Scientific Publications

Universal Journal of Social Sciences and Humanities, 2023, 3, 679
www.scipublications.org/journal/index.php/ujssh
DOI: 10.31586/ujssh.2023.679

Article

Adolescent Students' Knowledge of Sexually Transmitted Infections in Eastern Region Schools for the Deaf, Ghana

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Abstract: This study investigated adolescent students" knowledge of sexually transmitted infections (STIs) in eastern region schools for the deaf in Ghana. A descriptive survey design was used for the study. The researchers used HIV- The knowledge Questionnaire to assess the knowledge of respondents on STIs. Stratified sampling and simple random sampling techniques were employed. Proportional representation was used to select a sample of ninety-five (95) adolescent students with deafness from JHS2 and JHS3 between the ages of 13 and 24 years. Data were analyzed descriptively into frequencies and percentages. The results of the study indicated that the students knew of some of the types of STIs such as Gonorrhea, Syphilis, and HIV/AIDS. They, however, had inadequate knowledge of STIs such as Hepatitis B and Chlamydia.

Keywords: Knowledge, Adolescent, Students, STIs, Transmission

How to cite this paper:
Kwasi Kloh, F. W. ., Djan, E. ., Kudzo Mawuena, F., & Acheampong, F. (2023). Adolescent Students' Knowledge of Sexually Transmitted Infections in Eastern Region Schools for the Deaf, Ghana. *Universal Journal of Social Sciences and Humanities*, *3*(1), 11–22. Retrieved from https://www.scipublications.com/journal/index.php/ujssh/article/view/679

Academic Editor:
Zainab Aziz Ahmed Alamiry

Received: February 27, 2023
Accepted: April 26, 2023
Published: April 27, 2023

1. Introduction

STIs are among the most common diseases in the world with yearly incidence only exceeded by malaria and diarrhea. It is estimated that about 499 million new cases of curable STIs across the world, and on average, a little over a million people get infected with STIs every day [40]. STIs could be a co-factor for HIV acquisition and transmission, especially for specific STIs such as syphilis, chancroid, and genital herpes [28].

According to [38] although, 50% of STIs including HIV occur among adolescents aged 15 – 24 years, such adolescents lack knowledge about STIs. This situation needs to be changed to actively involved adolescents in the fight to prevent the spread of STIs. Adequate knowledge of STIs among adolescent students with deafness would help reduce their prevalence rate. The results of this study would inform stakeholders of the level of knowledge of STIs among adolescents with deafness which will influence the adoption and implementation of adolescent health policies in the country. The study would also facilitate the development of strategies by the teachers of the deaf to assist adolescents with deafness to have a better understanding of the basic facts of STIs.

However, individuals with deafness encounter difficulties when accessing information from formal sources such as health professionals and the media. For this reason, adolescent students with deafness often seek information from friends and family members which is usually not authentic [30]. This has dire consequences when it comes to knowledge about issues concerning STIs.

In Ghana, Eastern Region is reported to be among the Regions with a high prevalence rate of STIs among adolescents [20]. The researchers' informal interaction with adolescent

students in the schools for the deaf in the Eastern Region of Ghana reveals that these adolescent students engage in sexual behaviours that may result in acquiring STIs.

The malfunction of the ear isolates adolescent students with deafness from the public due to the communication gap that exists between them and the rest of society. Despite this gap, the educative programmes telecast on television and on the radio by institutions such as Ghana AIDS Commission to educate the youth on the modes of transmission and prevention of STIs (STIS) do not take the adolescents with deafness into consideration as no attempt is made to interpret in Sign Language to their benefit. The communication gap between parents and their wards also denies them the opportunity to discuss matters concerning reproductive health [25].

