the deaf student's risk in relation to sexually related infections is even higher particularly if their partners are

not also faithful. Having sex with more than one regular partner is a high-risk behaviour that has the tendency of increasing HIV/AIDS and STI prevalence among the deaf. However, the minority who keep to only one regular sexual partner chose the step in the right direction as that may result in a reduction of their risk levels.

Further findings that was even more disturbing was the revelation that less than half (46.6%) of those who said they ever had sex always used condom. When adolescents who are sexually active fail to protect themselves against STIs and yet have two or more sexual partners the result may be a rise in HIV prevalence among them. Unprotected sexual intercourse is said to be the major route through which HIV spreads like wildfire. However, for adolescents who use condom during every sexual act, their risk of exposure to HIV/AIDS and other STIs could be minimised. The finding in this study agrees with Sangowawa (2009) which revealed that only 18.2% of the deaf students as against 67.6% of the hearing students in his study in the Oyo state, Nigeria protected themselves against HIV/AIDS during sex. Similarly, Gabriel et al (2016) found that most of the hearing respondents they studied in Botswana reported ever having sex, indicated they used condom during sex. This is an indication that condom use is common among hearing students than among students who are deaf. Contrary to this study, Touko et al (2010) discovered from their study that, majority (85%) of the sexually active respondents who were deaf reported using condom during sexual acts. The difference in condom use among adolescents who are deaf could be that HIV/AIDS prevention programmes for students who are deaf in Cameroun employs more appropriate deaf-friendly strategies such as sign language as against that in Ghana where spoken language is often used. In such situations, students who are in Cameroun may have better knowledge of HIV prevention than their colleagues in Ghana and this may explain their positive sex conduct.

5.3 Discussion of Hypotheses

The *t*-test with a 0.05 level of significance was used to test all the hypotheses. In each of the four instances, the critical value was greater than the calculated value of *t*-test, as such we failed to reject the null hypotheses.

5.3.1 Hypothesis 1

The focus of this hypothesis was to find out if there was difference between male and female adolescents' knowledge on the basic facts of HIV/AIDS. An independent sample *t*-test was performed to determine if gender difference in mean scores on knowledge of basic facts of HIV/AIDS exist. The results indicated that there is no statistically significant difference between male and female adolescents' knowledge of HIV AIDS in Bechem and Ashanti Schools for the Deaf. This revelation is expected in that both male and female students are expected to participate in school-base activities regarding HIV/AIDS equally. This study is in tandem with Yaw (2011) who found among his hearing and hearing adolescents that no significant difference exist regarding male and female knowledge of HIV/AIDS ($t=1.745$, $df=281$, $p=.531$). However, Othman (2014) discovered from his study that adolescent male students had higher level of knowledge about HIV/AIDS than their female counterparts.

5.3.2 Hypothesis 2

Hypothesis 2 sought to determine the difference in knowledge of basic facts between adolescents in Bechem and Ashanti schools for the deaf. The results produced a *t*-test value which was lower than the critical value of 0.05 meaning that no significant difference exist between knowledge of adolescents in Bechem and Ashanti school for the deaf. This could be true because both schools involve the students in the HIV/AIDS Alert School program which seeks to equip students with basic facts of

HIV/AIDS and appropriate skills to stay uninfected with the AIDS virus including other STIs. This finding does not support Yaw (2011) who reported from his study that significant difference existed between school regarding knowledge on how to prevent HIV infection ($t=3.489$, $df=207.296$, $p=001$). Thus, Jamasi School for the Deaf students' knowledge were higher than that of Nsutaman students.

