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Research Article

Prevalence and Management of Sexually Transmitted Infections in Community Pharmacies in Yenagoa Bayelsa State: A Potentially Under-Utilized HIV Prevention Strategy

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ABSTRACT

Sexually transmitted infections (STIs) are mainly transmitted from person-to-person mostly through sexual contact. There are several microorganisms that account for STIs such as bacteria, viruses, and parasites. This study investigated prevalence, pattern of STIs treatment, knowledge, and awareness of STIs among the community pharmacists. A purposive or judgmental sampling technique was used to recruit the community Pharmacist (CPs). Self – report questionnaire, was employed as research tools to achieve the objectives of the study. Ethical approval and permissions were approved by the Bayelsa State Ministry of Health, Ethics Committee, and Community Pharmacist Association, Bayelsa State Chapter. One hundred and thirty (n = 130) questionnaires were given out, and 126 questionnaires were retrieved. The participants were mostly within the age range of 30 to 40 years. There was high prevalence of STIs. Most of the participants had awareness of the antimicrobials to use as treatment of STIs. There was no statistically significant difference between years of practice and use of antimicrobial in treating STIs ($p = 0.68$). Ceftriaxone, Azithromycin and ciprofloxacin were the most used antibiotics always for the treatment of STIs. Single dose of ceftriaxone was often recommended. Common STIs reported were Gonorrhea and genital wart. There was no statistically significant difference between years of practice and those reported Gonorrhea and genital warts as the most treated STIs ($p = 0.44$). The younger age group (18 to 34 years) were most affected with STIs, and the female proportion was the highest with STIs. There was a statistically significant difference the those with longer practice experience and those that had few years of practice experience that reported the younger age group was most affected with STIs ($p <0.0001$). STIs most common side effect reported was genital ulcer and pain in the lower abdomen. The CPs often provided pharmaceutical services to their patients with STIs. There was a statically significant difference with those CPs that provided pharmaceutical service and those who did not provide the above related services ($p < 0.005$). The study clearly demonstrated high

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prevalence of STIs, adequate knowledge of STIs and the treatment of STIs was antimicrobial. There is need for enlightenment campaign among the CPs on the need to follow standard treatment guidelines (STGs) to treat patients with STIs. Also, the need to educate the public on the modes of transmission, prevention and providing information on accessing of condoms are recommended to reduce sexually transmitted infection. Lastly, the use of STGs for the management of STIs should be encouraged among the CPs.

Keywords: sexually transmitted infections, Community Pharmacist, Bayelsa, Yenagoa

INTRODUCTION

Sexually transmitted infections are caused by a wide variety of bacteria, viruses, and parasites that are transmitted from one person to another mostly by vaginal, anal, or oral sexual contact. Different sexually transmitted infections (STIs) can be transmitted simultaneously and increases the risk of contracting other types of STIs. Sexually transmitted infections are often oligo- or asymptomatic (Kissinger et al., 2015; WHO 2013; Robert Koch, 2010). According to the World Health Organization (WHO), sexually transmitted infections are one of the five types of disease for which adults around the world most commonly seek medical help (WHO, 2013). The report on prevalence of STls in Germany is inconclusive except for human immunodeficiency virus (HIV) and syphilis (Robert Koch 2010; Hokororo et al., 2015). Globally, one-third of over 340 million STI cases are underage of 25 years. In a low-income country such as sub-Saharan Africa, the burden of STIs is on the increase with 108 million STIs occurring every day. It is estimated that 80 to 90% of the global burden of STIs occur in developing countries; mostly limited to no access to diagnostic facilities and poor awareness (WHO 2015). In 2012, 498.9 and 92.6 million new cases of STIs occurred on the globe and in Africa, respectively. Thus, on average, about 1.4 million people are infected with STIs every daily (Rowley and Ndowa 2012). In Ethiopia, the highest STIs burden are found among 15–24-year-old, while about half of all of the people infected with HIV and 60% of all new HIV infections are also in that age group (Rowley and Ndowa 2012). About 35% of Ethiopian population comprised young people between 15 and 24 years of age, and this largest category is highly vulnerable to STIs (Tilahun and Demissie 2007). In a STIs surveillance study conducted in 8 health facilities in various regions of Ethiopia, younger people in the age group of 20 to 34 years were among highly affected ones (68.2%) (Ralph et al., 2000). Sexually transmitted infections are implicated in neonatal damage, genital neoplasia, infertility, and fatality. A number of diagnostic strategies and tests, of variable quality, are available for the individual pathogens (Kissinger 2014).

The pathophysiology and therapeutic algorithms for a symptomatic patient can generally be tailored to the leading clinical manifestations. Thus, sexually transmitted infections can usefully be classified by their clinical and presenting features, as follows: Genital, anal, perianal, or oral ulcers Urethral or vaginal discharge, Genital warts, HIV or hepatitis C virus (HCV) infection (Beckmann et al., 2015). The treatment of STIs focus is to cure the infection in the individual patient as rapidly as possible, and to eliminate contagiousness as rapidly as possible in order to interrupt the chain of transmission and to prevent reinfection and recurrent infection. The treatment of STIs is antimicrobial (Abele-Horn et al.; 2011; Bremer et al., 2015). Therefore, this study was aimed to determine the prevalence, pattern of STIs treatment, knowledge, and awareness of STIs among community pharmacists.

