

Original Research Article

Assessment of Factors Associated with Increased Number of Sexually Transmitted Infection Cases among the Youth in Serenje Urban District, Zambia

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Abstract: Introduction: Sexually transmitted infections among the youth are of paramount concern to all people who work on improving the health status of populations worldwide as the highest reported rates of sexually transmitted infections are found among the people between 15-24 years of age which predispose them to infertility, general ill-health, pelvic inflammatory diseases in women, three-fold HIV transmission with mother-to-child sexually transmitted infections resulting in still births, neonatal deaths, prematurity, sepsis, pneumonia, congenital deformities and other morbidities. Therefore the study aimed to assess the factors associated with increased number of sexually transmitted cases in the youth of Serenje Urban District, Zambia. **Methodology:** A cross-sectional study was conducted on 138 youth of Serenje urban district selected using simple random sampling technique. The data were collected using a structured, pre-tested interviewer-administered questionnaire. Chi square and multivariate logistical regression analyses were employed through SPSS version 22 to assess and identify factors associated with increased sexually transmitted cases in the youth of Serenje urban district. Odds Ratio with a 95% confidence interval was computed to determine the level of association. In the multivariate analysis, variables with p-value less than 5% were considered as statistically associated, association between covariates and sexually transmitted infections. **Results:** The prevalence of sexually transmitted infections among the youth of Serenje Urban District was found to be 55%. About 47.8% of the respondents had high knowledge levels on STIs, 60% had multiple sexual partners, 34.8% used condom during the last intercourse, 27.5% experienced sexual coercion and 24.5% utilized youth friendly services. Most (43.5%) respondents in this study had poor practices towards STI prevention. Service related such as lack of consumable for STI treatment (92%) and erratic supply of condoms (66.7%) did not influence the increase of STIs. Most (55.8%) respondents stated that lack of traditional leadership involvement in STI prevention influence the prevalence of STIs. Multiple sexual partners [AOR: 7.2 ($P<0.001$, 95% CI 2.616-4.052)], non- use of condoms during sexual intercourse [AOR: 7.2 ($P<0.001$, 95% CI 2.616-4.052)] and lack of traditional leadership involvement in activities aimed at reducing STIs in the community [AOR: 10.5 ($P<0.001$, 95% CI 3.676-5.3371)] were significantly associated with increased number of sexually transmitted infection cases in the youth of Serenje Urban District. **Conclusion:** The prevalence of self-reported STIs among the youth was 55%, which is higher than the national figure of 10% of all out-patient attendances. The study showed poor practices towards STI prevention among the Youth despite some of them having high level of knowledge on STIs. Lack of traditional leadership involvement in activities aimed at reducing STIs in the community could be associated with the high prevalence of STIs. Therefore, developing and strengthening reproductive health dissemination strategies with the involvement of community leaders can help stem down the high prevalence of STIs in the youth. Popularizing sexual and reproductive health information and education, through both youth friendly spaces in health facilities and outreach school health services particularly on STI modes of transmission, prevention, health-seeking behaviors, providing information and improving and modifying access to both male and female condoms are important if sexually transmitted infections are to be reduced.

Keywords: Sexually transmitted infections, Youth, Serenje Urban District, Zambia.