These adolescents who are future leaders and potential human resources end up as 'school dropouts' due to health complications. Additionally, a good number of adolescents who indulge in early unprotected sex contract STIs which can require lifelong medical care and social support from their individual families and the societies a whole [24]. Despite this threat, a few studies have been done in schools for the deaf regarding this topic [17, 26, 30]. The researchers did not find any study that specifically focused on knowledge of STIs of adolescent students with deafness in the Eastern Region of Ghana. This has prompted the study to fill the gap by investigating Adolescent students' knowledge of STIs in Eastern Region schools for the deaf in Ghana. It is against this background, that this study is deemed necessary to investigate the knowledge of adolescent students with deafness on STIs.

1.1. Types of STIs

STIs are infections which are mainly transmitted from one person to another through intimate contact [13, 39]. The term describes infections caused by more than 30 different bacteria, viruses and parasites which are transmitted through sexual intercourse. The common feature of these infections is their mode of transmission and not their cause, origin, clinical features or consequences [39]. The most common STIs are the bacterial infections: Chlamydia, syphilis, gonorrhea and the viral infections: human papillomavirus (HPV), HIV and hepatitis B. The irony is that, some STIs normally exist devoid of symptoms, especially in women. Different mechanisms for example screening and case-finding are critical for early recognition and management of these asymptomatic infections [34].

The most common types of STIs are the bacterial infections: Chancroid, chlamydia, syphilis, gonorrhea, Mycoplasma Genitalium (which is associated with Pelvic Inflammatory diseases bacterial vaginosis) causes non-gonococcal urethritis in men and Lymphogranuloma Venereum (LGV), the viral infections: human papillomavirus (HPV) which is viral and has about seventy variants, Hepatitis B, HIV, Genital Herpes, Cytomegalovirus, Mononucleosis, and moll scum contagious. Trichomoniasis is a protozoa disease and Candidacies (yeast infection) is a fungal infection [33]. On the basis of types, STIs are further seen as including those that can be cured like syphilis, Chlamydia and gonorrhea as well as incurable but modifiable ones like herpes simplex, human papilloma virus (HPV), HIV and hepatitis B infections [33].

A study conducted by [9], investigated the knowledge of STIs among Malaysian male adolescents. The results showed that 92% of the respondents had heard of at least one of the listed STIs, which included syphilis, gonorrhea, chlamydia, yeast infection, herpes, genital warts, trichomoniasis and HIV/AIDS. The disease that most people knew of was HIV/AIDS (90%) and syphilis (59%). The least known diseases were chlamydia and trichomoniasis, only 13 % of the respondents were aware of those diseases.

[37] found that the majority of college students displayed a lack of knowledge and understanding of sexual health issues, indicated by the low percentage of correctly answered questions in the knowledge of the types of STIs section of their survey. Similarly, [16] in their study examining the individual perception of future success and its relationship to sexual knowledge and attitudes, the research results indicated that Hispanic youth

had higher levels of knowledge on the types of STIs than Caucasian and African-American youth

A study carried out in the United States by [14] showed that despite having received relevant education from school, home, and friends, a high percentage of adolescents were lacking in knowledge regarding various STIs. The adolescents who had been educated by parents, school, other relatives, and friends performed better than those educated by other sources. Nearly all adolescents had good knowledge of HIV/AIDS, but they knew far less about other STIs.

A study based in Northern Thailand by [32] showed that Thai adolescents' knowledge of HIV was high. Among the sample, which consisted of students aged 15-21, 99.5% had heard of HIV. More than 90 % could identify three main routes of contracting the infection. The same study also showed that knowledge of other STIs was lower than the knowledge of HIV, and that some of the students did not know that STIs could cause infertility.

A similar study in Rio de Janeiro by [35] showed that all participants had heard of HIV, but far fewer knew of other STIs such as cancroid, syphilis, and genital herpes. Sixteen percent of the adolescents thought that AIDS was curable, which shows great lack of knowledge in the seriousness of STIs. Many adolescents (90%) stated that they felt that their knowledge on STIs was too low and wanted to know more. Seventy-eight percent wanted to get this information through school.