Key words: Community pharmacist, Bayelsa State, Yenagoa, Ceftriaxone, Azithromycin and ciprofloxacin.

METHOD

Study Setting/ Population

This study was carried out among Community Pharmacies (CPs) in Bayelsa State, Nigeria. The CPs are the government approved pharmacy stores with a pharmacist as the superintendent pharmacist that directs all activities in the pharmacy. In Nigeria (particularly in Bayelsa State) the number of community pharmacies are restricted due to the limited number of community pharmacists (Pharmacist Council of Nigeria, Bayelsa State office 2019). The community pharmacies in Bayelsa State, have a minimum of three or more staff and are mostly retail and wholesale outlets (Pharmacist Council of Nigeria, Bayelsa State office 2019).

Study Design /Sampling techniques

A purposive or judgmental sampling technique (Sarma 2015; Singh and Masuku, 2012) was used to recruit the community Pharmacists (CPs). Self – report questionnaire, was employed as research

tools to achieve the objectives of the study. It was designed from validated tools, published articles, and covered STIs prevalence and management The questionnaire was given to the CPs, after seeking their consent. Of the total (165) CPs, the survey was carried out among 130 CPs in Bayelsa State, Nigeria. There was no bias for sex, religion, marital status, age, and ethnicity.

Data Collection Instrument

A well-structured questionnaire which comprises four sections. The first section, inquired about the respondents' demographic/personal data; the second section investigated the prevalence and pattern of STIs treatment, the third section investigated knowledge of STIs among CPs and the last section retrieved information about management of STIs among community pharmacy in Bayelsa State, Nigeria.

Method of Data Analysis

The retrieved questionnaires were carefully analyzed using statistical package for social science (SPSS) version 27 and graph pad. The data generated were descriptive with some inferential statistics.

Ethical considerations

This study, complied with all ethical considerations involving human subjects, as adopted in the 18th World Medical Assembly, Helsinki, Finland, the Community Pharmacist Association and Bayelsa State Ministry of Health, Ethics Committee.

Ethical approval and permissions

This study was approved by the Bayelsa State Ministry of Health, Ethics Committee, Community Pharmacist Association, Bayelsa State Chapter gave approval to undertake this study among the CPs.

RESULTS

Three hundred and thirty (n = 130) questionnaires were given out, and 126 questionnaires were retrieved giving a response rate of 98%. The participants were mostly within the age range of 30 – 40 years. Male CPs were more common with those who were married. The CPs were mostly B Pharm holders with a practice experience of 1 to 5 years in the community pharmacy. The majority of the CPs have worked in their current community pharmacy in the last 2 to 4 years. This was closely followed by those who have worked in the community pharmacy from 1 to 2 years. See table 1 for details. All the antimicrobial agents listed in table (2) below were sometimes or always used as treatment of STIs. There was no statistically significant difference between years of practice and use of antimicrobial in treating STIs ($p = 0.68$). Participants had knowledge of the antimicrobials to use as treatment of STIs. Ceftriaxone, Azithromycin and ciprofloxacin were the most used antibiotic always for the treatment of STIs as reported by the participants. Single dose of ceftriaxone was often recommended. See table 2 for details.

Most of the CPs reported that they were aware of the STIs syndromic management and their source of information on STIs management were from radio and television. A total of 54 CPs disagreed that STIs are gotten from needle and syringe, blood, sharing the same plate with infected person, sharing the same toilet, and mother to child, rather than unprotected sex. See details in table 3.

The CPs reported that most common cases of STIs are always gonorrhea and genital wart, but STIs are sometimes caused by other organisms. There was no statistically significant difference between years of practice and those reported gonorrhea and genital warts as the most treated STIs ($p = 0.44$). The participants reported 16 to 25 cases of STIs daily. There was no significant difference between gender and the cases of STIs reported ($p = 0.48$). The younger age group (18 to 34 years) were most affected, and the female were the most affected. There was a statistically significant difference in those with longer practice experience and those that had few years of practice experience that reported younger age group was most affected with STIs ($p < 0.0001$). The CPs reported that the most common presentations of STIs were genital ulcer, vaginal discharge, and pain in the lower abdomen. See details in table 4. The CPs often provided advice on revisit to the pharmacy sometimes if patients' symptoms persisted. Also counseling for HIV patients was mostly done sometimes. There was a statistically significant difference with those CPs that provided pharmaceutical services and those who did not provide the above related services ($p < 0.005$). Always the CPs referred patients with failed treatment of STIs. CPs strongly agree that they are well trained to manage patients with STIs. CPs poorly followed the STGs by WHO in managing STIs. See table 4 for details.

