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A Cross-sectional Survey of Attitude and Belief towards Sexually Transmitted Infections: Questionnaire-based Study among Rural Secondary School Students

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Abstract: *Among the fastest growing health problems in secondary school children are sex-related infections. The aim of the study was to determine the attitude and belief of secondary school students in rural secondary schools towards sexually transmitted infections (STIs). The cross-sectional survey was used to study 398 students who were within the age range 14-19 years. A questionnaire (attitude α = 0.879, belief α = 0.868), called STI attitude and belief questionnaire (STIABQ), was used to collect data. Out of 398 copies of the questionnaire given out, 396 copies (99.5% return rate) were utilized for data analysis. Spearman Brown correlation coefficient, percentages and means were used to describe the data. Regression analysis was adopted to check how the independent variables predicted the dependent variables. About 51.8% of respondents were males and a little below two-thirds were 14-16 years old. Students had positive attitude (2.54 ± 0.46) and belief (2.30 ± 0.71) in overall and in most attitude and belief statements. The relationship (r = 0.181) between attitude and belief of students towards STIs was low. Sex predicted attitude but did not predict belief towards STIs significantly. However, age did not predict attitude but predicted belief significantly. Males and older age significantly predicted attitude and belief. Our findings underpin the need for a universal health education programme, focusing on social and mental health education that might strengthen attitude and belief of recipients, even though they demonstrated what could be labeled positive attitude and belief towards STIs.*

Keywords: attitude, belief, sexually transmitted, infections, secondary school students

INTRODUCTION

Sex-related infections otherwise recognized as sexually transmitted infections (STIs) amongst secondary school students are a worldwide growing health problem. For instance, it was reported that approximately one million people contract sexually transmitted infections every day and 50% of them are adolescents aged 15-24 years (Lazarus, Sihvonen, Laukamm, & Liljestrand, 2010). World Health Organization reported that half a billion of these people fall sick from one of the four curable STIs, including but no limited to chlamydia, gonorrhoea, syphilis, and trichomonas, each year (World Health Organization, 2018). STIs consist of various sexually transmittable infectious diseases such as chlamydia, gonorrhoea, genital herpes, human papilloma virus (HPV), human immunodeficiency virus (HIV), and syphilis. They are transmitted through various modes including vaginal, oral and anal sexual contact as well as through blood products. STIs can also be transmitted from mother to child during childbirth. An untreated STI can lead to salpingitis for women and to epididymitis for men, which can affect fertility and in worst cases could lead to sterility. Hepatitis B, genital herpes, HPV and HIV are other STIs that are still incurable infections (Linn, 2013).

In recent times, over 90% of the population was infected with one form of STI or another in some parts of the developing world. Despite long standing control efforts, it is estimated that more than 500 million people are still at high risk of infection; over 140 million persons are infected and about 6 million are in Africa, Middle East, Central and South-east Asia and countries in Latin America (Lucas, 2013). Currently, Africa accounts for 20%–35% of the global burden of curable and non-curable STIs (Lewis, 2011). In

Nigeria, the average national sero-prevalence of HIV infection among general population aged 15-49 years is 1.4%, with a higher prevalence among high-risk populations like adolescent secondary school students (Federal Ministry of Health, 2010; Ogbe, Sagay, & Imade, 2014; The Joint United Nations Programme on HIV/AIDS, 2019). The risk of HIV infection acquisition multiplies 10 times in those with STIs especially among secondary school students (Ogbe, 2011). Meanwhile, about 60% of both boys and girls aged between 14-19 years are infected with STIs and a greater propensity of females harbor one form of STI at some point in their life time without notice (Mengistu, Melaku, & Bedada, 2013). Secondary school students, who are mainly adolescents, are considered to be at high risk for STIs probably because they are more likely to practice unprotected sex and may have multiple sexual partners (Subbarao, & Akhilesh, 2017). This behavior occurs mainly because most adolescents may have a great propensity to exhibit attitude that might encourage the spread STIs (Amu, & Adegun, 2015).