Another study in Sicily, Italy found that high school adolescents had minimal knowledge about STIs [36]. A review of 15 studies to determine awareness and knowledge of STIs among adolescents revealed that those aged 13 to 20 years showed awareness and knowledge [33]. In general, the studies reported low levels of awareness and knowledge of STIs with the exception of HIV/AIDS, and recommended that attention be paid to infections such as Chlamydia, gonorrhea, and syphilis.

[4] conducted a cross-sectional study with a sample of 295 adolescents in Amasaman Senior Technical High School. The study found that participants had inadequate knowledge of the types of STIs. In a similar study, [5] found students' overall knowledge (60%) of STIs was very low and 78.1% perceive STIs not to be dangerous.

1.2. Mode of transmission of STIs

Sexually transmitted infection continues to be a significant health issue even in developed countries such as the United States and other developing countries. Nearly, nineteen million new cases of STIs are detected yearly in the United States, and more than sixty-five million Americans live with incurable STIs such as human papillomavirus (HPV) and herpes [33].

It is estimated that young people are predisposed to STIs and that those between the ages of fifteen and twenty-four account for about one-half of the new STIs detected yearly, although this age group form part of only one-quarter of the sexually active population with prevalence rates for some subgroups. STIs can be spread through oral, vaginal, or anal sex, or through contact with blood during sexual activity [13]. Although uncommon, transmission can also occur through direct contact with affected body parts, tissue, or body fluids of infected persons [13]. Some STIs such as hepatitis B can also be transmitted through sharing or using unsterilized needles [13]. Vertical transmission, where the mother passes the infection to her child in the uterus or during childbirth is also possible. HIV, hepatitis B, and syphilis are infections that can be transmitted in this way [13].

[23] stated that one of the main modes of transmission of STIs among adolescents is as the result of risky and unprotected sexual behaviors. Engagement in unsafe sexual behavior among this age group is often speculated to stem from a lack of knowledge on the subject of STIs. Negligent condom use among adolescents is an alarming trend that could contribute to the rising rates of STIs.

According to [1], many adolescents are aware that protected sexual intercourse decreases one chance of experiencing an unplanned pregnancy and STIs They are however challenged with society perceiving them as being promiscuous if they take up preventive measures such as condom use and other contraceptive methods.

A study conducted in Tanzania by [21] found the duration between first sex and first marriage to be significantly higher for women who tested positive for HIV. Thus, a year's increase in premarital sex (time between first sex and marriage) increases the odds of contracting STI by 7%, with that of having multiple sexual partnerships doubling with a unit increase in premarital sex. Early sex exposes the individual to a pool of sexual partners before they get married. Early sexual exposure may be as a result of peer pressure, rape or coercion. Among females, most first sexual encounters are with older people who have had multiple sexual partners and may be carriers of the STIs. However, other studies have found rather early marriage contributes to the spread of STIs as most young girls are married early to older, experienced men, who might be carriers of the sexually transmitted infection [11].

A study in the US found adolescents not enrolled in high school were likely to initiate sex early and have unprotected sex, whereas increase in education up to tertiary level protects against vulnerability to STI but higher levels of education puts especially women at higher risk of HIV infection due to the high prevalence in tertiary institutions [6]. A study by [10], found that a strong association between higher levels of education and STI diminished over time.

[27] conducted a survey that used true and false questions to assess students‟ basic knowledge about the mode of transmission of some of the most common STIs. The study found that less than half of the students believed that a person could acquire STIs from intimate body contact with an infected person without having sexual intercourse.