DISCUSSION

This study investigated STIs prevalence, pattern of treatment and knowledge of STIs among CPs in Bayelsa State, South-South Nigeria. Here, the overall findings and inferences drawn from all data generated are discussed.

The CPs reported 16 to 25 cases of STIs daily. There was no significant difference between gender and the cases of STIs reported ($p = 0.48$). This implies high prevalence of STIs in the study

community. This is predicated on multiple sex partners, non-use of condom and poor knowledge on STIs among the patients. In 1996, WHO generated a new set of global estimates for four major STIs from published and unpublished prevalence data. These findings estimated 333 million new cases of syphilis, gonorrhoea, chlamydia, and trichomoniasis in adults aged 15 to 49 years in 1995: 12·2 million cases of syphilis, 62·2 million cases of gonorrhoea, 89·1 million of chlamydia, and 167·2 million of trichomoniasis. STIs was reported in south and Southeast Asia (45·6%), followed by sub-Saharan Africa (19·7%), and then Latin America and the Caribbean (10·9%). Lastly, a study carried out by Belayneh, et al., (2019) in Ethiopia among 845 University students reported 18.20% (95% CI,15.40,20.80) prevalent rate of STIs. The above figures indicate high prevalence of STIs as shown in this study.

STIs are treated with antimicrobials. There was no significant difference between years of practice and pattern of STIs treatment ($p = 0.68$). Its treatment must follow Standard Treatment Guidelines (STGs) as reported in 1993 Centers for Disease Control (CDC) guidelines. Also, in 1998, the Centers for Disease Control and Prevention released guidelines for the treatment of sexually transmitted diseases. The STGs recommended two single-dose regimens, 1 g of oral azithromycin and 250 mg of intramuscular ceftriaxone, are effective for the treatment of chancroid. A three-day course of 500 mg of oral ciprofloxacin twice daily may be used to treat chancroid in patients who are not pregnant. Parenteral penicillin continues to be the drug of choice for treatment of all stages of syphilis. Three antiviral medications have been shown to provide clinical benefit in the treatment of genital herpes such as acyclovir, valacyclovir famciclovir. Valacyclovir and famciclovir are not yet recommended for use during pregnancy. Azithromycin in a single oral 1-g dose is now a recommended regimen for the treatment of non-gonococcal urethritis (Oskar et al., 2020. Carol and Melanie, 1999). STIs treatment is based on the causative microorganism. For instance, Syphilis is a systemic disease caused by the sexual transmission of *Treponema pallidum* and commonly treated with penicillin G. Also, in the case of *gonorrhoeae* doxycycline and Azithromycin is used for treatment. Similar medications are used for Urethritis which is an infection characterized by mucopurulent or purulent discharge and burning during urination. Furthermore, genital herpes is a recurrent, incurable viral disease and is treated with acyclovir. Lastly, genital ulcer is treated with ciprofloxacin, azithromycin, ceftriaxone, and erythromycin (Emdex 2021; Oskar et al., 2020; Richard et al., 2010;; Carol and Melanie, 1999). The above regimens for specific STIs related above were not different from this study findings. Ceftriaxone and Azithromycin were the most used antibiotic always for the treatment of STIs as reported by the participants. This might be connected to their broad effectiveness in treating STIs. Single dose of ceftriaxone was often recommended. This agreed with Carol and Melanie, 1999 study carried out in West Virginia University Hospitals, Morgantown, West Virginia.

Most of the CPs reported that they were aware of the STIs syndromic management and their source of information on STIs management were from radio and television. CPs strongly agreed that they are well trained to manage patients with STIs. This is expected as they were well trained in their undergraduate and must have gained a lot of experience considering their long practice in the community pharmacies**.** This study finding correlated with a survey carried out in Lagos by Arinola Joda in 2013 among community pharmacist which reported awareness of STIs syndromic management. This is not different from a study carried out in Ghana among community pharmacists that reported adequate knowledge of STIs management (Susannah et al., 2001). In like manner Yi wen et al., 2009 study carried out in Fuzhou, China agreed with this study findings. Although, the findings by Chalker et al., (2000) was not in agreement with this study findings.

Regarding method of transmission of STIs, a total of 54 CPs reported it is often through unprotected sex than other means. This was similar to a study carried out by Amu and Adegun (2015) in Ado Ekiti Southwestern Nigeria. This study findings corroborated with World Health Organization (WHO). Global Strategy for the Prevention and Control of Sexually Transmitted Infections: 2006 to 2015. Geneva, Switzerland: World Health Organization; 2007 reporting STIs through vaginal, oral, and anal sexual contacts. Workowski and Bolan 2013 study was not different from this study reporting that STIs are mainly transmitted from person-to-person through sexual contact (Workowski and Bolan 2013). However, there are several microorganisms that account for STIs such as bacteria, viruses, and parasites as related earlier. There are over 30 STIs including gonorrhea, chlamydial infection, syphilis, trichomoniasis, chancroid, genital herpes, human immunodeficiency virus (HIV) infection, and hepatitis B infection. Some of the above can also be transmitted vertically from mother to child during pregnancy as well as through blood products. Some of these STIs namely, syphilis, gonorrhea, chlamydia, and trichomoniasis, have been found to be curable (WHO Incident 2008 and 2015). STIs are a major cause of acute illness,

infertility, long-term disability, and death with serious medical and psychological consequences among millions of individuals (WHO 2008). Both ulcerative and inflammatory curable STIs increase the risk of acquiring and transmitting HIV by up to two- to threefold (Hayes et al., 2010).