Attitude is defined as readiness for positive or negative reaction to certain appearances or events. It is based on the experience and knowledge acquired during lifetime and adopted by learning in the process of socialization through which information is filtered by learning, thus forming a positive or negative attitude according to the given information (Oluwole, Oyekanmi, Ogunyemi, & Osanyin, 2020). Attitude established in that manner is very difficult to change. However, there is a significant gap in the students' attitudes towards STIs. For example, it was noted that females have more positive attitude towards STIs than males (Weinstock, & Cates, 2004). This is because parents are always more conscious of educating their girl child on the issues of sex and sex-related issues than their male child. The attention given to female children notwithstanding, STIs case rate for females in 2006 was three times higher than for males and much of this difference reflects the fact that females are far more likely to have negative attitude than males (Klinger, 2006).

Beliefs represent mainly assumptions everyone makes about himself or herself, about others and about different phenomena that are occurring in their environment. It is an internal feeling that something is true, even though that belief may be unproven or irrational. For example: 'I believe that condom use reduces the life span of the user or I believe that STI can be gotten from witchcraft' (Marsh, & Wallace, 2005). A study carried out on knowledge, attitudes and beliefs about sexually transmitted infections among Vietnamese students at a vocational school in Ho Chi Minh City reported that the students had negative attitudes and beliefs about STIs (Sofia, & Annabel, 2010). The implication of the above study could be that a negative attitude might give rise to negative belief and vice versa showing that there is a relationship between attitude and belief. It was established that there was a positive correlation between belief and attitude score even though the strength of the relationship was not shown. Therefore, the higher the belief in an object, the more positive attitude might be towards the object (Islahudin, Shahdan, & Mohamad-Samuri, 2017).

It is believed that the age at which STI is contracted more, according to National estimates, is between 15-19 years even though STIs are respecter of no age (Asli, Kaya, Husrew, & Evren, 2013). In Nigeria, it was reported that 70% male students aged 15-19 years had negative attitudes about STIs, except in HIV (Ike, & Aniebue, 2007). World Health Organization (2004) reported that majority of STIs occur in young adults aged 15-19 years than in other age groups because of negative attitude and lack of knowledge towards the subject matter. Worldwide, the interaction of demographic characteristics and attitudes are noticeable among students. For example, Vietnamese students at a vocational school in Ho Chi Minh City had negative attitudes about STIs (Sofia, & Annabel, 2010). In Turkish, male adolescents had more appreciable attitude towards STIs than females (Asli, Kaya, Husrew, & Evren, 2013). In South Africa, both male and female adolescents had negative attitude towards STIs (Mohaleni, 2013).

Secondary school students who are mainly adolescents fall within the age range 10-20 and some of them above 20 years old (World Health Organization, 2008). Adolescents make up approximately 20% of the

world's population and about 85% live in developing countries (World Health Organization, 2005). Those aged 15-19 years account for approximately 3 million cases of STIs, meaning one out of four sexually active teenagers reports an STI every year (Centre for Disease Control and Prevention, 2000). This high prevalence of STI will not only affect teens during adolescence, but also have a negative impact on their schooling leading to school dropout (Hill, & Biro, 2009). The annual occurrence of STIs, including HIV, accounts for the loss of more than 51 million years of healthy life among men, women and children worldwide (Alan Guttmacher Institute, 2009). In developing countries, STIs account for 17% of economic losses caused by ill-health (Mayaud, & Mabey, 2004). Adolescents are the age group at greatest risk for nearly all STIs (Hill, & Biro, 2009). One in 20 young people contract a curable STI each year (World Health Organization, 2008) and one out of four sexually active adolescent women is diagnosed with an STI every year (Yarber, & Parrillo, 2002).

STIs have constituted medical, social and economic problems in Nigeria (Ogunbanjo, 2009). They pose a major reproductive health burden on individuals. Many of the burdens include but not limited to sores and bumps on the body, recurrent private parts sores, generalized skin rash, pain during intercourse, scrotal pain, redness and swelling pelvic pain. Other reproductive health problems include eye inflammation, arthritis, pelvic inflammation disease, human immuno deficiency virus (HIV) and human papilloma virus (HPV) (Ogunbanjo, 2009).

To date, attention has not been focused on studies relating to attitude and belief towards STIs in Ebonyi State. In a part of Nigeria, secondary school students were reported to have had negative attitude towards STIs (Ogbe, Sagay, & Imade, 2014). Similarly, elsewhere it was reported that college students agreed that HIV/AIDS cannot be cured expressing some form of positive attitude towards the subject matter (Subbarao, & Akhilesh, 2017). The case of attitude and belief towards STIs among rural secondary school students in Ebonyi State, Nigeria are still suspect since no known study has been documented. This led the researchers to investigate the attitude and belief of the secondary school students towards STIs at least to act as a baseline on which other researchers would take off from.