5.3.3 Hypothesis 3

The hypothesis 2 focused on finding out if there was any difference between the sexual behaviours of male and female students of Bechem and Ashanti school for the deaf. The finding indicated no statistically significant difference between sexual behaviour of male and female adolescents in Bechem and Ashanti schools for the deaf. This is not surprising because, adolescents of similar characteristics will often conduct themselves in similar manner. This study agrees with the findings of Touko et al (2010) that there is no gender difference regarding adolescent engagement in multiple concurrent sexual relationships. They however found significant differences exist between male and female hearing-impaired adolescents regarding non-condom use. Thus their study revealed that more females than males do not use condom ($\chi^2 = 7.9$, $p = 0.007$).

5.3.4 Hypothesis 4

The aim of hypothesis 4 was to find the difference between the sexual behaviour of students in the Bechem and Ashanti school for the deaf. The study did not find statistically significant difference in sexual behaviour between adolescents in Bechem and Ashanti schools for the deaf. This finding does not agree with Rydholm (2009) who found that there was statistically significant difference regarding the occurrence of sexual relationships between adolescents in the private school and those in the

public school. Thus the researcher established that there were more sexual relationships occurring amongst students at the private school than in the public school. They however found no difference between the schools concerning the age of first sexual intercourse. $X^2 = 0.2032$, $df = 1$, $p\text{-value} = 0.6522$.

5.3.5 Hypothesis 5

The correlation analyses were used to examine the relationship between sex-related HIV/AIDS knowledge and sexual behaviour of students who are deaf in the schools for the deaf in the Ahafo and Ashanti regions of Ghana. The statistics indicated that knowledge and sexual behaviour were significantly correlated. This means that the higher students knowledge on HIV/AIDS, the lower their risky sexual behaviour. Therefore measures put in place to improve knowledge of students should be maintained in order that students do not drift back. Thus the HIV/AIDS Alert School Programme that is on-going in the schools for the deaf should be continued. This study is in tandem with Issaka 2015 that no statistical significant relationship exists between deaf students' knowledge of HIV/AIDSs and their engagement in Risky Sexual behaviour. Issaka investigated the knowledge and sexual behaviours of Hearing Impaired students in selected schools for the deaf in Ghana. In a similar vein, Moura et al (2013) did not establish any significant association between scientific knowledge on HIV/AIDS and sexual behaviour of the students. Specifically the report showed no correlation between knowledge on HIV/AIDS and frequency of condom use by students neither was there relationship between HIV/AIDS knowledge and number of sexual partners each student had.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.0 Overview

This section of the study provides the summary, conclusion and recommendation

6.1 Summary of Findings

The study was conducted in the Ahafo and Ashanti regions of Ghana. The study sought to investigate the HIV/AIDS knowledge and sexual behaviour of adolescents in schools for the deaf in these two regions of Ghana. This study employed the descriptive survey design using quantitative approach. The population for the study included all adolescents in the Junior High School (JHS) level in the schools. A sample size of one hundred and ten (N=110) was selected through the proportional sampling technique. Self-constructed questionnaire HIV/AIDS Knowledge and sexual behaviour was the main tool used to gather data for the study. The SPSS version 20 was used for data analysis. Data on research questions were analysed descriptively into frequencies and percentages while the t-test with a 0.05 level of significance was used to test all the hypotheses.

6.1.1 Adolescents' knowledge about modes of HIV/AIDS transmission

The analysis of questionnaire data on the modes of transmission of HIV/AIDS revealed that majority of the adolescent students were aware that HIV/AIDS can be transmitted through; vagina/seminal fluid, sex without condom, transfusion with infected blood, and sharing of sharp and piercing objects. Most of the adolescent students however did not know that HIV infected mothers can pass on the AIDS virus to their babies through delivery and breastfeeding. Also, a greater number of the

respondents had misconceptions that HIV could be transmitted through mosquito bites and witchcraft.

6.1.2 Adolescents' knowledge on diagnosis /symptoms of HIV/AIDS

It emerged from the analysis of questionnaire data on diagnosis /symptoms of HIV/AIDS that:

A greater number of the students had the wrong perception that HIV/AIDS can be diagnosed by testing urine/stool and vagina/seminal fluids; were ignorant that tests for HIV could be done in all accredited health facilities and that persons infected with HIV may test negative to the virus.