The CPs reported that the most common cases of STIs are always gonorrhea and genital wart among other STIs. There was no statistically significant difference between years of practice and those that reported Gonorrhea and genital warts as the most treated STIs ($p = 0.44$). The reason for this is unknown and this required further investigations. However, these findings might be connected to the causative microorganisms most likely located or found in the male or female genital organs. This is consistent with other studies carried out in Europe, USA and more common in Africa and Nigeria. (Gwenda and Nigel 2015; Amu and Adegun 2015). The younger age group (18 to 34 years) were most common, and the female were the most affected. This corroborated with Ralph et al., (2000) study conducted in 8 health facilities in various regions of Ethiopia, younger people in the age group of 20 to 34 years were among highly affected ones. The above related findings might be connected to patients' perception, attitude, and awareness of STIs. There was a statistically significant difference in those with longer practice experience and those that had few years of practice experience that reported younger age group as the most affected with STIs ($p < 0.0001$). This was often reported by CPs with the higher years of practice experience. Their long experience in practice coupled with more training must have informed this outcome. The younger age group are likely to practice unprotected sex, have multiple sexual partners, and have trans generational and transactional sex. In addition, they may have problems getting the required information, services, and supplies they need to avoid STIs. They may also experience difficulties in accessing STIs prevention services because they do not know where to find them, do not have transportation to get there, or cannot pay for the services. Also, even if they can obtain STI prevention services, they may not feel comfortable in places that are not youth friendly. Furthermore, females are more prone to STIs. This might be attributed to the anatomy of the female making them more vulnerable to STIs (Oskar et al., 2020; Gwenda H. and Nigel 2015; Amu and Adegun 2015). The female cervical lining makes them more predisposed to STIs. Likewise, poor information on STIs prevention may have impacted on this reported high infection of STIs among the female counterparts. The CPs reported that the most common presentations with STIs were genital ulcer, vaginal discharge, and pain in the lower abdomen. The CPs often provided advice on revisit to the pharmacy sometimes if patients' symptoms persisted. Also counseling for HIV patients was mostly done sometimes. There was a statistically significant difference with those CPs that provided pharmaceutical services and those who did not provide the above related services ($p < 0.005$). This is expected as they were adequately trained healthcare professionals. Patients were reportedly satisfied with pharmaceutical services provided to them (Arinola, 2013). Always the CPs referred patients with failed treatment of STIs. This has been reported in several literatures specifically in Nigeria and Ghana of the need of community pharmacist participation in management of STIs mostly with urethral discharge as they are well trained to undertake this task. However, they are limited with cases of genital ulcer and should be transferred to medical practitioners and laboratory test for proper management (Arinola, 2013, Susannah et al.,2001). Regarding use of STGs, the CPs poorly followed the STGs by WHO in managing STIs. (Gwenda and Nigel 2015). This might be so because they lack access to the current STGs or are not aware of the specific guidelines on management of STIs in their place of work.

CONCLUSION

This study investigated prevalence and pattern of management of STIs among community pharmacist in Bayelsa State. They reported high prevalence of STIs (18 – 25 cases daily) with the female most affected. The younger age group of 18 to 34 years was more common with STIs. The CPs had adequate knowledge of STIs. The most common STIs were gonorrhea and genital warts. STIs were most treated with Ceftriaxone, Azithromycin and ciprofloxacin among other antimicrobials. The CPs provided pharmaceutical services to the patient with STIs.

Recommendation

There is need to open and strengthen STIs centers on the community pharmacies, popularizing sexual, and reproductive health information and education, particularly on STIs modes of transmission, prevention, and health-seeking behaviors, and providing information on accessing of condoms in order to reduce sexually transmitted infection. Also, the use of STGs for the management of STIs should be encouraged among the CPs.