The main purpose of this study was to determine the attitude and belief of rural secondary school students in Ebonyi State towards STIs. In order to establish the predictive strength of independent variables of gender and age of the students on the dependent variables, three hypotheses were tested at $p < 0.05$, thus:

1. Sex will not significantly predict attitude and belief of the students towards STIs.
2. Age will not significantly predict attitude and belief of the students towards STIs.
3. Attitude of the students will not significantly predict their belief towards STIs.

MATERIALS AND METHODS

Participants and setting

In the month of January 2021 we initiated this cross-sectional survey which was completed in the month of March of the same year on 398 (male, 206, female, 192) rural secondary school students. The sample was calculated using Taro Yamane (Yamane, 1973) formula for determining sample size as follows:

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

Where n = sample size
N = number of people in the population = 98040
e = allowable error (%) = 5% = 0.05
Substituting figures in the formula

$$n = \frac{98040}{1+98040(0.05)^2}$$

$$n = \frac{98040}{1+98040(0.0025)}$$

$$n = \frac{98040}{1+245.1}$$

$$n = \frac{98040}{246.1}$$

= 398.3766... Approximately 398.

The sample is in line with the rule of the thumb that suggests that when the population of a study is in several thousand, a proportion of 1% or less is ideal to be used (Nwana, 2014). The sample is in line with the rule of the thumb that suggests that when the population of a study is in several thousand, a proportion of 1% or less is ideal to be used (Nwana, 2014).

Research design

The survey used a researchers-developed questionnaire, called STI attitude and belief questionnaire (STIABQ), which comprised 22 items arranged in three sections A, B and C; in which section A contained two questions on the sex and age of the respondents; section B, comprised 10 items on attitude towards STIs, and section C contained 10 items on belief towards STIs. The STIABQ was validated by three experts in Health Education from one institution of higher learning in Enugu State. Thirty (15 males, 15 females) secondary school students of both sexes in one secondary school in a rural community in Abia State, not part of the study, were used for test of reliability. The data yielded a Cronbach alpha reliability coefficient of $\alpha = 0.89$ on the STIABQ. The reliability coefficients of attitude towards STIs (attitude $\alpha = 0.88$) and belief towards STIs (belief $\alpha = 0.87$) were calculated separately. The reliability coefficients were good enough based on reliability of 0.70 tolerable for good research instruments (Cohen, Manion, & Morrison, 2018).

The permission to use the students for the research from the Principal in each secondary school included in the study was obtained before data collection. A consent note with the explanation of the research purpose, method of response and assurance of anonymity was attached to each copy of the STIABQ. The researchers stayed with the respondents while they were completing the copies of the survey. This process was adopted in order to evade any probable communication during the process of responding to the questionnaire. The students were allowed 25 minutes during break period to respond to the copies of the STIABQ and return them immediately.

Ethical consideration

Ethical approval was granted by a Medical School Research Ethics Committee. Written informed consent was obtained from the participants prior to responding to the questionnaire. The participants read the consent note and agreed to be part of the study before responding to the study survey.

Inclusion and exclusion criteria

Students, of both sexes, who were in senior secondary (SS) 1-3 were recruited to participate in the study. Those who participated read the consent form attached to the questionnaire and willingly accepted to take part in the study. Students who declined to participate were excluded. Only secondary schools in the rural areas were included in the study.

Data analysis

The completed copies of the STIABQ were examined for wholeness of responses and copies that had incomplete responses were discarded. Out of 398 copies of the STIABQ administered; 396 copies (male 205, female 191) representing about 99.5% return rate, were used for data analysis. Percentages, Spearman Brown correlation coefficient and mean scores were used to describe attitude and belief of respondents towards STIs. In describing the respondents' attitude and belief a mean score of 2.50 and higher was adjudged positive attitude and negative belief and a mean score of less than 2.50 was adjudged negative attitude and positive belief towards STIs. Standard deviations were used to examine how the responses given by the respondents varied. In determining the strength of the relationship, r value of 0.10 to 0.29 was considered low relationship, r value of 0.30 to 0.49 was adjudged moderate relationship and r value of 0.50 to 0.99 was considered high and r value of 1.0 was considered perfect relationship (Pallant, 2011). Stepwise multiple regression analysis was run in order to observe the predictive power of independent variables on attitude and belief towards STIs. An alpha level of 0.05 was set for the multiple regression analysis. Analysis of data was done with IBM SPSS version 25.0 for windows.