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INTRODUCTION

The term sexually transmitted infections (STIs) refers to a variety of clinical syndromes and infections caused by pathogens that could be acquired and transmitted through sexual activity (CDC, 2015). STIs in general, and among youths in particular, are of paramount concern to all people who worked on improving the health status of populations worldwide as the highest reported rates of STIs were found among people between 15 and 24 years (Yulia *et al.*, 2012). STIs are spread through sexual contact and the common STIs are gonorrhoea, Syphilis, Chancroid, Trichomoniasis and herpes genitalis (National HIV/AIDS/ STI/TB policy (2016). The World Health Organization (WHO, 2019) estimate that, worldwide, more than one million STIs are acquired every day, that each year, there are 376 million new infections with one in four Youths having Chlamydia, Gonorrhoea, Syphilis and Trichomoniasis, more than 500 people were estimated to have had genital infection with Herpes simplex virus (HSV), more than 290 million women had a human papillomavirus infection. The majority of STIs have no symptoms or only mild symptoms that might not be recognized as STIs and that Human Simplex Virus type 2 (HSV2) and Syphilis could increase the risk of HIV acquisition threefold, mother- to- child STIs could result in stillbirth, neonatal death, low-birth-weight and prematurity, sepsis, pneumonia, neonatal conjunctivitis and congenital deformities, HPV infection caused 570000 cases of cervical cancer and over 300000 cervical cancer deaths each year while Gonorrhoea and Chlamydia were major causes of Pelvic Inflammatory Disease and infertility in women (WHO, 2019). Furthermore, the WHO reported that, 988,000 pregnant women were infected with syphilis in 2016 resulting in over 350000 adverse birth outcomes including 760, 000 abortions, 200,000 stillbirths and new-born deaths. In some cases STIs could have serious reproductive health consequences beyond the immediate impact of the infection itself (e.g. infertility or mother –to child transmission). The gonococcal antimicrobial surveillance programme had shown high rates of quinolone resistance, increasing Azithromycin resistance and emerging resistance to extended-spectrum cephalosporins drug resistance, especially for gonorrhoea, was a major threat to reducing the impact of STIs worldwide (WHO, 2019).

More than 30 different bacteria, viruses and parasites were known to be transmitted through sexual contact. Eight of these pathogens were linked to the greatest incidence of STIs. Out of those 8 infections, 4 were currently curable (syphilis, gonorrhoea, Chlamydia and trichomoniasis). The other 4 were viral infections which were incurable (Hepatitis B, HSV-2, HIV, and Human papillomavirus (HPV) (WHO, 2019). The annual occurrence of STIs, including HIV, accounted for the loss of productive healthy men, women and children worldwide and in developing countries, STIs accounted for 17% of economic losses caused by ill-health (WHO,

2019). Zambia then had the largest population of young people in its history with 20.8% of the population between 15-24 years and 36.7 % between 15-35 years. Persons below 15 and 18 years constituted 45.5 % and 52.5 % of the total population respectively (UN Zambia, 2013). Ten (10) per cent of all outpatient attendances per year presented with STI (WHO, 2016). One in 20 young people contracted a curable STI each year. One out of four sexually active youthful women was diagnosed with an STI every year. Reasons for such a trend were many, including cognitive development in which case we found mentally deranged youth were usually sexually abused with the risk of procreating children who might have ended up inheriting traits of their parents` imbecility. Those individuals lacked the mental capacity to make risk free decisions regarding safe sex, physiologic susceptibility in that stress might have increased the vulnerability to STIs by suppressing immune function and altering the protective vaginal microbiota (Turpin *et al.*, 2019). Peer pressure influenced the youth negatively as it encouraged them to get involved in erotic electro-stimulation, prostitution and risk of contracting STIs (Adegboyega *et al.*, 2019), logistic issues like condoms when they were not easily available could complicate the upswing of STIs in the youth (Taper, 2019), and specific sexual behaviors like paedophilia. Not using condoms whilst having multiple sexual partners, saying no to immunization against HPV and homosexuality (Vasilenko, 2018).

Francis *et al.*, (2018) conducted a study on the prevalence of STIs among young people in South Africa, a nested health survey and demographic surveillance site. The study reported the prevalence of 5.6% among men and 19% among women. The findings revealed a high burden of STIs and Bacterial Vaginosis among the young people particularly Chlamydia (5% in men and 11% in women), Herpes simplex virus type 2 (17% in men and 29% in women) and Bacterial Vaginosis was 42% in women. Another study by Naidoo *et al.*, reported a high prevalence of STIs among women (13%). This therefore showed the need to conduct this study among the young people in order to identify factors associated with increased number of STI cases among the young people. The number of STIs is increasing among young people in Zambia especially in Serenje. In 2016, cases of syphilis, gonorrhoea and chlamydia reached an all-time high. Between 2016 and 2020 STIs increased by 10% (WHO 2016). According to the Central Statistical Office 'provincial and district projected populations report (2011 to 2026) for 2013 summary report revealed that; Serenje district had the following projected populations 195007(2016), 199708 (2017), 204491(2018), 209354 (2019) and 214287 (2020) from which the following were the youth in the age group 15-24 years of age: 38612(2016), 39205 (2017), 39712 (2018), 40226 (2019) and 40829 (2020) (CSO, 2013). Serenje urban had a catchment area population of 7% of the district population hence representing catchment area and youth population of 13650(2016), 13980(2017), 14313(2018),