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Appendix

Table 1: Respondents' Demographic Data

		Frequency	Percent	Valid %	
Valid	less than 30 years	48	34.8	37.5	
	30-40 years	58	42.0	45.3	
	above 40 years	22	15.9	17.1	
	Total	128	92.8		

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	88	63.8	68.8	68.8
	female	40	29.0	31.3	100.0
	Total	128	92.8	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	78	56.5	60.9	60.9
	single	44	31.9	34.4	95.3
	widowed	4	2.9	3.1	98.4
	others	2	1.4	1.6	100.0
	Total	128	92.8	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	B.Pharm.	70	50.7	54.7	54.7
	Pharm.D	20	14.5	15.6	70.3
	M.Parm/M.Sc	12	8.7	9.4	79.7
	PhD. Pharm	4	2.9	3.1	82.8
	Others	22	15.9	17.2	100.0
	Total	128	92.8	100.0	
Missing	System	10	7.2		
Total		138	100.0		

Items	Options	Freq.	%	Valid %	Cum. %
How long have you been in community pharmacy practice?	less than 1 years	28	20.3	21.9	21.9
	1-5 years	56	40.6	43.8	65.6
	5-15 years	36	26.1	28.1	93.8
	15-30 years	8	5.8	6.3	100.0
	Total	138	100.0		
How long have you been working in your current premise as a community pharmacist?	Less than 1 year	22	15.9	17.2	17.2
	1-2 years	30	21.7	23.4	40.6
	2-4 years	40	29.0	31.3	71.9
	4-6 years	20	14.5	15.6	87.5
	above 6 years	16	11.6	12.5	100.0
	Total	138	100.0		

Table 2: PREVELENCE AND PATTERNS Of drugs used in the management of Common STIs

Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Ciprofloxacin	Never	6	4.3	4.7	4.7	3.23	1.20
	Rarely	16	11.6	12.5	17.2		
	sometimes	39	28.3	30.5	47.7		
	often	25	18.1	19.5	67.2		
	always	42	30.4	32.8	100.0		
	Total	128	92.8	100.0			

Azithromycin	never	16	11.6	12.5	12.5	3.38	1.30
	rarely	10	7.2	7.8	20.3		
	sometimes	45	32.6	35.2	55.5		
	often	23	16.7	18.0	73.4		
	always	34	24.6	26.6	100.0		
	Total	128	92.8	100.0			
ceftriaxone	never	4	2.9	3.1	3.1	4.21	1.04
	rarely	5	3.6	3.9	7.0		
	sometimes	19	13.8	14.8	21.9		
	often	32	23.2	25.0	46.9		
	always	68	49.3	53.1	100.0		
	Total	128	92.8	100.0			
Cefixime	never	16	11.6	12.5	12.5	3.31	1.02
	rarely	14	10.1	10.9	23.4		
	sometimes	44	31.9	34.4	57.8		
	often	22	15.9	17.2	75.0		
	always	32	23.2	25.0	100.0		
	Total	128	92.8	100.0			
Spectinomycin	never	24	17.4	18.8	18.8	3.05	1.07
	rarely	20	14.5	15.6	34.4		
	sometimes	33	23.9	25.8	60.2		
	often	27	19.6	21.1	81.3		
	always	24	17.4	18.8	100.0		
	Total	128	92.8	100.0			
Gentamycin	never	9	6.5	7.0	7.0	3.35	1.15
	rarely	19	13.8	14.8	21.9		
	sometimes	42	30.4	32.8	54.7		
	often	34	24.6	26.6	81.3		
	always	24	17.4	18.8	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Doxycycline	Never	19	13.8	14.8	14.8	2.94	1.27
	Rarely	28	20.3	21.9	36.7		
	Sometimes	45	32.6	35.2	71.9		
	Often	14	10.1	10.9	82.8		
	Always	22	15.9	17.2	100.0		
	Total	128	92.8	100.0			
Azithromycin						4.41	.73
	Rarely	2	1.4	1.6	1.6		
	Sometimes	12	8.7	9.4	10.9		
	Often	46	33.3	35.9	46.9		
	Always	68	49.3	53.1	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq	%	Val. %	Cum. %	Mean	Std. Dev.
Benzathine	Unimportant	6	4.3	4.7	4.7	3.63	1.20
	slightly important	16	11.6	12.5	17.2		
	moderately important	39	28.3	30.5	47.7		
	Important	25	18.1	19.5	67.2		
	Very important	42	30.4	32.8	100.0		
	Total	128	92.8	100.0			
benzylpenicillin	Unimportant	16	11.6	12.5	12.5	3.31	1.30
	slightly important	14	10.1	10.9	23.4		
	moderately	44	31.9	34.4	57.8		