RESULTS

Table 1: **Demographic characteristics of respondents**

Variables	Number	Percentage
Sex		
Male	205	51.8
Female	191	48.2
Age (years)		
14-16	252	63.6
17-19	144	36.4

Data in Table 1 show the demographic characteristics of respondents. More than half (205, 51.8%) the number of respondents are males and a little below two-thirds (252, 63.6%) are 14-16 years old.

Table 2: **Attitude and belief towards STIS among secondary school students**

S/N	Attitude Statement on STIs	Mean	SD	Dec.
1.	Sexually transmitted infections (STI) cannot be cured	2.44	0.90	NA
2.	I don't see sexually transmitted infections as being dangerous	2.77	0.96	PA
3.	It is better to avoid people who have contracted STI	2.86	0.90	PA
4.	People who are infected with STI must get treatment	2.93	0.85	PA
5.	People should get information about STIs in order to prevent these diseases.	2.79	0.83	PA
6.	Young people should be educated on STIs at school to prevent these diseases	2.83	0.82	PA
7.	In order not to contract STI people should use condom during sexual intercourse.	2.45	0.96	NA
8.	Anyone who does not want to become infected with a STI should use emergency contraception pills.	3.17	0.91	PA
9.	I don't like really discussing about STI	2.85	1.02	PA
10.	People should check their susceptibility status after having sex without condom.	2.27	1.02	NA
	Overall	**2.54**	**0.46**	**PA**

	Belief Statement on STIs			
1.	You are vulnerable to HIV infection if you don't use condoms always and correctly	2.15	1.00	PB
2.	It is a known fact that taking enough water before having sex without condom can prevent STIs	2.22	0.99	PB
3.	STIs are not contractible from a person you know very well.	2.19	1.02	PB
4.	Condom use reduces the life span of the user	2.12	1.01	PB
5.	Fasting can cure STI	2.07	0.97	PB
6.	STIs can only be contracted by the rich	2.12	1.01	PB
7.	There is nothing like STI	2.09	0.96	PB
8.	Eating balance diets can prevent STI	2.18	1.04	PB
9.	STI is a disease of the aged people	2.31	1.09	PB
10.	STI can be gotten from witchcraft	2.97	1.10	NB
	Over all	**2.30**	**0.71**	**PB**

PA = Positive attitude, NA = Negative attitude
PB = Positive belief, NA = negative belief

Table 2 shows that the students have positive attitude in most of the attitude statements having obtained mean scores above the cut-off mean of 2.50 set for the study. A look at the data could show that only three items obtained mean scores that are below the cut-off mean. The overall attitude score is above the criterion mean indicating positive attitude towards STIs. The standard deviations show that the mean responses cluster around the central mean.

Furthermore, the students have positive belief in most belief statements having obtained mean scores below the cut-off mean of 2.50 set for the study. A close look at the data could show that only one item obtained mean score that is above the cut-off mean. The overall belief score is below the cut-off mean indicating positive belief towards STIs. The standard deviations show that the mean responses cluster closely around the central mean.

Table 3: **Relationship between attitude and belief toward sexually transmitted infection**

	Belief									
		1	2	3	4	5	6	7	8	9	10
Attitude	0.181										
1		1									
2		0.182	1								
3		0.189	0.572	1							
4		0.132	0.509	0.627	1						
5		0.198	0.312	0.507	0.574	1					
6		0.208	0.307	0.359	0.553	0.528	1				
7		0.438	0.036	0.050	0.102	0.230	0.309	1			
8		0.079	0.394	0.417	0.481	0.400	0.549	0.113	1		
9		0.007	0.198	0.324	0.250	0.239	0.140	0.111	0.340	1	
10		0.356	0.132	0.127	0.092	0.004	0.047	0.448	0.100	0.006	1

Data in Table 3 show that the relationship scores between attitude and belief towards STIs range from low (r = 0.006) to high (r = 0.627). Over all, attitude relates to belief (r = 0.181) towards STIs among secondary school students. The overall result above suggests that attitude towards STIs of the subjects is positively and lowly correlated with their belief towards the subject matter.