146559(2019), 15000 (2020) and 2702(2016), 2744(2017), 2779(2018), 2815(2019) and 2858(2020) respectively (Serenje urban Action Plans 2016-2019 and 2020-2022). Ideally, at 10% national prevalence of OPD attendances having STIs, the following figures would have represented an acceptable prevalence of STIs: 270 (2016), 274 (2017), 278 (2018), 282 (2019) and 286 (2020). According to Serenje Health Management Information System (HMIS) for 2016 through 2020 it showed that there had been evidence of increase in STIs cases among the youth in Serenje Urban District. Evidence that the prevalence rate of STIs in Serenje urban district had been way above 10% normal prevalence from 2016 through 2020. STIs could have serious consequences beyond the immediate impact of the infection itself (WHO 2019). Despite the increase in the numbers of STIs no study has been done in Serenje to determine factors contributing to an increase in the number of STIs among the youth. The purpose of this study was to determine factors associated with increased number of sexually transmitted infection cases among the youth in Serenje urban district, Zambia.

Significance of the study

The main objective of the study was to determine factors associated with increased number of STIs among the youth in the Serenje urban District of Serenje District. The high burden of STIs in Serenje had telling effects on the individual youth, the family and community at large. At individual level, they caused PIDs, Ectopic pregnancy, cancer of the cervix, post-partum endometriosis, infertility and chronic abdominal pains and adverse pregnancy outcomes like abortions, intrauterine deaths, premature delivery in women with increased cases of neurological damage to infants (09 in 2021) whilst causing infertility, prostatitis, cancer of penis and urethral strictures which could lead to hydronephrosis and renal injury in men. At family level, STIs were always blamed on women hence stigmatisation from family members. Infertility also resulted into stigmatisation of couples in the family with resulting abandonment and divorcing of couples with increased incidences of suicide. More often than not, STIs led to violence in households with effects of disfigurement between feuding couples which culminated into poor upbringing of off-springs who would inherit their parents` violent behavior and escalated it to the community. At community level, STIs always reduced work time due to illness resulting in low productivity with consequent rising of poverty with its offshoots already alluded to. Furthermore, high cases of STIs had a predilection to increased STI strains resulting in high cost of acquiring third generation cephalosporins which had shown great efficacy in treatment of gonorrhoea. Equally, the cost of treating infertility which averaged \$5000 was beyond the reach of an ordinary resident of Serenje.

Moreover, STIs would not only affect teens during adolescence but could have serious consequences

beyond the immediate impact of the infection itself (WHO, 2019). STIs could increase the risk of HIV acquisition three-fold or more, mother-to-child STIs can result in stillbirth, neonatal death, low birth – weight and prematurity, sepsis, pneumonia, neonatal conjunctivitis and congenital deformities, HP Therefore, effective prevention of STI would ultimately lead to the reduction in HIV transmission and other Sexually Transmitted Infections. There were some mitigating efforts which had been taken by both the Ministry of Health (MOH) and Serenje District Health office (SDHO) in order to stem down the rising number of STI cases in the youth of Serenje Urban district. At MOH level, there had been consistent supply of male condoms in the district, training of MOH staff in youth friendly sexual reproductive health services, building of youth-friendly shelters and launching of the adolescent sexual reproductive document as a policy to guide the operationalisation of youth friendly services. Furthermore, at SDHO level, management ensured that condoms were distributed in all health facilities, Government departments, beer places and other recreational and religious gatherings at all times. Additionally, SDHO trained adolescent peer educators and community comprehensive abortion peer educators who worked in adolescent/youth friendly spaces and community. Under the health promotion department of SDHO, two slots had been paid for on Serenje radio per month where reproductive health information was given to the youth; hence the community was afforded a platform to make contributions towards the sexual life of the youth in Serenje urban. Despite the above cited positive efforts, the rise in the STI cases among the youth had gone unabated. Over and above, it was worth noting that no study on STIs had ever been undertaken in the recent past decades in Serenje District so that the problem could be bench-marked. It was therefore, hoped that result of this study could be used by policy makers, managers at district and health center levels to design strategies for prevention and control of STIs among the youths. Consequently, the results would act as a basis for further research in Serenje urban district.