Respondents only knew that there are tests for diagnosing HIV/AIDS and that blood could be tested to detect the presence of HIV in a person.

Adolescents could identify only 3(weight loss, persistent cough, and persistent diarrhoea) out of the seven symptoms of HIV/AIDS listed. Respondents were not aware that fatigue, fever, and skin rashes are symptoms of HIV/AIDS neither were they aware that individuals living with HIV/AIDS may appear healthy without symptoms.

6.1.3 Adolescents' knowledge on how HIV/AIDS can be treated/managed

Analysis of questionnaire data on treatment/management of HIV/AIDS revealed the following:

Most students who are deaf had misconceptions that HIV/AIDS could be cured medically and through fasting and prayers. Students did not know that HIV/AIDS could be managed through regular physical exercise and intake of proper nutrition.

Most of the students correctly indicated that persons infected with HIV/AIDS cannot get cure through unprotected sex with virgin and from traditional practitioners.

6.1.4 Adolescents' knowledge on prevention of HIV/AIDS

It was established from analysis of questionnaire data on HIV/AIDS prevention that majority of the adolescent who are deaf were ignorant that HIV transmission could be prevented by avoiding; vaginal delivery, oral/anal sex as well as sex with multiple partners.

Adolescents were however aware that consistent use of condom, not sharing sharp objects and avoiding transfusion with infected blood could prevent HIV infection.

6.1.5 Adolescents' Sexual Behaviour

The analysis of questionnaire data on students' sexual behaviour indicated that:

Although oral and anal sex seem not to be common among the students with deafness, a greater number of them indicated they were sexually active. Secondly, less than half of the sexually active reported ever using condom during sexual acts. Also, majority of the adolescent students who ever had sex reported having had sex with two or more regular sex partners.

6.2 Conclusion

The study concluded that the HIV/AIDS knowledge and sexual behaviour of adolescents in schools for the deaf in the Ahafo and Ashanti regions of Ghana is not the best. The reasons are that:

1. Students' knowledge on how HIV/AIDS is transmitted was insufficient; this is because students rightly answered only four out of the eight questionnaire items regarding modes of transmission of HIV/AIDS.
2. The students who are deaf demonstrated limited knowledge about diagnosis/signs and symptoms of HIV/AIDS.
3. Respondents had poor knowledge about the treatment of HIV/AIDS as well as how HIV/AIDS may be managed.
4. Adolescents were less informed about HIV/AIDS prevention strategies as they could provide appropriate responses to only 3 out of the 7 questionnaire items provided.
5. Adolescents in the schools for the deaf in Ahafo and Ashanti regions engage in sexual conducts that pose risk to HIV/AIDS infection.
6. Based on the above observation, it can be concluded also that the students' engagement in risky sexual behaviour could have stemmed from their inadequate knowledge on the basic facts of HIV/AIDS.

Concerning the hypotheses;

7. There is no statistically significant difference in knowledge about basic facts of HIV/AIDS between male and female students and between Bechem and Ashanti schools for the deaf.

8. Similarly, no significant difference was found regarding sexual behaviour between male and female students; and adolescents in Bechem and Ashanti Schools for the deaf.
9. Significant correlation existed between adolescents HIV/AIDS knowledge and their sexual behaviour.

6.3 Recommendation

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

1. The head teachers of Bechem and Ashanti schools for the deaf should collaborate with Ghana Education Service, Ghana Health Service in their districts and regions to provide education to students who are deaf on the correct modes of transmission of HIV.
2. The heads of the two schools should liaise with their District and Regional Health Directorates and the Ghana Health Service through the Ghana Education Service in their respective districts to sensitise students on how HIV/AIDS is diagnosed and the correct symptoms of HIV/AIDS.
3. The two schools should liaise with the District and Regional Education directorates to collaborate with District and Regional Health Directorates to organise programmes that will create students awareness on how people infected with HIV/AIDS can receive treatment and manage their condition.
4. The heads of Bechem and Ashanti schools for the deaf should work with the Ghana Education Service, Ghana Health Service, Ghana AIDS Commission and Non-Governmental Organisations interested in HIV/AIDS issues to develop programmes that use deaf-friendly approaches in disseminating information on HIV/AIDS prevention strategies to students who are deaf.