Results in Table 4 show that the multiple regression (R) value of attitude towards STIs in relation to sex is 0.214 indicating a positive relationship and the t-value = 5.539. The p-value is less than p = 0.05 indicating that sex could significantly predict attitude towards STIs. The value of regression weight β = 0.198, which tends to account for 19.8% variance in the model indicates a low sex predictive value of attitude towards STIs. Furthermore, a close look at the results could show that most of the attitude statements tend to be predicted by sex.

Table 4: **Summary of stepwise multiple regression analysis of attitude towards STIs in relation to sex and age**

S/N	Variables	R	R^2	β	t-value	p-value
1.	Sexually transmitted infections (STI) cannot be cured	0.097	0.009	0.175	2.458*	0.014
2.	I don't see sexually transmitted infections as being dangerous	0.221	0.049	0.424	5.740*	0.000
3.	It is better to avoid people who have contracted STI	0.231	0.053	0.416	6.006*	0.000
4.	People who are infected with STI must get treatment	0.203	0.041	0.348	5.251*	0.000
5.	People should get information about STIs in order to prevent these diseases	0.089	0.005	0.114	1.746	0.081
6.	Young people should be educated on STIs at school to prevent these diseases	0.116	0.013	0.189	2.949*	0.003
7.	In order not to contract STI people should use condom during sexual intercourse	0.039	0.002	0.076	0.996	0.320
8.	Anyone who does not want to become infected with a STI should use emergency contraception pills	0.324	0.105	0.591	8.682*	0.000
9.	I don't like really discussing about STI	0.268	0.072	0.549	7.034*	0.000
10.	People should check their susceptibility status after having sex without condom	0.101	0.010	0.207	2.582*	0.010
	Over all attitude towards STIs	0.214	0.046	0.198	5.539*	0.000
	a**. Sex (Predictor)**					
	b. **Dependent variable (Attitude towards STIs)**					
1.	Sexually transmitted infections (STI) cannot be cured	0.143	0.020	0.268	3.654*	0.000
2.	I don't see sexually transmitted infections as being dangerous	0.081	0.007	0.162	2.066*	0.039
3.	It is better to avoid people who have contracted STI	0.124	0.015	0.233	3.172*	0.002
4.	People who are infected with STI must get treatment	0.062	0.004	0.109	1.562	0.119
5.	People should get information about STIs in order to prevent these diseases	0.032	0.001	0.055	0.806	0.421
6.	Young people should be educated on STIs at school to prevent these diseases	0.079	0.006	0.134	2.008*	0.045
7.	In order not to contract STI people should use condom during sexual intercourse	0.236	0.056	0.473	6.158*	0.000
8.	Anyone who does not want to become infected with a STI should use emergency contraception pills	0.012	0.001	0.023	0.306	0.760
9.	I don't like really discussing about STI	0.106	0.011	0.225	2.689*	0.007
10.	People should check their susceptibility status after having sex without condom	0.206	0.042	0.436	5.330*	0.000
	Over all attitude towards STIs	0.060	0.004	0.058	1.526	0.127
	a**. Age (Predictor)**					
	b. **Dependent variable (Attitude towards STIs)**					

* Significant at $p < 0.05$

Table 4 further shows that the multiple regression (R) value for attitude towards STIs in relation to age is 0.0.060, which indicates a positive relationship and the t-value = 1.526. The p-value is greater than p = 0.05 indicating that age might not significantly predict attitude towards STIs. The value of regression weight β = 0.058, which accounts for 5.8% variance in the model indicates a very low age predictive value of attitude towards STIs. However, a close look at the results could show that most of the attitude statements may at the long run be predicted by age.