METHODOLOGY

A descriptive cross-sectional survey was used to determine the factors associated with the increased number of STIs among the youths of Serenje urban District. The study population consisted of male and female youths aged between 15 and 24 years in Serenje urban district. Only youths aged between 15 and 24 years residing in Serenje urban district were allowed to participate in the study. Participation in the study was voluntary, therefore only those youths who gave consent to participate in the study were included. Those who declined, very sick patients and those who came from outside Serenje Urban district area were excluded. Simple random sampling method using the rotary technique was used to select the youths within the age group 15 to 24 years from the Serenje urban district health center. A sampling frame was obtained from the

relevant authorities (Health center register). Simple random sampling method gave each unit an equal chance of being selected. A total of 138 youths participated in the study. A standardized interviewer administered questionnaire was used to collect data which was from the youths. The tool was pretested and had both closed and opened questions and was divided into four sections. Section A comprised questions to determine socio-economic and demographic data, section B comprised questions to determine knowledge, Section C comprised questions to assess the practices, Section D had questions to assess the cultural factors and section E consisted of questions to determine Service-related factors. To ensure validity of the data collecting instrument, a thorough literature review was conducted and all areas of interest were included in the data collecting tool. The questionnaire was constructed in a simple, clear and precise language. The research supervisors and STI experts went through the data collecting tool. Reliability of the data collecting instrument was ensured by pretesting it in an environment with similar characteristics as the study setting. A pre-test helped us to evaluate if the data collecting tool, which was the interviewer administered questionnaire, was consistent with the way data collection was intended to be. This also allowed the researcher to make modifications after review of pilot study whenever need arose. Additionally, the researcher conducted a test-retest coefficient and it was .85.

Data was collected using an interviewer administered - structured questionnaire. As a way of respecting the participants' confidentiality, each respondent was interviewed in a private room and no names were written on the questionnaire. The purpose of the study was explained to the respondents before the interview. Questions were fully explained to the participants so that they responded appropriately to the questions. The interviewer introduced himself to the respondents, and thereafter invited them to participate in the interview. After all the explanation the researcher obtained a written consent signed by each respondent and proceeded with the interview. Each respondent was interviewed for 30-40 minutes. The interviewer asked the interview for any questions, comments or clarifications throughout the interview. At the end of each interview the interviewer secured the questionnaire in bag to ensure confidentiality and thanked the respondents. A pilot study was carried out from Tazara compound which was based on 10% of the sample size for Serenje urban District. That was to enable me check for the participants' ability to understand and answer the questions. It also helped me to clarify grey areas and routine errors. The pilot study also assessed the logical sequence of the items; clarified the wording of the questionnaire, the feasibility of the design procedure for

data processing/ analysis and other potential problems. Additionally, helped me to estimate how much time would be required to complete a questionnaire. No adjustment was made to the data collection tool. After data collection, data was analyzed for completeness and consistency and assigned codes to give it a numerical format. It was then be entered into Statistical Package for the Social Sciences (SPSS) program version 23 on a set spreadsheet, categorized and then computed in order to arrive at the domain scores. Chi-square test was used to determine associations between dependent and independent variables at unadjusted level and multivariable logistic regression was to test association of variables at adjusted level. Confidence interval was set at 95% with significant level of 0.05. Data was presented in form of tables, pie charts and cross tabulations. Descriptive statistics inform of, percentages, the mean, mode and frequency distributions was used to summarize data.