5. The authorities in Bechem and Ashanti schools for the deaf should work with their respective District and Regional Health Directorates and NGOs interested in HIV/AIDS issues to sensitise students on safer sex practices and institute counselling measures to help reduce adolescents' high –risk sexual conduct.
6. The heads of Bechem and Ashanti schools for the deaf should collaborate with the Special Education division of the GES to organise workshops for their teachers on strategies that can improve students' knowledge on HIV/AIDS as well as help students translate their knowledge of HIV/AIDS to appropriate sexual conduct.
7. The heads of Bechem and Ashanti schools for the deaf should institute counselling measures to help reduce adolescents' engagement in high-risk sexual behaviour so as to reduce their risk for HIV infection.
8. Future researchers should consider the strategies used in providing information about HIV/AIDS to students who are deaf in the special schools in Ghana as well as the sources of HIV/AIDS information to students who are deaf.

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APPENDICES

APPENDIX A

QUESTIONNAIRE FOR STUDENTS

UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF SPECIAL EDUCATION

Questionnaire for JHS Students in schools for the Deaf in the Brong-Ahafo and Ashanti Regions of Ghana on HIV/AIDS knowledge and sexual behaviour.

This questionnaire seeks your opinion on HIV/AIDS and sexual behaviour. The questionnaire is divided into two sections, section A & B. Section A comprises the bio data of respondents and section B constitutes the main body of the questionnaire. Please answer the questionnaire as honestly as possible as far as knowledge in sexual behaviour is concerned. There is no wrong or right answer. Please, your confidentiality is assured as there is no column for your name to be indicated.

Section A

Please fill in or check the following:

1. School.....
2. Sex: male female
3. Age: 13-16years 17-20years 21-24years

Section B

In filling this questionnaire read every item first. In each item, indicate your level of agreement, disagreement or otherwise by ticking on the appropriate box such as below.

Research Question 1. Deaf Adolescents' knowledge of the modes of transmission of HIV/AIDS.

To what extent do you agree with the following as means of contracting HIV/AIDS? Please tick (✓) as appropriate.

S/N	Statement	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
4	HIV can be transmitted through mosquito bites.					
5	Witches and wizards can infest one with HIV/AIDS.					
6	Sharing needles and blades with persons infected with HIV can result in HIV transmission.					
7	Engaging in sex with an HIV infected person without using condom may result in HIV transmission.					
8	HIV can be transmitted through vaginal and seminal fluids					
9	HIV infected mother may transmit the virus to her baby during pregnancy and vaginal delivery					
10	A child may contract HIV through breast feeding from a mother infected with HIV.					
11	HIV can be contracted by receiving blood transfusion from an infected person.					

Research Question 2. Knowledge on diagnoses / Signs and symptoms of HIV/AIDS

To what extent do you agree with the following as means of diagnosing / Symptoms of HIV/AIDS? Please tick (✓) as appropriate.

S/N	Statement	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
12	There are tests available to detect HIV in persons who are infected.					
13	HIV/AIDS can be diagnosed by testing vaginal and seminal fluids.					
14	HIV/AIDS can be diagnosed by testing the blood of individuals					
15	Testing the urine/stool of individuals is a means of diagnosing HIV/AIDS					
16	An individual may test negative to HIV although he/she is actually infected.					
17	HIV/AIDS can be diagnosed in all accredited health facilities.					
Signs and symptoms of HIV/AIDS						
18	Persons infected with HIV/AIDS may experience persistent diarrhoea for a month or more					
19	Persistent and unexplained weakness (fatigue) is another sign/symptom of HIV/AIDS					
20	HIV infected persons may also experience persistent cough for up to one month or more					
21	Persons infected with HIV/AIDS may experience weight loss up to 10% of their body weight.					
22	Persistent fever lasting more than one month is also a symptom of HIV/AIDS					
23	Shingles/ananse (skin rashes) is another symptom of HIV/AIDS					
24	An individual infected with HIV may appear healthy without symptoms					

Research Question 3. Knowledge on treatment/management of HIV/AIDS.