A study conducted by [22, 30], explored the level of knowledge and attitude of persons with physical disabilities toward STIs in the Jachie Community in Ashanti region of Ghana. The results revealed that, most of the participants mentioned that STIs are transmitted mainly through unprotected sex, kissing, blood transfusion, from mother to the child through breastfeeding and cuts from an infected blade or razor. The participants knew STIs such as HIV/AIDS, gonorrhoea, syphilis and candidacies. The use of condoms as a way of preventing STIs was low among the participants. This was as a result of the belief that one gets STI only if he/she has multiple sexual partners. It's imperative to make information about STI more accessible to the disabled community. This will reduce the risk of STIs among persons with disability.

[40], indicated that persons with disabilities are prone to adverse situation that can lead them to increased vulnerability of contracting sexually transmitted disease. This misrepresentation about the sexuality of people who are physically impaired, besides contributing to the discrimination process, increases their vulnerability to situations related to STIs. Regarding the sexuality of individuals with disabilities, they usually face social prejudices and discrimination based on the wrong notion that they are asexual, cannot produce healthy offspring and do not have and cannot enjoy sexual rights [19].

This falsification about the sexuality of people with disabilities not only makes them susceptible to discrimination but also heighten their vulnerability in relation to situations related to STIs [7]. [29] also indicated that three out of five adolescents who initiated sex did not use any form of protection. It was also revealed in this Kenya study that older siblings who engaged in sex also had a strong influence on sex debut among adolescents. The same study revealed that those who had early sex debut are likely to have multiple partners thereby increasing their risk of contracting STIs.

A study conducted in Jamaica revealed that, 54% of adolescents had sex debut at 14 years and had partners who were at least five years older than them [31]. A study which analyzed a survey in 24 African countries, revealed that in West Africa, a significant proportion of adolescents-initiated sex before age 15 [18]. The study further stated that child

birth among adolescents was also more common in West Africa compared to East and Southern Africa. The authors concluded that many adolescents aged 15 to 19 years were sexually active and therefore at risk of contracting HIV, other STIs due to low condom use and low uptake of contraceptives.

1.3. Research Questions

The study was guided by the following research questions:

1. What knowledge do adolescent students with deafness have on the types of STIs?
2. What knowledge do adolescent students who are deaf have about transmission of STIs?

2. Materials and Methods

The design for the study was descriptive survey using quantitative approach. Descriptive survey design was used because it is used to identify characteristics, frequencies, trends and categories. It is useful in diagnosing a situation since it involves describing, recording, analyzing, interpreting conditions that exist [15].

2.1. Population

The population for the study was all adolescents with deafness in Junior High Schools (JHS) in the schools for the deaf in the Eastern region of Ghana. The population included adolescent students in JHS two and JHS three in Koforidua, Kibi and Mampong Akwapim Demonstration Schools for the Deaf, who were between the ages of 13 and 24 years and who are deaf. There were 125 students in this category.

Table 1. Enrolment of the schools for the deaf in the Eastern Region.

School	Boys	Girls	Total
Koforidua School for the deaf	15	11	26
Kibi School for the deaf	28	14	42
Akwapim Demonstration school for the deaf	25	32	57
	68	57	125

The sample size used for this study was drawn from a list of adolescent students with deafness in the three schools for the deaf. The sample size was determined using [15] formula for sample size determination. [15] formula for sample size determination is given as: $n = \frac{N}{1 + N(a^2)}$

In determining the sample size, this formula was used. With a confidence level of 95% and a margin of error (a) of 5%, the result for the sample size was as follows:

$$n = \frac{N}{1 + N(a^2)}$$

Where; n = sample size; N = Sampling Frame; 1 = Constant; and a = Margin of error

The sample for the study was 95 adolescent students with deafness from the three schools for the deaf. The sample size was proportionally distributed among the schools using stratified sampling and simple random sampling techniques.

To give equal chance to all eligible respondents, numbers were written on pieces of papers according to the sample size of each group including blank papers folded and placed in a basket for all students to pick one, after a thorough shake. The required number of students was picked. All those who picked the required numbers formed part of the study.

