

European Journal of
Health Sciences
(EJHS)



**Knowledge on Sexually Transmitted Infections (STIs) and
sexual practices among Nursing Trainees in Yendi
Municipality, Northern Region of Ghana**

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Knowledge on Sexually Transmitted Infections (STIs) and sexual practices among Nursing Trainees in Yendi Municipality, Northern Region of Ghana

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Abstract

Purpose: This study aimed to assess the knowledge on Sexually Transmitted Infections (STIs) and sexual practices among nursing trainees in Yendi Municipality, Northern Ghana.

Methodology: The study was conducted in Northern Ghana, using a cross-sectional study design. The study recruited 265 students using a multistage sampling technique. A self-reported questionnaire was used for the data collection. Data were analyzed using Stata version 16 and p-value < 0.05 was considered statistically significant.

Findings: Majority (54.0%) of the respondents were males (69.1%), below 25 years with a mean age of 23.5 ± 2.4 years. Most students (33.2%) had their first sexual relationship before 20 years of age. Only 20.4% of the students reported having had STIs in the past six months. Nine out of ten (90.9%) respondents have heard of STIs. Among the respondents who had ever heard of STIs, majority (71.7%) heard about STIs in school, followed by the media (41.1%), friends (33.2%), and relatives (29.4%). Majority (75.0%) of students had sufficient knowledge of STIs. The association between knowledge on STIs and program of study ($X^2=7.6$, $p=0.023$), gender ($X^2=3.93$, $p=0.047$), and age ($X^2=22.3$, $p=0.039$) were statistically significant. The odds of sufficient knowledge of STIs for students pursuing Registered Mental Nursing (RMN) is 3 times that of those studying RNAC program (AOR=3.4, 95%CI=1.23 – 9.55, p-value=0.019). Respondents aged ≥ 25 years were 1.8 times more likely to have sufficient knowledge compared with those below 25 years (AOR=1.8, 95%CI= 1.19 – 3.38, $p=0.047$).

Recommendation: There is the need for sensitizations and intensifying education since not all students were armed with the required information on STIs. Stakeholders including, the Ministry of Health, Ghana Health Service, Islamic Medical Association of Ghana (IMAGH), Christian Health Association of Ghana (CHAG) and Tutors of health training institutions ought to re-evaluate the current interventions, and protocols on STIs prevention. There is also the need to regulate media content on health by the National Media Commission and the Ministry of Health of Ghana and its affiliates to ensure the right information on STIs is channelled to listeners by qualified persons.

Keywords: *Knowledge, sexually transmitted infections (STIs), sexual practices, nursing trainees, Northern Ghana*

Introduction

Sexually transmitted infections (STIs), sometimes known as Sexually Transmitted Diseases (STDs), are a category of disorders that are transmitted from one person to another through sexual contact [1–4]. STIs (sexually transmitted infections) are a major public health issue that affects everyone [5,6]. The global burden of Sexually Transmitted Infections (STIs) remains very high with over one million new people being infected every day [3]. Acute sickness, infertility, incapacity, and death are among the dangers of STIs [7]. STIs affect young people and adolescents more than any other group. According to a global survey, 357–376 million treatable new cases of STIs were detected each year among adolescents and adults [8].

There are about 30 different types of STIs. The common daily often reported treatable STIs at various health facilities include; gonorrhea, syphilis, chancroid, and chlamydia [2,3] whereas others such as HIV, genital herpes, HPV, and Hepatitis B, can only be managed with recommended treatment options and cannot be cured [9]. The majority of sexually transmitted infections are asymptomatic, rendering diagnosis a challenge [10] and the spread of STIs a serious issue. This is because persons who may be infected may still have sexual relationship with others and the situation is even dire when the infected person is promiscuous. New infections of treatable STIs increased from 359 million in 2012 to 376 million in 2016 [3]. In low-middle-income countries (LMICs), STIs and its associated consequences are among the top five disease categories for which individuals seek medical assistance. Sexually transmitted infections (STIs) are a severe concern to the international population. As a result, the WHO developed a plan to eradicate STIs in 2016 [3]. Increased knowledge of STIs is one of the strategy's goals which, therefore, necessitates studies to determine the diseases' worldwide impact [6,11].