RESULTS

Table 1: Socio-demographic characteristics of the Respondents (n=128)

Variable	Frequency	Percentage
AGE RANGE IN YEARS		
15-18	28	20.3
18-20	43	31.2
21-24	62	48.5
Total	138	100
GENDER		
Male	65	47.1
Female	73	52.9
Total	138	100
MARITAL STATUS		
Married	36	26.1
Single	102	73.9
Total	138	100
EDUCATIONAL LEVEL		
Primary	39	28.3
Secondary	89	64.5
Tertiary	10	7.2
Total	138	100
Employed	64	46.4
Not employed	74	53.6
Total	138	100

Table 1 Shows that nearly half of the study respondents 62 (48.5%), were in the age group of 20-24 years and were single 102 (73.9%). The majority 89 (64.5%) of the respondents had reached secondary school level and were not employed 74 (53.6%). Some respondents 65 (47.1%) had at least three meals a day and 59 (39.8%) twice a day.

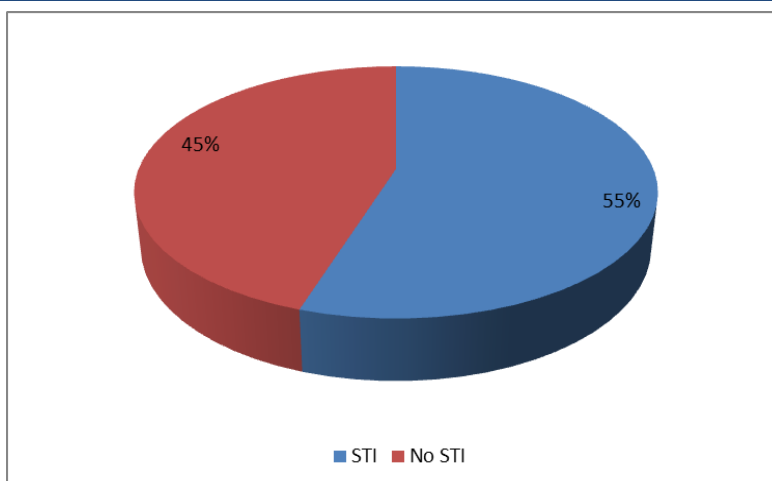


Figure 1: Prevalence of sexual transmitted infections among the respondents (138)

Fig 1 Shows that majority 76 (55%) of the respondents had suffered from STI previously.

Knowledge of STIs among youths

Table 2: Knowledge of STIs among the respondents (n=138)

Knowledge of STIs	Frequency	Percent
High level	66	47.8
Medium level	61	44.2
Low level	11	8
Total	138	100

Table 2 shows knowledge of STIs among the respondents and that 66 respondents (47.8%) had high knowledge level on STIs, while 61 (44.2%) had medium

knowledge level and 11 (8%) had low level of knowledge in STIs.

Table 3: STI Practices among Respondents (n=138)

STI practices	Frequency	Percent
Used condoms	48	34.8
Sexual coercion	38	27.5
Multiple partners	80	60
Utilizes Youth friendly services	34	24.6

Table 3 shows STI practices among the respondents which revealed that 48 (34.8%) reported to had used condoms during sexual intercourse, 38 (27.5%)

reported sexual coercion while 80 (60%) reported having had multiple sexual partners and 34 (24.6) reported utilizing Youth Friendly services.

Table 4: Overall STI practices among respondents

Practices	Frequency	Percent
Good	60	43.5
Poor	78	56.5
Total	138	100%

Table 4 shows the respondents overall practices regarding STI prevention. The findings show that 43.5% had good practices and 56.5% had poor practices.