	important						
	Important	22	15.9	17.2	75.0		
	Very important	32	23.2	25.0	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Your level of awareness that the same drugs used for management of urethra discharge can also be used for syndromic management of scrotal swelling	not at all aware	2	1.4	1.6	1.6	4.14	1.04
	slightly aware	10	7.2	7.8	9.4		
	moderately aware	20	14.5	15.6	25.0		
	very aware	32	23.2	25.0	50.0		
	extremely aware	64	46.4	50.0	100.0		
	Total	128	92.8	100.0			
How important is metronidazole in syndromic treatment of vagina discharge?	unimportant	13	9.4	10.2	10.2	3.82	1.33
	slightly important	6	4.3	4.7	14.8		
	moderately important	29	21.0	22.7	37.5		
	important	22	15.9	17.2	54.7		
	Very important	58	42.0	45.3	100.0		
	Total	128	92.8	100.0			
Tinidazole and metronidazole are the drug options specific for the treatment of Trichomoniasis vaginosis.	strongly disagree	5	3.6	3.9	3.9	4.19	1.16
	disagree	10	7.2	7.8	11.7		
	neutral	15	10.9	11.7	23.4		
	agree	24	17.4	18.8	42.2		
	strongly agree	74	53.6	57.8	100.0		
	Total	128	92.8	100.0			
How frequently do you recommend a single dose ceftriaxone plus metronidazole 400mg orally bd for 14 days in the treatment of lower abdominal pain?	never	1	.7	.8	.8	3.83	1.06
	rarely	15	10.9	11.7	12.5		
	sometimes	32	23.2	25.0	37.5		
	often	37	26.8	28.9	66.4		
	always	43	31.2	33.6	100.0		
	Total	128	92.8	100.0			
How frequent do you use kanamycin and spectinomycin in management of neonatal conjunctivitis	never	9	6.5	7.0	7.0		
	rarely	19	13.8	14.8	21.9		
	sometimes	42	30.4	32.8	54.7		
	often	34	24.6	26.6	81.3		
	always	24	17.4	18.8	100.0		
	Total	128	92.8	100.0			

Table 3: **Knowledge and Awareness on STI Treatment**

Items	Options	Freq.	%	Valid %	Cum. %
Describe your level of awareness/ of STI Syndromic Management	slightly aware	8	5.8	6.3	6.3
	moderately aware	18	13.0	14.1	20.3
	very aware	58	42.0	45.3	65.6

	extremely aware	44	31.9	34.4	100.0
	Total	138	100.0		
Your source(s) of information/ awareness	Radio	32	23.2	25.0	25.0
	Television	36	26.1	28.1	53.1
	Newspaper	26	18.8	20.3	73.4
	Journals	4	2.9	3.1	76.6
	seminars/workshop	2	1.4	1.6	78.1
	health worker	10	7.2	7.8	85.9
	teaches/lecturers	6	4.3	4.7	90.6
	Undergraduate	6	4.3	4.7	95.3
	post graduate	6	4.3	4.7	100.0
	Total	138	100.0		

Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
From needles and syringes	SA	12	8.7	9.4	9.4	3.92	1.23
	A	8	5.8	6.3	15.6		
	N	6	4.3	4.7	20.3		
	D	54	39.1	42.2	62.5		
	SD	48	34.8	37.5	100.0		
	Total	128	92.8	100.0			
Blood and blood products	SA	6	4.3	4.7	4.7	4.16	1.04
	A	6	4.3	4.7	9.4		
	N	6	4.3	4.7	14.1		
	D	54	39.1	42.2	56.3		
	SD	56	40.6	43.8	100.0		
	Total	128	92.8	100.0			
sharing the same plate with the infected person	SA	4	2.9	3.1	3.1	1.75	.92
	A	4	2.9	3.1	6.2		
	N	6	4.3	4.7	10.9		
	D	56	40.6	43.8	54.7		
	SD	58	42.0	45.3	100.0		
	Total	128	92.8	100.0			
unprotected sexual intercourse	SA	49	35.5	38.3	38.3	4.23	.69
	A	60	43.5	46.9	88.2		
	N	19	13.8	14.8	100.0		
	D	0	0	0	0		
	SD	0	0	0	0		
	Total	128	92.8	100.0			
From mother to child	SD	3	2.2	2.3	2.3	3.11	.74
	D	15	10.9	11.7	14.1		
	N	78	56.5	60.9	75.0		
	A	28	20.3	21.9	96.9		
	SA	4	2.9	3.1	100.0		
		128	92.8	100.0			
From sharing the same toilet with the infected person	SA	18	13.0	14.1	14.1	2.03	1.09
	A	20	14.5	15.6	29.7		
	N	30	21.7	23.4	53.1		
	D	60	43.5	46.9	100.0		
	SD	128	92.8	100.0			
Exposure to cough and sneeze from	SA	0	0	0	0	1.23	.87
	A	12	8.7	9.4	9.4		