Knowledge about STIs is indicated to be positively associated with self-care and prevention among student nurses [12]. Inadequate understanding of STIs is the most significant obstacle to successfully preventing infections in young adult populations [13,14]. Knowledge on STIs is critical for reducing negative reproductive health outcomes in young adults [15,16]. Lack of information about STIs might lead to a delay in treatment [17]. Delay in the treatment of STIs could lead to a variety of problems. For instance, gonorrhea and chlamydia trachomatis cause epididymitis in men, which might lead to infertility in the future. Inflammatory urethral stricture may also develop in the future as a result of untreated gonococcal urethritis. This can lead to urine retention and chronic renal failure. Pelvic inflammatory diseases, infertility, an increased risk of ectopic pregnancies, abortions, stillbirths, and perinatal and neonatal morbidities can all occur in females as a result of untreated STIs. The health-seeking behaviours of people infected with STIs is influenced by their knowledge [18,19]. An Indian cross-sectional study among students suggests that the orientation of students to sexual health and safe sexual practices is relevant in the prevention and control of STIs [9]. In Nigeria, only 6.9% of adolescents demonstrated good knowledge on STIs [20], and in Ethiopia, 31.5% of respondents were knowledgeable whereas 47.5% were fairly knowledgeable on STIs [21], in South Africa, 70.1% of respondents were said to be knowledgeable [22]. Also, in Brazil (89.9%) [23], in Bangladesh (76.0%) [24], nearly 87% in Malaysia [25], study respondents demonstrated appreciable knowledge on STIs. About 99% of college students were said to have appreciable knowledge of STIs [9].

A study in the Tamale metropolis has shown that young people are comfortable sourcing Sexuality and Reproductive Health (SRH) information from their colleagues [26,27]. Awareness regarding

STIs is significant in our quest to prevent the adverse outcomes of young adult reproductive health [28]. This class of people are sexually active, the need therefore, to ascertain their awareness and safe practices towards this condition [29]. Also, In Ghana people with STIs are mainly young people within ages 19-24 years [30]. In Ghana, a total of 346,120 people have HIV infection, with 18, 928 new cases in 2020 alone of which 28% were young people (i.e. 15-24 years)[31]. Similarly,, according to the 2016 HIV Sentinel Survey, the nationwide prevalence of HIV and Syphilis infections in Ghana was 2.4 percent and 0.2 percent, respectively, with the Volta Region being one of the most HIV-affected areas (2.7 percent) [32].

When young people attend school, be it the second cycle institution or the tertiary, they travel far away from their families and stay away for lengthy periods. Thus, parental supervision is absent. They generally reside in rented homes throughout their stay and interact with people from various cultural and behavioural backgrounds. Adolescents are more likely to engage in unprotected sex and have several sexual partners due to a lack of information and available services regarding STIs [33]. As a result, they are more likely to become infected with STIs. In the Yendi Municipality, search depicted the inadequacy of studies conducted on the knowledge of STIs among the youth, especially students at the health training institution. Health professionals are at the forefront of public health education. Therefore, this study aimed at assessing the knowledge on STIs and sexual practices among nursing trainees in Yendi Municipality, Northern Region of Ghana.

Methods and materials

Study area

The study was conducted at the College of Health Sciences, Yendi, Northern Ghana. The institution has a population of about 676 students pursuing the following health programs; Registered General Nursing (RGN), Registered Mental Nursing (RMN), and Registered Nurse Assistant Clinical (RNAC).

Study design

The researchers employed a cross-sectional quantitative approach for the study carried out from the 6th of September to the 7th of October, 2021.

Study population

The study population constituted all students who were currently offering any of the three programs being offered in the school.

Inclusion and exclusion criteria

In this study, all students were given an equal chance of participation in the study. However, those who refused to consent or were severely ill were excluded.