The researchers used HIV- Knowledge Questionnaire [12] to assess the knowledge of respondents on types, mode. The questionnaire was made up of close ended items which were carefully used to generate the needed information. The five likert-type scale ranging from 1. Strongly Disagree (SD), 2. Disagree (D), 3. Neutral (N), 4. Agree (A) and 5. Strongly Agree.

The questionnaire had three different sections. Section A was made up of the background information. Section B comprised information on the knowledge of the types of STIs. Section C captured information on the knowledge on the modes of transmission of STIs.

Expert judgement was used to check the adequacy of the items [8]. The questionnaire was given to the researchers' supervisor, other lecturers from the Department of Special Education from the University of Education checked the adequacy of the items. Reliability analysis was done using Cronbach's alpha reliability model. The reliability co-efficient for types of sexually transmitted Infection is 0.761 and mode of transmission of STIs is 0.806.

An introductory letter was obtained from the Department of Special Education, University of Education, Winneba. The letter was sent to Eastern Regional Education Directorate in order to gain access to the schools. The researchers sought support from some of the teachers to assist in interpreting the questionnaire items to the students. All the respondents were fully briefed about the nature of the research project, what was expected of them and the objectives of the study. Consent of the respondents was sought before the questionnaires were administered. The data collected were held in confidence and personal identities of respondents were not disclosed.

The data were tabulated, analysed and interpreted using Statistical Package for Social Sciences in line with the research objectives and questions. Frequencies and percentages were used to analyse biodata of respondents.

3. Results

Table 2. Knowledge on the types of STIs

Statement	Agree	Neutral	Disagree	Mean	SD
There are different types of STIs	85(89.05%)	4(4.1%)	6(6.4%)	4.25	0.92
Gonorrhea is a type of STIs	84(88.5%)	6(6.2%)	5(5.3%)	4.28	0.88
Genital warts is a type of STIs	24(25.5%)	34(36.1%)	36(38.3%)	2.68	1.28
Syphilis is a type of STIs	80(84.2%)	6(6.3%)	9(9.5%)	4.21	1.28
Trichomoniasis is a type of STIs	4(4.2%)	26(27.7%)	65(68.5%)	1.94	0.97
Cancroid is a type of STI"s	31(32.6%)	32(33.7%)	32(33.7%)	3.00	1.40
Chlamydia is a type of STIs	29(30.9%)	11(11.6%)	54(57.5%)	2.56	1.40
Hepatitis B is a type of STIs	6(6.5%)	23(24.6%)	64(68.9%)	1.92	1.11
HIV/AIDS is a type of STIs	82(89.1%)	6(6.5%)	4(4.4%)	4.08	0.82
Genital Herpes is a type of STIs	37(38.9)	17(17.9%)	41(43.2%)	2.99	1.39
Grand mean				3.19	1.12

Source: Field Survey 2022

Results as shown in Table 2 indicate that a greater number of the adolescent students with deafness 85(89.5%) agree with the statement that there are different types of sexually transmitted infection.

Results as shown in Table 2 indicate that Gonorrhea is a type of STIs. Majority of the students with 84 (88.5%) agreed with the statement. Table 2 indicates that less than half 24(25.5%) of the respondents agreed with the statement that Genital warts is a type of STIs whereas 36(38.3%) of the students disagreed with the statement that Genital warts is a

type of STIs. However, 34(36.1%) of the respondents were not sure whether Genital warts forms part of the STIs.

From Table 2 majority of the adolescent students with deafness 80(84.2%) shared with the opinion that syphilis is a type of STIs. Table 2 indicates that a greater number of the respondents 65(68.5%) disagreed with the statement trichomoniasis is a type of STIs.

Results as shown on Table 2 indicate that one third of the respondents 31(32.6%) agreed with the statement that cancroids is a type of STIs whereas 32(33.7%) of the students disagreed with the statement. However, 32(33.7%) of the adolescent students with deafness could not indicate their opinion whether cancroids are a type of STIs.