To what extent do you agree with the following as ways of treating/ managing

HIV/AIDS? Please tick (✓) as appropriate.

S/N	Statement	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
25	There is medical cure for HIV/AIDS.					
26	HIV/AIDS can be cured through prayer and fasting.					
27	Traditional practitioners can cure HIV/AIDS.					
28	Having unprotected sex with a virgin can cure HIV/AIDS.					
29	Taking Anti Retro-viral Drugs can help reduce the effect of HIV/AIDS.					
30	Light, regular exercise will keep an HIV infected person's body strong and enable his/her system to work well.					
31	HIV/AIDS can be managed by taking proper nutrition.					

Research Question 4. Knowledge on HIV/AIDS Prevention strategies

To what extent do you agree with the following as constituting ways of preventing HIV/AIDS? Please tick (✓) as appropriate.

S/N	Statement:	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
32	Abstaining from oral, vaginal and anal sex can help an individual prevent HIV infection.					
33	Having sex with only one faithful, uninfected partner can reduce the risk of contracting HIV/AIDS.					
34	An individual who uses condom consistently and correctly during sex may not become infected with HIV.					
35	Persons who avoid sharing piercing instruments such as needles and blades will reduce their risk of being infected with HIV.					
36	If HIV infected mothers avoid delivering through the vagina, their babies may not contract HIV.					
37	Avoiding transfusion of blood from infected persons is another means of preventing HIV infection.					
38	An individual may avoid contracting HIV by washing the genitals immediately after unprotected sex with an HIV infected person.					

Research Question 5. Sexual behaviours of Deaf Adolescents

To what extent do you agree that you exhibit the following sexual behaviours? Please tick (✓) as appropriate.

S/N	Statement	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
39	I have had sex before					
40	I had more than one sexual experience before I turned 15 years.					
41	I have/ have had sex with more than one regular sexual partner in my life time					
42	I have had sex with other people either than my regular partner (s)					
43	I can have many sexual partners once I trust them.					
44	I always use condom when having sex.					
45	Apart from vaginal sex, I do engage/ have ever engaged in anal sex.					
46	Besides vaginal sex, I have/ have had oral sex.					

APPENDIX B**CROMBACH ON KNOW N SEX BEHAVIOUR****Case Processing Summary**

	N	%
Valid	15	100.0
Cases Excluded ^a	0	.0
Total	15	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.777	.796	43

APPENDIX C

RELIABILITY CO-EFFICIENT

TEST 1																																				
4	1	4	4	1	4	5	4	5	1	5	4	1	4	5	4	5	1	5	4	1	4	5	4	5	1	5	4	1	4	5	4	5	1	5	154	
2	1	4	2	1	4	2	4	1	5	1	2	1	4	2	4	1	5	1	2	1	4	2	4	1	5	4	2	1	4	2	4	1	5	1	110	
4	5	1	5	5	1	1	3	4	1	2	5	5	1	1	3	4	1	1	5	5	1	1	3	4	1	4	5	5	1	1	3	4	1	1	119	
4	2	4	4	2	4	1	4	1	5	4	4	2	4	1	4	1	5	4	4	2	4	1	4	1	5	4	4	2	4	1	4	1	5	4	135	
2	4	2	2	2	2	2	2	2	4	3	2	2	2	2	5	2	1	3	2	2	2	2	5	2	1	3	2	2	2	2	5	2	1	3	103	
2	4	4	4	2	4	5	2	2	4	4	2	2	4	3	5	5	1	2	4	2	4	3	5	5	5	2	4	2	4	3	5	5	1	2	143	
2	2	5	2	2	2	2	2	2	2	4	2	4	5	2	2	4	2	2	5	1	2	4	2	4	4	2	4	2	2	4	2	4	2	2	118	
1	2	5	2	2	2	5	1	2	5	5	4	4	5	2	1	2	5	2	4	2	1	5	5	2	5	2	2	2	1	5	1	2	5	2	125	
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4	2	5	4	2	5	2	4	1	2	2	4	2	5	2	4	1	2	2	4	2	5	2	4	1	2	2	4	2	5	2	4	1	2	2	121	
4	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	112	
4	4	5	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	153	
																																				1947