Table 5: Association between prevalence of STI and practices (n = 138)

Practices		Previous History of STI			
		Yes	No	Total	p-Value (un-adjusted)
Use of condom	Yes	13	35	48	0.001
	No	63	27	90	
Sexual coercion	Yes	25	13	38	0.119
	No	51	49	100	
Multiple partners	Yes	56	24	80	0.001
	No	20	38	58	
Utilization of youth friendly corner	Yes	21	13	34	0.366
	No	55	49	104	
Peer pressure	Yes	27	18	45	0.418
	No	49	44	93	
Alcohol abuse	Yes	32	20	52	0.235
	No	44	42	86	
Streetism	Yes	6	8	14	0.332
	No	70	54	124	

Table 5 shows associations between prevalence of STI and practices among the respondents in the District. Out of the characteristics under practice, only

use of condom and multiple partners were significantly associated with the outcome at un-adjusted level with both p-values being at 0.001.

Table 6: Service related factors (n=138)

Service related factors	Frequency	Percent
Lack of consumables for treatment of STI's	YES=11	8
	NO=127	92
	138	100
Erratic supply of condoms	YES=46	33.3
	NO=92	66.7
Total	138	100

Table 6 shows service related factors that could influence the increase of STIs among the youths notwithstanding lack of consumables for treatment of STIs and erratic supply of condoms. The findings show

that 92% (127) of the respondents reported that they did not have lack of consumables for the treatment of STIs while 66.7% (92) stated that they had erratic supply of condoms.

Table 7: Cultural factors associated with STIs (n=138)

Cultural factors associated with STIs	Frequency	Percent
Involvement of traditional leadership	YES=61	44.2
	NO=77	55.8
Total	138	100

Table 7 shows cultural factors associated with STIs and that 61 (44.2%) respondents reported traditional leadership involvement in the sensitization on prevention of Sexually Transmitted Infections yet the rest which was 77 (55.8%) said there was no traditional leadership involvement in the sensitization on prevention of Sexually Transmitted Infections.

Table 8: Association between prevalence of STI and cultural factors (n = 138)

Cultural factors		Previous History of STI			
		Yes	No	Total	p-Value (un-adjusted)
Involvement of traditional leadership	Yes	14	47	61	0.001
	No	62	15	77	

Table 8 shows associations between prevalence of STI and cultural factors, the results were significant at un-adjusted level with p-value at 0.001.

Table 9: Multivariable logistic regression to test association of variables at adjusted level

Variable name	Variable response	Odds ratio adjusted	Confidence interval	P-value adjusted
Age range	20-24	ref	n/a	n/a
	18-20	0.7731	0.2422-2.467	0.664
	15-18	0.7752	0.222-2.334	0.782
Gender	female	Ref	n/a	n/a
	Male	0.9691	0.3497-2.685	0.952
Educational level	tertiary	Ref	n/a	n/a
	secondary	1.473	0.1812-11.968	0.717
	primary	4.188	0.4338-40.4261	0.216
Employment status	employed	Ref	n/a	n/a
	Not employed	0.517	0.1812-1.472	0.217
Cultural factors [traditional leader involvement]	Yes	Ref	n/a	n/a
	No	10.56	3.676-5.3371	0.001
Knowledge	High	Ref	n/a	n/a
	medium	1.44	0.497- 4.172	0.502
	Low	0.369	0.057-2.392	0.296
Practices	Good	Ref	n/a	n/a
	Poor	7.243	2.616-4.052	0.001
Erratic supply of condoms	No	Ref	n/a	n/a
	Yes	0.925	0.331-2.588	0.883
Poverty	Low	Ref	n/a	n/a
	medium	0.631	0.2750-1.9471	0.227
	High	3.465	0.523-22.92	0.197

In the multivariate analyses, poor practices, through non- use of condoms during sexual intercourse and having multiple sexual partners, and lack of traditional leadership involvement in sensitization on prevention of Sexually Transmitted Infections were significantly associated with developing or acquiring sexually transmitted infections. After adjusting for the confounding effects of all risk factors such as age range, gender, knowledge, employment status, marital status, poverty, education level, erratic supply of condoms and traditional leader involvement the study found that compared to respondents with good practice towards prevention of STI respondents with poor practice were 7.24 times likely to have an STI and the results were significant [AOR: 7.2 ($P < 0.001$, 95% CI 2.616-4.052)]. This means the youth with poor practices were 7.2 times to contract sexually transmitted infections compared to the youth with good practices through constant correct use of condoms and not having multiple sexual partners.