From Table 2, it shows that majority of the respondents 54(57.5%) disagreed with the statement that Chlamydia is a type of STIs. Table 2 indicates that majority of the adolescent students with deafness 64(68.9%) disagreed with the statement that Hepatitis B is a type of STIs. Results as shown on Table 2 indicate that a greater number of the respondents 82(89.1%) agreed with the statement that HIV/AIDS is a type of STIs.

Table 2 shows that less than half of the respondents 37(38.9%) agreed with the statement that Genital herpes is a type of STIs whereas 41(43.2%) of the students disagreed with the statement that genital herpes is a type of STIs. Results as shown in Table 2 indicate that a greater number of the respondents 80 (84.2%) agreed with the statement that syphilis is a type of STIs.

Table 3. Knowledge on the mode of transmission of STIs

Items	Agree	Neutral	Disagree	Mean	S. D.
Mosquito bite can cause STIs	11(11.7%)	18(19.1%)	65(69.2%)	2.10	1.15
Sharing toothbrush with an individual can STIs	35(36.8%)	31(32.6%)	29(30.6%)	3.15	1.32
One can get STIs by sharing sharp objects with an infected person	52(54.7%)	18(19.0%)	25 (26.3%)	2.22	1.25
One can get STIs by sharing food with an infected person	16(16.9%)	23(24.2%)	56(58.9%)	2.23	1.29
A pregnant woman can transmit STIs to an unborn child	53(55.8%)	14(14.7%)	28(29.5%)	3.13	1.27
STIs can be transmitted to child through breastfeeding	48(51.1%)	24(25.5%)	22(23.4%)	3.45	1.04
Kissing an infected person can result in transmission of STIs	60(63.1%)	14(14.6%)	21(22.3%)	3.17	1.14
STIs are mainly acquired through unprotected sex	89(93.7%)	2(2.0%)	4(4.3%)	4.42	0.86
Engaging in casual sex can result in contracting STIs	91(95.8%)	1(1.0%)	3(3.2%)	4.33	0.66
STIs are acquired through witchcrafts or supernatural means	24(25.3%)	10(10.5%)	61(64.2%)	2.60	1.21
Grand mean				3.18	1.11

Source: Field Survey 2022

Results as shown on Table 3 indicates that more than half of the respondents 52(54.7%) agreed with the statement that one can get STIs by sharing sharp objects with an infected person. Table 3 indicates that a greater number of the adolescent students with deafness 53(55.8%) agreed with the statement that pregnant mother can transmit sexually transmitted infection to an unborn child whereas 28(29.5%) disagreed with the statement. However, 14(14.7%) of the respondents were not sure whether pregnant mother can transmit STIs to an unborn child.

Table 3 also shows that more than half of the respondents 48(51.1%) agreed with the statement that sexually transmitted infection can be transmitted to a child through breastfeeding whereas 22(23.4%) of the students disagreed with the statement. However, 24(25.5%) of the respondents did not indicate their opinion on the statement.

From Table 3 it is evident that majority of the respondents 60(63.1%) agreed with the statement that kissing an infected person can result in transmission of STIs. Results as shown on Table 3 revealed that a greater number of the respondents 89(93.7%) agreed

with the statement that STIs are mainly acquired through unprotected sex. Again, it indicates that majority of the respondents 91(95.8%) shared the view that engaging in casual sex can result in contracting STIs.

From Table 3, it is evident that majority of the respondents 61(64.2%) disagreed with the statement that sexually transmitted infection are acquired through witchcraft or supernatural means. However, 24(25.3%) of the respondents agreed with the statement that STIs can be acquired through witchcraft or supernatural means whereas 10(10.5%) could not indicate their opinion on the statement.

From Table 3, it was evident that less than half of the respondents 35(36.8%) agreed with the statement that sharing of tooth brush can transmit STIs whereas 29(30.6%) of the students disagreed with the statement. However, 31(32.6%) of the respondents were not sure whether sharing of tooth brush can transmit STIs.