Sample size determination, sample techniques, and procedure

The sample size was calculated using Yamane, [34] formula. The school population was 676, a 95% confidence level with 5% margin of error were used to calculate the sample size. Using the above parameters, the sample size was estimated as 252. To make up for the non-response rate, the sample size was estimated as 265. A total of 265 participants were then enrolled in the study, from the College of Health Sciences, Yendi, Northern Ghana. The study employed a multistage

sampling technique. First, a stratified sampling technique was used to organize participants into three main programs of study; Registered General Nursing (RGN), Registered Mental Nursing (RMN), and Registered Nurse Assistant Clinical (RNAC). In the second stage, portions of the sample size were allocated to the three programs based on their ratio to the total student population. In the final stage of the technique, a link to the Google form questionnaire was sent to the WhatsApp and Telegram platforms of each program. Each stratum (program) has a WhatsApp/Telegram page. The first number of people marked for that group who could respond was taken to represent that stratum. The first 265 entries by the end of 7th October 2021 midnight, were used for the study.

Data collection tools and procedures

The data was collected through a self-reported questionnaire. The questionnaire was adapted from verified questions from published work [9,28] and revised to suit the current study. The questionnaire was pretested on 50 participants from a similar institution in Gushegu, a community in Northern Ghana for reliability. Appropriate corrections were made thereof before the commencement of data collection. The questionnaire was structured under three main sections; Section A enquired about respondents' socio-demographic characteristics, Section B assessed students' Knowledge on STIs and Section C elicited information on the Sexual behaviours of respondents. The questionnaire was digitized and shared on platforms that included only the study participants. The digitized questionnaire was in such a way that multiple responses from the same device were not possible.

Data analysis

Primary data from the Google form was downloaded as an excel file, sorted, cleaned, and managed with Microsoft excel. Data was subsequently exported into Stata version 16 and analysed. The data was presented in frequencies and percentages using tables. Composite scores were generated on knowledge variables and overall scores were graded into sufficient and insufficient knowledge. To assess the knowledge on STIs, the questions were structured in five sub-sections including; the types or examples of STIs, Signs and Symptoms, Risk factors, mode of transmission, and prevention and control of STIs. For each of these subsections, the participants were required to answer at least six (6) questions correctly. A correct answer was awarded a mark and an incorrect or no response was awarded "0". Thus, the pass mark was slated at 77%. Those who had less than 77% (< 30 correct answers) were said to be having insufficient knowledge on STIs whereas those who had $\geq 77\%$ (≥ 30 correct answers) were having sufficient knowledge on STIs. Chi-square analysis was then used to establish associations between the dependent and independent variables. P-value < 0.05 were considered statistically significant in this study. Binary logistic regression analysis was performed on all variables that had a p-value < 0.2 at the bivariate level. Related factors that were associated with STIs were determined using the binary logistic regression analysis.

Results

Demographic Characteristics of Respondents

In this study, majority (57.4%) pursued the RGN program, 39.6% of the respondents were in their first year. Majority (54.0%) of the respondents were males. With regards to age, majority (69.1%) of the study participants were below 25 years with a mean age of 23.5 ± 2.4 years. Majority of the

respondents (57%) practiced the Islamic faith, 58.9% of participants grew up in urban settlements. About half (50.9%) of the respondents were single (Table 1).

Table 1: Socio-demographic characteristics (N=265)

Variables	Category	Frequency	Percentage
Program of study	RGN	152	57.4
	RMN	44	16.6
	RNAC	69	26.0
Level of study	Year 1	105	39.6
	Year 2	103	38.9
	Year 3	57	21.5
Gender	Female	122	46.0
	Male	143	54.0
Age	<25 years	183	69.1
	≥25 years	82	30.9
	Mean (SD)		23.5(2.4)
Religion	Christian	114	43.0
	Islam	151	57.0
Where you grow up	Rural	109	41.1
	Urban	156	58.9
Relationship status	Dating	113	42.6
	Married	17	6.4
	Single	135	50.9

SD-Standard deviation, RGN-Registered general nurse, RMN-Registered Mental Nursing, RNAC-Registered Nurse Assistant Clinical

Sexual and Behavioural Characteristics of the Respondents

Most of the respondents (33.2%) had their first sexual relationship before 20 years of age. Majority (66.4%) of the students had only one sexual partner, 63.4% of the respondents had ever used a condom. Majority (90.7%) practiced vaginal intercourse. Only 20.4% of the students reported having had STIs in the past six months. The results further reveal that 92.5% do not watch pornography (Table 2).