infected person	N	18	13.0	14.1	23.4		
	D	52	37.7	40.6	64.1		
	SD	46	33.3	35.9	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Familiarity with and the use of WHO syndromic STIs treatment guidelines	NF	10	7.2	7.8	7.8	2.57	.77
	SF	47	34.1	36.7	44.5		
	MF	59	42.8	46.1	90.6		
	VF	12	8.7	9.4	100.0		
		128	92.8	100.0			
what is your level of agreement to follow these WHO guidelines on STIs syndromic management	SD	0	0	0	0	4.92	.27
	D	0	0	0	0		
	N	0	0	0	0		
	A	10	7.2	7.8	7.8		
	SA	118	85.5	92.2	100.0		
		128	92.8	100.0			
what is your opinion on the current roles practice by community pharmacies on STIs syndromic management as approved by WHO?	FBS	94	68.1	73.4	73.4	1.31	.56
	BS	28	20.3	21.9	95.3		
	MS	6	4.3	4.7	100.0		
	AS	0	0	0	0		
	FAS	0	0	0	0		
		128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Cases of STIs are common among males	SD	0	0	0	0	2.48	.78
	D	0	0	0	0		
	N	0	0	0	0		
	A	10	7.2	7.8	7.8		
	SA	118	85.5	92.2	100.0		
	Total	128	92.8	100.0			
Cases of STIs are likely common among females	SD	94	68.1	73.4	73.4	4.27	.92
	D	28	20.3	21.9	95.3		
	N	6	4.3	4.7	100.0		
	A	0	0	0	0		
	SA	0	0	0	0		
	Total	128	92.8	100.0			
Age range of male STI patients encountered	0-13 years	76	55.1	59.4	59.4	Nil	Nil
	18-34 years	39	28.3	30.5	89.8		
	35- 59 years	13	9.4	10.2	100.0		
	Total	128	92.8	100.0			
	0-13 years	64	46.4	50.0	50.0		
	18-34 years	43	31.2	33.6	83.6		
	35- 59 years	21	15.2	16.4	100.0		
	Total	128	92.8	100.0			
How many STI cases do you encounter each week	1-5 cases	0	0	0	0	Nil	Nil
	6-10 cases	5	3.6	3.9	3.9		
	11-15 cases	5	3.6	3.9	7.8		
	16-25 cases	62	44.9	48.4	56.3		
	26-40	56	40.6	43.8	100.0		

	cases						
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Cases of STIs are common among males	SD	0	0	0	0	2.48	.78
	D	0	0	0	0		
	N	0	0	0	0		
	A	10	7.2	7.8	7.8		
	SA	118	85.5	92.2	100.0		
	Total	128	92.8	100.0			
Cases of STIs are likely common among females	SD	94	68.1	73.4	73.4	4.27	.92
	D	28	20.3	21.9	95.3		
	N	6	4.3	4.7	100.0		
	A	0	0	0	0		
	SA	0	0	0	0		
	Total	128	92.8	100.0			
Age range of male STI patients encountered	0-13 years	39	55.1	59.4	59.4	Nil	Nil
	18-34 years	79	28.3	30.5	89.8		
	35- 59 years	13	9.4	10.2	100.0		
	Total	128	92.8	100.0			
Age range of female STI patients encountered	0-13 years	64	46.4	50.0	50.0		
	18-34 years	43	31.2	33.6	83.6		
	35- 59 years	21	15.2	16.4	100.0		
	Total	128	92.8	100.0			
How many STI cases do you encounter each week	1-5 cases	0	0	0	0	Nil	Nil
	6-10 cases	5	3.6	3.9	3.9		
	11-15 cases	5	3.6	3.9	7.8		
	16-25 cases	62	44.9	48.4	56.3		
	26-40 cases	56	40.6	43.8	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
urethra discharge	Always	3	2.2	2.3	2.3	3.99	1.07
	Often	7	5.1	5.5	7.8		
	Sometimes	34	24.6	26.6	34.4		
	Rarely	28	20.3	21.9	56.3		
	Never	56	40.6	43.8	100.0		
	Total	128	92.8	100.0			
genital ulcer	Never	9	6.5	7.0	7.0	3.70	1.14
	Rarely	9	6.5	7.0	14.1		
	Sometimes	27	19.6	21.1	35.2		
	Often	50	36.2	39.1	74.2		
	Always	33	23.9	25.8	100.0		
	Total	128	92.8	100.0			
scrotal swelling	never	9	6.5	7.0	7.0	2.80	.96
	rarely	39	28.3	30.5	37.5		
	sometimes	56	40.6	43.8	81.3		
	often	16	11.6	12.5	93.8		
	always	8	5.8	6.3	100.0		
	Total	128	92.8	100.0			
inguinal bubo	never	31	22.5	24.2	24.2	2.37	.99

	rarely	33	23.9	25.8	50.0		
	sometimes	52	37.7	40.6	90.6		
	often	10	7.2	7.8	98.4		
	always	2	1.4	1.6	100.0		
	Total	128	92.8	100.0			

Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Vaginal discharge	never	7	5.1	5.5	5.5	1.23	1.56
	rarely	9	6.5	7.0	12.5		
	sometimes	42	30.4	32.8	45.3		
	often	32	23.2	25.0	70.3		
	always	38	27.5	29.7	100.0		
	Total	128	92.8	100.0			
genital ulcer						2.66	1.91
	sometimes	14	10.1	10.9	10.9		
	often	32	23.2	25.0	35.9		
	always	82	59.4	64.1	100.0		
	Total	128	92.8	100.0			
inguinal bubo	never	27	19.6	21.1	21.1	2.35	.94
	rarely	48	34.8	37.5	58.6		
	sometimes	29	21.0	22.7	81.3		
	often	12	8.7	9.4	90.6		
	always	12	8.7	9.4	100.0		
	Total	128	92.8	100.0			
Lower abdominal pain	never	5	3.6	3.9	3.9	2.66	.87
	rarely	7	5.1	5.5	9.4		
	sometimes	12	8.7	9.4	18.8		
	often	54	39.1	42.2	60.9		
	always	50	36.2	39.1	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
HIV	never	19	13.8	14.8	14.8	2.93	1.27
	rarely	28	20.3	21.9	36.7		
	sometimes	45	32.6	35.2	71.9		
	often	14	10.1	10.9	82.8		
	always	22	15.9	17.2	100.0		
	Total	128	92.8	100.0			
Gonorrhea						4.41	.73
	rarely	2	1.4	1.6	1.6		
	sometimes	12	8.7	9.4	10.9		
	often	46	33.3	35.9	46.9		
	always	68	49.3	53.1	100.0		
	Total	128	92.8	100.0			
Syphilis	never	3	2.2	2.3	2.3	3.67	1.06
	rarely	14	10.1	10.9	13.3		
	sometimes	39	28.3	30.5	43.8		
	often	38	27.5	29.7	73.4		
	always	34	24.6	26.6	100.0		
	Total	128	92.8	100.0			
Chlamydia	never	9	6.5	7.0	7.0	3.31	1.07
	rarely	14	10.1	10.9	18.0		
	sometimes	51	37.0	39.8	57.8		
	often	36	26.1	28.1	85.9		
	always	18	13.0	14.1	100.0		
	Total	128	92.8	100.0			
genital herpes	never	19	13.8	14.8	14.8	2.93	1.27
	rarely	28	20.3	21.9	36.7		
	sometimes	45	32.6	35.2	71.9		

	often	14	10.1	10.9	82.8		
	always	22	15.9	17.2	100.0		
	Total	128	92.8	100.0			
Genital wart [HPV]						4.41	.73
	rarely	2	1.4	1.6	1.6		
	sometimes	12	8.7	9.4	10.9		
	often	46	33.3	35.9	46.9		
	always	68	49.3	53.1	100.0		
	Total	128	92.8	100.0			

Table 4: **PREVENTION COUNSELLING STRATEGIES**

How frequently do you advice patient to return in 7days time if symptoms of urethra discharge persist?	Never	19	13.8	14.8	14.8		
	Rarely	28	20.3	21.9	36.7		
	Sometimes	45	32.6	35.2	71.9		
	Often	14	10.1	10.9	82.8		
	Always	22	15.9	17.2	100.0		
	Total	128	92.8	100.0			
Items	Options	Freq.	%	Val. %	Cum. %	Mean	Std. Dev.
Do you offer HIV counselling if both families been managed with urethra discharge are available?	never	16	11.6	12.5	12.5	2.31	0.95
	rarely	14	10.1	10.9	23.4		
	sometimes	44	31.9	34.4	57.8		
	often	22	15.9	17.2	75.0		
	always	32	23.2	25.0	100.0		
	Total	128	92.8	100.0			
How frequently do you refer a male patient being managed for urethra discharge to the hospital if conditions fail to improve?	never	2	1.4	1.6	1.6	3.36	1.22
	rarely	10	7.2	7.8	9.4		
	sometimes	20	14.5	15.6	25.0		
	often	32	23.2	25.0	50.0		
	always	64	46.4	50.0	100.0		
	Total	128	92.8	100.0			
Your level of agreement to refer a male patient with scrotal swelling for surgical opinion	SD	13	9.4	10.2	10.2	4.14	1.02
	D	6	4.3	4.7	14.8		
	N	29	21.0	22.7	37.5		
	A	22	15.9	17.2	54.7		
	SA	58	42.0	45.3	100.0		
	Total	128	92.8	100.0			
Your opinion on the current role of the pharmacist in STIs syndromic management		9	6.5	7.0	7.0	3.33	.94
	E O	19	13.8	14.8	21.9		
	OV	42	30.4	32.8	54.7		
	S	34	24.6	26.6	81.3		
	UL	24	17.4	18.8	100.0		
	Total	128	92.8	100.0			
Your level of agreement to follow the WHO guidelines on syndromic management of HIV/STls	SD	19	13.8	14.8	14.8	2.14	1.09
	D	28	20.3	21.9	36.7		
	N	45	32.6	35.2	71.9		
	A	14	10.1	10.9	82.8		
	SA	22	15.9	17.2	100.0		
	Total	128	92.8	100.0			
Your opinion on current role practiced by community pharmacies on HIV/STLs syndromic management as approved by WHO	FBS	13	9.4	10.2	10.2	2.22	1.65
	BS	6	4.3	4.7	14.8		
	MS	29	21.0	22.7	37.5		
	AS	22	15.9	17.2	54.7		
	FAS	58	42.0	45.3	100.0		
	Total	128	92.8	100.0			

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