4. Discussion

Analysis of data on the knowledge of adolescent students with deafness in the study areas revealed that majority (89.5%) of the students are aware that there are different types of STIs. This shows that adolescent students will be circumspect in involving themselves in sexual activities since they are aware that various types of STIs exist that they need to avoid from being infected. This study is consistent with [39] that majority of adolescents from India were aware that there are different types of STIs.

The results of the study also revealed that a greater number (88.5%) of the adolescent students indicated that Gonorrhea is one of the types of STIs. This finding agreed with [3, 9] who investigated knowledge of sexually transmitted infection among adolescents. On the other hand, the findings contradicted the finding of [4] that the adolescents had inadequate knowledge on the types of sexually transmitted infections.

From the findings, adolescent students with deafness who have adequate knowledge on the various types of STIs are likely to be careful in indulging in sexual acts that can result in contracting any form of STIs. On the other hand, adolescent students with deafness who do not have adequate knowledge on the types of STIs may be exposed to all kinds of STIs as they indulge in unprotected sexual acts.

The findings of the study also revealed that only 37 (38.9%) of the adolescent students indicated that Genital herpes is a type of STIs. This is worrying, as it suggests that adolescent students lack knowledge about some of the types of STIs. This confirms [35] study which revealed that all the participants had heard of HIV, but far less knew of other STIs such as cancroids, syphilis and genital herpes.

Again, the findings revealed that majority 80 (84.2%) of the students demonstrated that syphilis is a type of STIs. This finding agrees with [9] in their study revealed that 92% of the respondents had heard of at least one of the listed STIs which included syphilis, gonorrhea and Chlamydia. On the other hand, the results of the study do not agree with the findings of [14] who found that adolescent students lacked knowledge regarding various types of STIs.

The study further revealed that a greater number of adolescent students with deafness 64 (68.9%) is of the opinion that hepatitis B is not one of the types of STIs. This inadequate knowledge may cause adolescent students to continue to engage in actions that may spread the infection

The study also revealed that greater number of the adolescent students 54 (57.5%) indicated that Chlamydia is not a type of STIs. This exposes adolescent students‟ inadequate knowledge on the various types of STIs. This finding agrees with [33] study revealed that adolescents showed low levels of knowledge of STIs with the exception of HIV/AIDS.

The study also revealed that a greater number (89.1%) of the adolescent students indicated that HIV/AIDS is a type of sexually transmitted infection. This agrees with a study conducted by [14, 32] that nearly all the respondents had good knowledge of HIV/AIDS. They are likely to avoid sexual activities that will result in contracting STIs. On the other

hand, adolescent students who do not have adequate knowledge on the types of STIs may get involved in unprotected sexual behaviours which may expose them to contracting STIs thereby increasing the prevalence rate.

Analysis of data on the mode of transmission of sexually transmitted infection revealed that majority of the adolescent students with deafness 52 (54.7%) share the view that STIs can be transmitted through sharing of sharp objects. This shows that the adolescent students with deafness are aware that sharing of sharp objects such as knife, blade, and needles can result in transmitting STIs. This is consistent with the findings of [2] and [13] that avoiding sharing of sharp objects with another person can prevent sexually transmitted infections.

The results of the study also indicated that greater number of the respondents shared the opinion that a pregnant mother can transmit STIs to the unborn baby (55.8%), infected mothers to their babies through breastfeeding (51.1%). This is consistent with the findings of [13, 22] view of mother to child and breastfeeding modes of transmission of STIs. This knowledge will help to decrease the infection rate among the new babies of adolescents with deafness. However, the adolescent students with deafness who are of the view that sexually transmitted infection cannot be transmitted through breastfeeding of an infected mother are likely to breastfeed their babies even though they are infected.