Table 2: Sexuality and Behavioural Characteristics of the Respondents (N=265)

Variables	Category	Frequency	Percentage
Age at a first sexual relationship	<20years	88	33.2
	≥20years	77	29.1
	None response	100	37.7
How many sexual partners	One	176	66.4
	Two & more	37	14.0
	None	52	19.6
Have you used a condom	Yes	97	36.6
	No	168	63.4
Which of these do you practice most (n=97)	Oral Intercourse	9	9.3
	Vaginal Intercourse	88	90.7
Have you had STI within the last 6 months	Yes	54	20.4
	No	211	79.6
Watching pornographic	Yes	20	7.5
	No	245	92.5

Knowledge on Transmitted Infections (STIs)

The results indicated that majority (90.9%) of respondents had ever heard of STIs. Among the respondents who had ever heard of STIs, majority (71.7%) had heard of STIs in school, followed by media (41.1%), friends (33.2%), and relatives (29.4%). In this study, majority (90.2%) identified syphilis as an STI. HIV/AIDs (98.5%), Gonorrhoea (88.3%), Hepatitis B and C (89.4%), were also identified by the students as forms of STIs. On the signs and symptoms of STIs, Genital itches (83.8%), abnormal vaginal/urethral discharge (95.5%), painful sexual intercourse (89.4%), genital sores (83.8%), painful urination (89.1%) were identified. Risk factors as identified by the study participants included; sex without a condom (91.7%), multiple sex partners (72.5%), same-sex (58.1%), and patronage of sex workers (86.0%). Majority of the students were aware that STIs could be transmitted through vaginal intercourse (88.3%), anal intercourse (92.5%), oral sex (87.5%), blood transfusion (95.5%), breastfeeding (96.2%), vertical transmission (92.8%), and use of public washrooms (86.8%). A very high proportion (92.5%) of the students believed avoiding perinatal sex could prevent one from getting STIs, 98.1% mentioned using condoms, screening/testing (83.4%), reporting to the hospital early (92.8%), vaccine uptake (66.0%) and maintaining a faithful relationship (80.5%) were all recognized by students as prevention and control measures against STIs (Table 3).

Table 3: Knowledge on Sexual Transmitted Infections (STIs) (N=265)

Variable	Category	Yes, N (%)	No, N (%)
Have you heard of STIs		241(90.9)	24(9.1)
Source of information on STIs			
	School	190(71.7)	75(28.3)
	Friends	88(33.2)	177(66.8)
	Media (TV, Radio & Internet)	109(41.1)	156(58.9)
	Relatives	78(29.4)	187(70.6)
Examples of STIs			
	Syphilis	239(90.2)	26(9.8)
	HIV/AIDS	261(98.5)	4(1.5)
	Pneumonia	32(12.1)	233(87.9)
	Chancroid	47(17.7)	218(82.3)
	Chlamydia	126(47.5)	139(52.5)
	Gonorrhoea	234(88.3)	31(11.7)
	Hepatitis B & C	237(89.4)	28(10.6)
	Tuberculosis	44(16.6)	221(83.4)
	Measles	52(19.6)	213(80.4)
	Trichomoniasis	53(20.0)	212(80.0)
Signs and symptoms of STIs			
	Genital itches	222(83.8)	43(16.2)
	Vomiting	31(11.7)	234(88.3)
	Abnormal vaginal/urethra discharge	253(95.5)	12(4.5)
	Painful sexual intercourse	237(89.4)	28(10.6)
	Genital sores	222(83.8)	43(16.2)
	Dizziness	76(28.7)	189(71.3)
	Persistent cough	22(8.3)	234(91.7)
	A burning sensation upon urination	236(89.1)	29(10.9)
Risk factors of STIs			
	Sex without condom	243(91.7)	22(8.3)
	Multiple sex partners	192(72.5)	73(27.5)
	Same-sex (Gays/Lesbianism)	154(58.1)	111(41.9)
	Patronage of sex workers	228(86.0)	37(14.0)
	Uncircumcised penis	223(84.2)	42(15.8)
	Alcohol intake	178(67.2)	87(32.8)
	Sharing personal items with infected persons	235(88.7)	30(11.3)
Mode of STIs transmissions			
	Vaginal intercourse	234(88.3)	31(11.7)
	Anal intercourse	245(92.5)	20(7.5)
	Oral intercourse	232(87.5)	33(12.5)
	Use of public washrooms	230(86.8)	35(13.2)
	Blood transfusion	253(95.5)	12(4.5)
	Breastfeeding	255(96.2)	10(3.8)
	Handshaking	44(16.6)	22(83.4)