After adjusting for the confounding effects of all risk factors such as age range, gender, knowledge, employment status, marital status, poverty, education level, erratic supply of condoms and practice the study found that compared to respondents with the traditional leader involvement in sensitization on prevention of Sexually Transmitted Infections respondents without traditional leader involvement in sensitization were 10.5 times likely to have Sexually Transmitted Infections and

the results were significant [AOR: 10.5 ($P < 0.001$, 95% CI 3.676-5.3371)]. This means the chances of the youth contracting sexually transmitted infections were 10.5 times because of their traditional leadership's lack of involvement in sensitization on prevention of Sexually Transmitted Infections in the community compared to the youth hailing from the community where the traditional leadership is equal to task in sensitizing the community on prevention of sexually transmitted infections.

DISCUSSION OF FINDING

In this study, nearly half of the study respondents 62 (48.5%), were in the age group of 20-24 years and were single 102 (73.9%). The majority 89 (64.5%) of the respondents had reached secondary school level and were not employed 74 (53.6%). Some respondents 65 (47.1%) had at least three meals a day and 59 (39.8%) twice a day. The Age group 20-24 had the highest reported STI cases (40 out of 76) 52.6% followed by 218-19(20) 26.3% and the least 15-17(13 out of 76) 15.8%. As indicated in table 1, more females 73 (52.9%) than males 65 (47.1%) contrary to the finding by Kassie *et al.*, (2019), who reported 46.6% for females and 53,4% for males which could be due to differences in gender numbers recruited in the study.

Furthermore, differences in study design where females could have felt reluctant to open up in an institution based study as compared to this study which was community based and also may be due to the females' reproduction anatomy and lack of female condoms that can place them at higher risk of contracting sexually transmitted infections than males. Additionally, STIs were more common among single youths compared to the non-single ones. As for the education level, high number of secondary education youth had STIs followed by primary level education with the least being Tertiary. Occupation had equal numbers for STIs (25% for both employed and unemployed) with poverty revealing high numbers (24%) for low poverty, followed by medium poverty (22.5%) with least numbers recorded in high poverty bracket (8%). Notwithstanding association between high numbers of STIs and socio-economic factors, none were significant at un-adjusted level. These findings were supported by Demis *et al.*, (2017) study which revealed high vulnerability of the adolescents to STIs as a result of poor practices and not socio-economic factors.

The current study has shown overall prevalence of STIs of 55% among the respondents (Figure 1). This finding was inconsistent with the one conducted by an institution based cross-sectional study conducted by Kessie *et al.*, (2016), where the overall prevalence of sexually transmitted infections at University of Gondar was 18.2% (95% CI, 15.4, 20.8) in the past 12 months. About half (46.6%) female students were known to be infected. This was despite the fact that the sample population was higher (1342) than this study (138). Furthermore, the study was conducted at setup clinics within the University and hospital while this study was conducted in the community. By and large the prevalence for this study is equally higher than the other two conducted by Francis *et al.*, (2018) and Ndubani and Hojer (2001) where the prevalence was 42.1% and 23% respectively despite the fact that both studies were also conducted in the communities. Fear of disclosure of history of STIs could have been the hindrance to capturing necessary information which could have given a true picture of the prevalence. Furthermore, for Ndubani and Hojer, the possible difference might also be due to the differences in the study subjects. This study included both males and females while afore-mentioned Authors' study included males only. The high prevalence of STIs vis-a-vis the Socio-demographic characteristics of the youth of Serenje Urban District is.