Table 5: **Summary of stepwise multiple regression analysis of belief towards STIs in relation to sex and age**

S/N	Variables	R	R^2	β	t-value	p-value
1.	You are vulnerable to HIV infection if you don't use condoms always and correctly	0.138	0.019	0.277	3.528*	0.000
2.	It is a known fact that taking enough water before having sex without condom can prevent STIs	0.089	0.008	0.177	2.255*	0.024
3.	STIs are not contractible from a person you know very well.	0.085	0.007	0.173	2.159	0.031
4.	Condom use reduces the life span of the user	0.027	0.001	0.054	0.679	0.498
5.	Fasting can cure STI	0.011	0.001	0.021	0.268	0.789
6.	STIs can only be contracted by the rich	0.097	0.009	0.197	2.478	0.013
7.	There is nothing like STI	0.044	0.002	0.084	1.109	0.268
8.	Eating balance diets can prevent STI	0.117	0.014	0.245	2.980	0.003
9.	STI is a disease of the aged people	0.035	0.001	0.075	0.879	0.380
10.	STI can be gotten from witchcraft	0.410	0.168	0.907	11.384	0.000
	Over all belief towards STIs	0.003	0.001	0.005	0.082	0.935
	a. **Sex (Predictor)**					
	b. **Dependent variable (Belief towards STIs)**					
1.	You are vulnerable to HIV infection if you don't use condoms always and correctly	0.278	0.077	0.578	7.316*	0.000
2.	It is a known fact that taking enough water before having sex without condom can prevent STIs	0.280	0.079	0.581	7.391*	0.000
3.	STIs are not contractible from a person you know very well.	0.349	0.122	0.737	9.435*	0.000
4.	Condom use reduces the life span of the user	0.402	0.162	0.842	11.117*	0.000
5.	Fasting can cure STI	0.429	0.184	0.863	12.040*	0.000
6.	STIs can only be contracted by the rich	0.333	0.111	0.699	8.931*	0.000
7.	There is nothing like STI	0.384	0.148	0.768	10.538*	0.000
8.	Eating balance diets can prevent STI	0.328	0.108	0.713	8.805*	0.000
9.	STI is a disease of the aged people	0.329	0.108	0.742	8.828*	0.000
10.	STI can be gotten from witchcraft	0.080	0.006	0.183	2.023*	0.005
	Over all belief towards STIs	0.390	0.152	0.576	10.732*	0.000
	a. **Age (Predictor)**					
	b. **Dependent variable (Belief towards STIs)**					

* Significant at $p < 0.05$

Table 5 shows that the multiple regression (R) value of belief towards STIs in relation to sex is 0.003, which indicates a positive relationship and the t-value = 0.082. The p-value is greater than p = 0.05 indicating that sex is not inclined towards predicting belief towards STIs. The value of regression weight β = 0.005, which accounts for 0.5% variance in the model indicates a very low sex predictive value of belief

towards STIs. However, a close look at the results could show that only two out ten belief statements might be predicted by sex.

Data in Table 5 further show that the multiple regression (R) value of belief towards STIs in relation to age is 0.390, which indicates a positive relationship and the t-value = 10.732. The p-value is less than p = 0.05 indicating that age has the tendency of significantly predicting belief towards STIs. The value of regression weight β = 0.576 which accounts for 57.6% variance in the regression model indicates a moderate age predictive value of belief towards STIs. However, a close look at the results could show that all the belief statements have the tendency to be predicted by age.

Table 6: **Summary of stepwise multiple regression analysis of attitude and belief towards STIs in relation to each level sex and age**

Variables	R	R^2	β	t-value	p-value
Sex					
Male	0.269	0.072	0.162	5.156*	0.000
Female	0.109	0.012	0.073	1.884	0.061
Age					
14-16 years	0.084	0.007	0.054	1.692	0.091
17-19 years	0.281	0.079	0.180	4.459*	0.000
a**. Sex and Age (Predictors)**					
b. **Dependent variable (Attitude towards STIs)**					
Sex					
Male	0.269	0.072	0.445	5.156*	0.000
Female	0.109	0.012	0.163	1.884	0.061
Age					
14-16 years	0.084	0.007	0.110	1.692	0.091
17-19 years	0.281	0.079	0.437	4.459*	0.000
a**. Sex and Age (Predictors)**					
b. **Dependent variable (Belief towards STIs)**					

Data in Table 6 show that the multiple regression (R) value of attitude towards STIs in relation to male subjects is 0.269, which indicates a positive relationship and the t-value = 5.156. The p-value is less than p = 0.05 indicating that male sex might significantly predict attitude towards STIs. The value of regression weight β = 0.162, which accounts for 16.2% variance in the regression model shows a low predictive value of attitude towards STIs. The results also show that the older the students the more they are inclined to predicting attitude towards STIs. The same trend shown in attitude above is also observed in belief towards STIs.