Vertical transmission	246(92.8)	19(7.2)
Prevention and control measures against STIs		
Avoid Perinatal sex	245(92.5)	20(7.5)
Use condoms	260(98.1)	5(1.9)
Screening/Testing	221(83.4)	44(16.6)
Report to the hospital early	246(92.8)	19(7.2)
Vaccinations	175(66.0)	90(34.0)
Maintain faithful relationships	214(80.8)	51(19.2)

Overall Knowledge Level of Respondents on STIs

On the overall knowledge on STIs, three out of four (75%) study respondents had sufficient knowledge on STIs whereas only 25% had insufficient knowledge on STIs (figure 1).

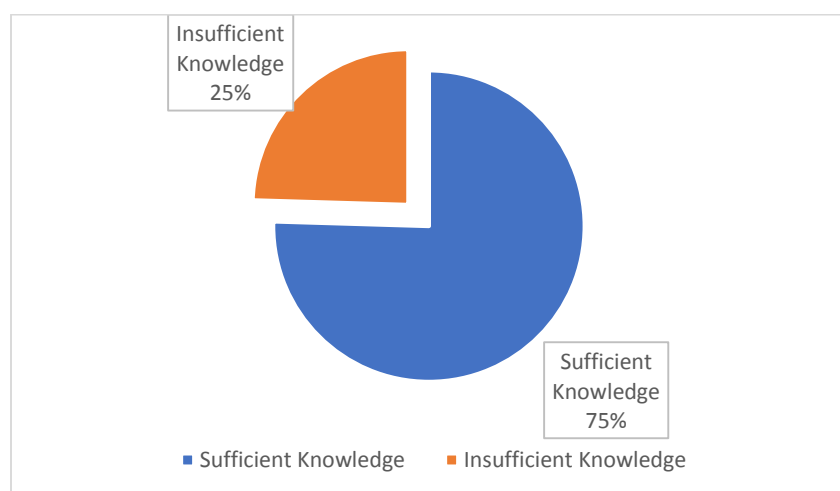


Figure 1: Overall knowledge of students on STIs

Association between Socio-Demographics and Overall Knowledge of Students on STIs.

A Pearson chi-square between socio-demographics and overall students' knowledge on STIs revealed that; program of study ($X^2=7.6$, $p=0.023$), gender ($X^2=3.93$, $p=0.047$), and age ($X^2=22.3$, $p=0.039$) were statistically associated with students' knowledge (Table 4).

Table 4: Association between socio-demographics and overall knowledge of students on STIs.

Variables	Categories	Insufficient, n (%)	Sufficient, n (%)	Statistical test
Program of study	RGN	41(27.0)	111(73.0)	$X^2=7.6$ $p=0.023$
	RMN	15(34.1)	29(65.9)	
	RNAC	9(13.0)	60(87.0)	
Level of study	Year 1	24(22.9)	81(77.1)	$X^2=0.55$ $p=0.76$
	Year 2	25(24.3)	78(75.7)	
	Year 3	16(28.1)	41(71.9)	
Gender	Female	23(18.9)	99(81.1)	$X^2=3.93$ $p=0.047$
	Male	42(29.4)	101(70.6)	
Age	<25 years	40(21.9)	143(78.1)	$X^2=22.3$ $p=0.039$
	≥ 25 years	25(30.5)	57(69.5)	

Religion	Christian	33(28.9)	81(71.1)	$X^2=2.1$ p=0.146
	Islam	32(21.2)	119(78.8)	
Where you grow up	Rural	23(21.1)	86(78.9)	$X^2=1.18$ p=0.28
	Urban	42(26.9)	114(73.1)	
Watching pornographic	Yes	8(40.0)	12(60.0)	$X^2=2.80$ p=0.094
	No	57(23.3)	188(76.7)	
Have you used a condom	Yes	19(27.4)	78(80.4)	$X^2=2.02$ p=0.16
	No	46(27.4)	122(72.6)	

RGN-Registered general nurse, RMN-Registered Mental Nursing, RNAC-Registered Nurse Assistant Clinical.