Again, the findings revealed that greater number of the respondents (63.1%) indicated that kissing a partner can result in the transmission of sexually transmitted infection. This finding confirms [22] who found out from their study that majority of participants were aware that kissing a partner can result in contracting STIs. From the findings, students who know that kissing a partner can cause one to contract STIs are therefore likely to avoid kissing. Those that may indulge in such act may be very careful in their sexual activities to avoid contracting STIs.

Analysis of data on the mode of transmission of sexually transmitted infection also revealed that majority of the respondents were of the view that unprotected sex 89 (93.7%), engaging in casual sex (95.8%) are mode of contracting STIs. This finding agreed with [21, 23] who found that main mode of transmission of STIs among adolescents is as a result of risky and unprotected sexual behaviours. From the findings, the students who were aware that STIs are mainly caused by unprotected sex are likely to avoid risky and unsafe behaviours that will result in contracting STIs. Adolescent students who lack knowledge on this and therefore indulge in casual sex can lead to other sexual infections.

The findings also revealed that majority of the adolescent students with deafness (64.2%) disagree with the statement that STIs can be acquired through witchcraft or supernatural means. This shows that majority of the respondents have adequate knowledge on the mode of transmission of STIs. Only a small percentage of respondents (25.3%) agreed that STIs can be acquired through witchcraft or supernatural means. This finding agrees with [2], who found from their study that only one-third of the adolescent believed that HIV/AIDS could be transmitted through witchcraft. On the other hand, the result disagrees with [26] who revealed that adolescents with hearing impairment in some selected special schools in Ghana believed that a person can acquire HIV and AIDS from being bewitched.

5. Key findings

The analysis of the data on the knowledge of adolescent students on the types of STIs revealed that majority of the adolescent students have adequate knowledge on some of the types of STIs such as gonorrhea,(88.5%), syphilis (84.2%), HIV/AIDS (89.1%). However, some students have inadequate knowledge on STIs such as cancroids (32.6%), genital herpes (38.9%), Chlamydia (30.0%), genital warts (25.5%) and hepatitis B (6.5%).

It was evident from the analysis of data on the modes of transmission of STIs that, majority of the adolescent students were aware that STIs can be transmitted through unprotected sex (93.7%), engaging in casual sex (95.8%), sharing of sharp objects (54.7%),

pregnant mother transmitting to her baby during pregnancy (55.8%), through breastfeeding (51.1%) and deep kiss of partner (63.1%). However, (25.3%) of the adolescent students had misconceptions that STIs could be acquired through witchcraft or supernatural means.

6. Conclusions

The study concluded that knowledge of adolescent students with deafness on the various types of STIs were insufficient; this is because the respondents could identify five out of the ten questionnaire items regarding the types of STIs.

The adolescent student with deafness demonstrated good knowledge on the mode of transmission of STIs. This is because students rightly answered nine out of ten questionnaire items regarding modes of transmission of STIs.

Recommendations

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

1. The authorities of the Schools for the Deaf in the Eastern Region of Ghana should ensure that provision of education on STIs is centered on both the common STIs such as HIV/AIDS, gonorrhea and syphilis and the uncommon ones such as cancroids, genital herpes, Chlamydia, genital warts and hepatitis B.
2. The teachers of the schools for the deaf in the Eastern Region of Ghana should continue to sensitize adolescent students with deafness on the modes of transmission of STIs to help all students to be conversant with the modes of transmission of STIs.

Author Contributions: Conceptualization FWKK, ED, and FKM; methodology, FWKK, ED, and FKM; formal analysis FWKK, ED, FKM and FA; Resources, FWKK, ED, FKM and FA; data curation FWKK, ED, FKM and FA; writing-original draft preparation, FWKK, ED, FKM and FA; writing-review and editing, FWKK, ED, FKM and FA. Authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding

Data Availability Statement: Data is available on request from the corresponding author. Acknowledgments: We acknowledge respondents for their time with us.

Conflicts of Interest: The authors declare no conflict of interest.

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