DISCUSSION

Data on demographic characteristics of the students showed that majority (51.8%) of respondents were males. This number was a little bit amazing because, in the present day Nigeria, a visit to secondary schools could show that females are more in number than males (Anikwe, Mamah, Okorochukwu, Nnadozie, Obarezi, & Ekwedigwe, 2020) and the observation that the 14-16 years old students were greater in number than 17-19 years old students was not unexpected. The reason being that boys in the area of the study, after the first 3 years in the post primary school, would prefer going into the street to hawk

(Elom, Nwimo, Ilo, Nkwoka, & Ojide, 2019); as could be observed when entering the major cities in the State, in order to start life as men. It was therefore expected that females be more in number than males. It was also expected that younger adolescents would be seen in the school more than older ones (Anikwe, Mamah, Okorochukwu, Nnadozie, Obarezi, & Ekwedigwe, 2020), hence 14-16 years old students being greater in number was not a surprise.

Results showed the students had positive attitude towards STIs. Despite demonstrating positive attitude, the students still thought that STIs were not dangerous. This nature of thought by students might expose them dangerously to the malice of the infection thereby making the prevalence of STIs unabated in the society. The unabated high prevalence will not only affect teens during secondary school days, but also have a very great negative impact on their future schooling with the attendant increase in school dropout (Hill, & Biro, 2009). The negative effect of STIs could account for the loss of several years of healthy life among members of the population worldwide (Alan Guttmacher Institute, 2009). It was a cheering development that the students had positive belief in most belief statements and the overall belief. Cheering in the sense that ones belief will always influence his or her actions positively or negatively. Since the students had positive belief towards STIs there is every tendency that actions towards what would expose them to STIs would be mortgaged positively. The findings in the present study corroborated those reported among college students in previous studies (Amu, & Adegun, 2015; Chaudhry, 2017; Subbarao, & Akhilesh, 2017; Kassie, Gudayu, & Araya, 2020; Jibril, Tukur, & Danlami, 2021; Mahboob, Iqbal, Afrin, Abedin, Ahmed, 2022; Dorji, Wangmo, Tshering, Tashi, Wangdi, 2022). However, the findings of the present study did not support the reports of a study whose subjects had negative attitude and belief towards STIs (Kejela, & Saboka, 2015; Assefa, Sema, & Bezabih, 2021; Pushpakumari Perera, & Abeysena, 2020; Stephenson, Dike, Mienye, & Abiyem, 2020; Rashed, Ismael, El Sayed, Alkhelaiwi, Alruwaili, Alfouzan, & Ali Hamada, 2021; Wirattanapokin, Pupjain, Imnam, & Yodsena, 2023). The variation in the findings of the studies may have been accounted for by differences in location and population of the studies, though most of the studies were conducted in Africa.

The relationship between attitude and belief towards STIs was low ($r = 0.181$) even though the relationship among individual items the make up attitude and those that constitute belief ranged from very low ($r = 006$) to high ($r = 0.627$). The overall result above suggests that attitude towards STIs of the subjects is positively and lowly correlated with their belief towards the subject matter. Attitudes take place out of core values and beliefs human beings hold internally and beliefs are suppositions and conviction they hold to be true based on past experiences. Therefore there should be strong relationship between the two constructs. However, the weak relationship found between the two constructs may not a source of concern because the rural secondary school students whose attitude and belief towards STIs so measured are still at the formation stage. This observation tends to be in line with report that the higher the belief in a given subject matter, the more positive the attitude would be towards same object. In their study those who were using complementary alternative medicine showed a stronger belief with a more positive attitude toward it, than those who were not using complementary alternative medicine (Islahudin, Shahdan, & Mohamad-Samuri, 2017).