Factors Influencing the Knowledge of Students on STIs

The odds of sufficient knowledge on STIs for students pursuing Registered Mental Nursing (RMN) was 3 times that of those studying RNAC program (AOR=3.4, 95%CI=1.23 – 9.55, p-value=0.019). Respondents aged ≥ 25 years were 1.8 times more likely to have sufficient knowledge compared with those below 25 years (AOR=1.8, 95%CI=1.19 – 3.38, p=0.047) (Table 5).

Table 5: Factors influencing the knowledge of STIs

Factors	Category	AOR (95% CI)	p-value
Program of study	RNAC		
	RGN	1.4(0.66-2.95)	0.39
	RMN	3.4(1.23-9.55)	0.019
Gender	Female		
	Male	1.2(0.6-2.38)	0.64
Age	<25 years		
	≥ 25 years	1.8(1.19 -3.38)	0.047
Religion	Islam		
	Christian	1.6(0.87-2.94)	0.13
Watch pornographic	Yes		
	No	0.24(0.01-1.28)	0.34

AOR-Adjusted odd ratio, RGN-Registered general nurse, RMN-Registered Mental Nursing, RNAC-Registered Nurse Assistant Clinical

Discussion

Several studies have found that sexually transmitted infections (STIs) cause a wide range of difficulties and lead to poor sexual and reproductive health, as a result of treatment delays caused by lack of understanding on STIs [15,16]. Knowledge of STIs may have a significant impact on health-seeking behaviours [17]. Based on the aforesaid circumstances, we set out to assess the knowledge on STIs and sexual practices among health trainees in Yendi Municipality, Northern Region of Ghana.

In this study, about 91.0% (nine in every ten) students had heard about STIs. The current findings are lower than 99.3% reported in Greater Accra, Ghana [35], over 96% in the Gambia [36], and 92.4% reported in Nigeria [20]. However, the current finding is greater than 83.3% reported in Bahir Dar City, Ethiopia [37]. Though there is no wide variation in the findings presented above, the slight differences could be attributed to personal behaviours and geographical differences.

Majority of students (71.7%) had heard of STIs from school. This is corroborated by a study conducted in Greater Accra, Ghana where 77.1% of respondents were said to have heard of STIs from school [35]. Contrary to the above, only 33.6% of study participants heard of STIs in schools in another study [37]. This is because these participants were students of a health training institution, and would have been taught in the course of their coursework. In the study conducted by Ayele et al., [37], the study participants were not health trainees and that could be the causative factor for the huge differences together with the different geographical locations. In relation to the above, in Gambia, a greater portion of participants we said to have heard of STIs from healthcare professionals [36]. This also goes to support the need to intensify the education of health trainees on STIs, since a considerable proportion of the population relies on health workers for information on Sexuality and Reproductive Health (SRH) issues. In a study conducted in the Tamale metropolis of Northern Ghana, Abdul-Wahab & Nungbaso, [26] demonstrated that health professionals play a pivotal role in the dissemination of information regarding SRH.

Also, on the sources of information on STIs, most undergraduates in Malaysia have heard of STIs from the internet [38], in Nigeria, Second cycle institution students have heard of STIs via Media and Television [20], and in Ado-Ekiti, Nigeria, 62.5% have heard of STIs via the media [39]. There is a variety of information in the media concerning STIs. This information can be misleading or a blessing at the same time depending on the user's ability to identify what is considered authentic information. In this study, about 40% of the students have heard of STIs from the media (print and electronic). Whilst the media is a great tool in creating awareness, we suggest that qualified people should be made to educate the population on radio and television stations. This will inform the population on how to identify the right information on the internet as well.