TEST 2																																				
4	1	5	4	1	4	5	4	5	1	5	4	1	4	5	4	5	1	5	4	1	4	5	4	5	1	5	4	1	5	155						
2	1	4	2	1	4	2	4	1	5	1	2	1	4	2	4	1	5	1	2	1	4	2	4	1	5	4	2	1	4	2	4	1	5	1	110	
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2	4	2	2	2	2	2	1	2	5	3	2	2	2	1	5	2	1	3	2	2	2	2	5	2	2	3	2	2	2	2	5	2	1	3	103	
2	4	4	4	2	4	5	2	2	4	4	2	2	4	3	5	5	1	1	4	2	4	3	5	5	5	2	4	2	4	3	5	5	1	2	142	
2	2	5	2	2	2	2	2	2	2	4	2	4	5	2	1	4	2	2	5	1	1	4	2	4	4	1	5	2	2	4	2	5	2	2	119	
1	2	5	2	2	2	5	1	2	4	5	4	4	5	2	1	2	5	2	4	2	1	5	5	2	5	2	2	2	1	5	1	2	5	2	124	
5	1	2	5	1	4	1	2	4	2	2	5	1	4	4	2	4	2	2	5	1	4	1	5	4	2	2	5	1	4	1	2	4	2	2	119	
4	5	4	4	2	2	2	3	4	2	1	4	5	2	2	3	4	2	1	4	5	2	2	4	4	2	2	4	5	2	2	3	4	2	1	128	
4	2	2	5	4	2	5	4	4	5	2	5	2	1	1	4	4	5	2	5	2	2	1	5	4	5	2	5	2	2	1	4	4	5	2	139	
5	5	4	5	5	4	1	4	4	4	4	5	5	4	1	4	4	4	4	5	5	4	1	4	4	4	4	4	4	5	4	1	4	4	4	4	169
4	2	5	4	2	5	2	4	1	2	2	4	2	5	2	4	1	2	2	4	2	5	2	4	1	2	2	5	2	5	2	4	1	2	2	124	
4	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	4	1	2	4	5	2	1	2	112	
5	4	5	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	4	4	5	1	5	4	4	1	155	
																																				1954

APPENDIX D

LETTER OF INTRODUCTION



UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF SPECIAL EDUCATION
P. O. Box 25, Winneba, Ghana
Telephone: 0302600000

February 17, 2018

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Dear Sir/Madam,

LETTER OF INTRODUCTION

I am writing to introduce to you, Mr. Wilson Doku as M. Ed student in Department of Special Education of the University of Education, Winneba with registration number B160150907.

She is currently working on her thesis on the topic: *"MFL: Its Knowledge and actual behaviour of deaf/blindness in schools for the deaf in the Greater Accra and Ashanti Regions of Ghana."*

I would be very grateful if you could give her the needed assistance to enable her to conduct her study from your school. This form is part of the requirements to complete her programme.

Thanking you for your cooperation.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Yekiele Yao E. (PMD)'. The signature is written in a cursive style.

YEKIELE YAO E. (PMD)
AC, HEAD OF DEPARTMENT



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