Sex was inclined towards predicting attitude towards STIs ($p < 0.05$). When the two genders were separated, it was discovered that the male gender was the source of the prediction. This finding attested to the reality that females are far more likely to have negative attitude than males (Klinger, 2006; Mekonnen, Bayleyegn, Aynalem, Adane, Muluneh, & Zeru, 2020) and corroborated reports on attitude towards STIs among preparatory school students in Shone Town, Ethiopia (Gemechn, & Bikil, 2015) and the finding also seemed to corroborate the reports on attitude of secondary school students towards sexually transmitted infections (Le, 2007; Adjei, Gyamfi, Anokye, Peprah, Acheampong, Acheampong, Mprah, Essien, & Ariel, 2020; Rashed, Ismael, El Sayed, Alkhelaiwi, Alruwaili, Alfouzan, & Ali Hamada, 2021).

When age was considered, it was observed that age did not predict attitude towards STIs ($p > 0.05$). Though a study maintained that age influenced the attitude of school pupils in rural Ghana towards sexually transmitted infections (Le, 2007) disagreeing with the present report. As the two age groups were separated, it was discovered that the 17-19 years group was inclined to predicting ($p < 0.05$) attitude towards STIs. A possible reason for this inclination could be that as the students get more mature they tend to hide the reality associated with certain issues and intend to feel uncomfortable to share their personal experiences as a result the situation was not a surprise. The findings lent credence to other studies (Le, 2007; Sofia, & Annabel, 2010; Asli, Kaya, Husrew, & Evren, 2013; Rashed, Ismael, El Sayed, Alkhelaiwi, Alruwaili, Alfouzan, & Ali Hamada, 2021) that reported old students they studied had more plausible attitude towards STIs.

The results showed sex was not prone towards predicting belief towards STIs ($p < 0.05$). When the two genders were treated separately, it was revealed that the male gender was inclined towards predicting ($p < 0.05$) students' belief towards STIs. When age was brought into focus, it was reported that age predicted students' belief towards STIs ($p < 0.05$). When the two age groups were separated, it was revealed that the 17-19 years group was disposed to predicting ($p < 0.05$) students' belief towards STIs. A probable explanation to this tendency may perhaps be that as the young lads get older and more mature they tend to hide the reality associated with certain issues and intend to feel uncomfortable to share their personal experiences as a result the situation was not a surprise as observed earlier. The findings lent credence to other studies (Le, 2007; Sofia, & Annabel, 2010; Asli, Kaya, Husrew, & Evren, 2013; Ali, Goel, Sharma, Rana, & Gachuki, 2023; Mahboob, Iqbal, Afrin, Abedin, Ahmed, 2022) that reported older students they studied had positive belief towards STIs.

CONCLUSIONS

Attitude and belief towards STIs are important in the prevention and control of the diseases. This circumstance is particularly important among rural secondary school students who are still timid adolescents. Doubts still existed among the students studied, especially in relation to curability of STIs. Though, the students demonstrated a positive attitude and belief towards STIs. Frightening gaps in curability and nature of STIs might put the students at risk of contracting STIs.

The findings reported in this study might not be used in making a far-reaching conclusion concerning other groups of students in Nigeria and elsewhere; that may be different to a large extent in every sphere of life including social and economic situations. The students studied may represent a significant collection of the population of Nigeria and information gathered would be helpful in planning prospective sexually transmitted infections and other health-related programmes in both secondary and tertiary schools in Nigeria and may be in other countries in sub-Saharan Africa.

The findings of the study strengthen the need for a general health education programme, focusing on social and mental health education that might strengthen the attitude and belief of the recipients, even though the respondents in the present study demonstrated what could be labeled positive attitude and belief towards STIs.

Implications for policy makers

1. Students at all levels of education continue to be at increased threat of sexually transmitted infections (STIs). Curriculum designers are challenged to include sex and family life education in the programme to mitigate their behavior.
2. This study described the attitude and belief of rural secondary students towards STIs. It applied a structured questionnaire to determine the attitude and belief of the students towards the subject

matter. The participants reported an overall positive attitude and positive belief towards STIs. Health education teachers in secondary schools are challenged to still engineer the behavior of the students to abstain from unprotected sexual intercourse in order to prevent the scourge.

3. The available health education is meant to reach all members of the population that are at risk for contracting STIs, therefore policy makers are challenged to reach community members through workshops, symposia and mass media campaigns.
4. Since sex was inclined towards predicting attitude towards STIs, policy makers are challenged to muster efforts to mortgage the conscience of the gender population.
5. Since STIs are very disturbing health problems, community interventions, focusing on lower education settings should be ideal in order to catch them young.

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