The overall knowledge of STIs as reported in this study was observed to be higher than most studies. In the current study, overwhelmingly, three out of four students (75%) demonstrated appreciable knowledge of STIs. This finding is higher than 64.0% reported in Ireland[40]. In Northwest Ethiopia, 55.3% of the undergraduate students had good knowledge of STIs [41], also, in Bahir Dar City, Ethiopia only 24.8% of the Night School Students were said to have good knowledge on STIs [37], 39.1% of the college students in Southwest Ethiopia were said to have appreciable knowledge on STIs [28]. Another survey found that 53 percent [25] and 49 percent [42] of university students in Malaysia's central zone and university students in Thailand,

respectively, had a good understanding of STIs. In South Africa, 70.1% of respondents were said to be knowledgeable [22]. On the other hand, the current finding on overall knowledge on STIs is lower than other studies. For instance, approximately 90% of survey respondents in Brazil [23], 86.3% in Imperatriz-Maranhao, Brazil [43], 93.9% in Gambia [36], 78% in Malaysia [38] Bangladesh (76.0%) [24], 91.25% among Turkish population [44], and 87% in Malaysia [25] displayed substantial knowledge on STIs. STIs were found to be well-understood by about 99 percent of college students [9]. The variations between this study and others might be attributable to changes in methodology, sample size, and operational definition. Aside from the sociodemographic, and behavioral features of the research participants, the difference seen might be due to a variety of factors including but not limited to personal conduct, information availability, and school environment. In this study, the pass mark was set to be higher than most studies reported above, we believe, this could have contributed immensely to the differences.

Being a mental health student, the male gender, and being older than 25 years was significantly associated with knowledge on STIs in this study. Contrary to this study, midwives were said to have higher knowledge on STIs compared to other healthcare providers [45] citing their familiarity with reproductive health as part of their work. Similarly, other studies have confirmed the influence of gender on participants' knowledge of STIs [26,46]. Being a male in this study and that of Ajmal, et. al.[46] were significantly associated with knowledge of STIs probably because males rather than females could discuss STI issues freely [26,46]. Young people within the ages 19-24 years are often associated with STI [30] probably because this age group is sexually active [29]. It is therefore not surprising that, respondents' age had a significant influence on their knowledge. This is probably due to a higher tendency for the older ones to experience STIs, therefore, having some practical knowledge in comparison with their younger colleagues.

In the current study, researchers did not establish a significant association between education status and knowledge on STIs. Other studies [26,30,47,48] have shown no association between the level of study and knowledge on STIs. Contrary to the above, educational level was identified as influential to the awareness of sexually transmitted diseases among respondents in the Ghanaian studies [30,49]. This could be because as health trainees' knowledge and information on STIs is readily available and as such irrespective of their stage, they are constantly exposed to information on health including STIs.

Similar to a study in Accra [30], the tendency for a sufficient level of knowledge on STIs among Christians was 1.6 times more than that of Muslims. This is contrary to a study in a similar environment among different groups [26] where Muslims were 1.8 times likely to have sufficient knowledge than Christians. This underscores the very vital role religion plays in health and therefore a basis for religion to be factored in planning various Sexuality and Reproductive Health (SRH) programs.

Conclusion

Knowledge on Sexually Transmitted diseases among health trainees in the Yendi Municipality was appreciable. Religion was also identified as an important player in education and STI awareness creation. The media was found to be a great tool in creating awareness but could be a source of misguidance if the individual is not qualified.

Recommendation

We recommend that there is the need for stakeholders including, the Ministry of Health, Ghana Health Service, Islamic Medical Association of Ghana (IMAGH), Christian Health Association of Ghana (CHAG) and Tutors of health training institutions to re-evaluate the current interventions, protocols, and information on Sexual Reproductive Health to address increasing prevalence of STIs.

Intensifying education on Sexual Reproductive Health (SRH) and specifically on STIs at the pre-tertiary level (Junior and Senior High Schools) will equip individuals including health trainees with the required knowledge on STIs. For students in Tertiary schools, seminars and focus group discussions would help them brainstorm and bring out better strategies to disseminate health-related information to their clients.

We suggest that qualified people should be made to educate the population on radio and television stations. This should be ensured by the National Media Commission and the Ministry of Health of Ghana and its affiliates.

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