The study has revealed that knowledge levels about STIs among the respondents were on the positive trajectory because most (66) 47.8% of the youth were aware of the different types of STIs, symptoms and signs, modes of transmission, prevention methods and complications of STIs whilst (61) 44.2% were able, symptoms and signs, modes of transmission, prevention methods and complications with (11) 8% of the respondents able to identify symptoms/signs and modes

of transmission of STIs. The findings showed that most of the respondents' in this study had high knowledge levels regarding STIs (66) 47.8%, those with medium knowledge levels were (58) 42.2% and (11) 8% had low level of knowledge (Table 2).

With regards to the association between prevalence of STI and knowledge of STIs, this study revealed that 23.1% and 24.6% respondents with history and no history of STIs respectively had high knowledge (66) 47.7%, whilst those with medium knowledge were (38) 27.5% (history of STI) and (23) 16.6% (no history of STIs) (total (61) 44.1%) and lastly, (6) 4.3% respondents with history of STIs and 3.6% without history of STIs had low score (total 11 =7.9%). These results were not significant at un-adjusted level with p-value of 0.295. The findings were consistent with the study by Demis *et al.*, (2017) where less than 20% respondents showed low levels of knowledge despite the study design being different because Denis *et al.*, (2017) did their study from an institution of learning and did not venture in the community. Furthermore, Zin *et al.*, (2019)'s study revealed low knowledge levels of 30% which was contrary to result of this study where 95.6% showed acceptable knowledge. The possible differences might be due to the difference in the study area and study subjects were selected. This study included both males and females from the community while Zin *et al.*, study included females only from the correctional facility.

STI practices among the respondents

This study has shown that 60% (83) of the respondents had multiple sexual partners, 34.8% (47) used condom during the last intercourse, 27.5% (38) experienced sexual coercion and 24.5% (34) utilized youth friendly services. As shown in table 3, 56.5% (78) of the respondents had poor practices towards STIs prevention. The study findings showed that the youth who had multiple sexual partners and did not use condoms during sexual intercourse had a higher likelihood of contracting STIs compared to those without multiple sexual partners and those that consistently used condoms during sexual intercourse considering the association between high numbers of STIs and practices, out of 55% (76) respondents with history of STIs, only 9.4% (13) reported ever using a condom before whilst the rest 45.6% (63) did not report using a condom translating into a paltry 17.1% (24) of condom utilization which was quite low (Table 4). Additionally, 19.6% (27) of the respondents without history of STIs never used a condom. Furthermore, notwithstanding multiple sexual partners, of the 55% (76) respondents with history of STIs, 40.6% (56) reported having had multiple sexual partners; whilst 27.5% (38) of the 44.9% (62) without history of STIs reported not having had multiple sexual relationships. This shows that MSP in this study had the propensity to push STI cases high in the youth. This study finding is supported in Ruark *et al.*, (2014) where it was reported that multiple sexual partnership which was a normative in Swaziland was highly associated with

the high prevalence of STIs. However, 18.1% (25) respondents with history of STIs reported sexual coercion whilst streetism had 4.3% (6), utilization of youth friendly spaces revealed 15.2% (21) did utilize the spaces with 19.6% (27) respondents reporting peer pressure for engagement in sex, and alcohol abuse showed 23.2% (32) respondents who reported taking alcohol before each sexual encounter. Therefore, this study shows that sexual coercion, streetism, peer pressure, alcohol abuse and lack of utilization of youth friendly spaces had no bearing on the increased number of STI cases in the youth in Serenje Urban District. The findings of this study on streetism are contrary to the report by Marshal *et al.*, (2009) where it was revealed that displacement of street youth might increase the likelihood that the youth would involve themselves in sexual risk behaviors hence cause a surge in STIs.

In considering the associations between high numbers of STI cases and practices among the youth in Serenje urban District, out of the characteristics under practice, only use of condom and multiple partners were significantly associated with the outcome (high prevalence of STIs) at un-adjusted and adjusted levels with both p-values being at 0.001(See table 4).

The study has revealed that the youth with poor practice towards prevention of STIs were 7.24 times likely to have an STI compared to the youth with good practices. Notwithstanding condom use in this study, this was supported by previous studies in Kassie *et al.*, (2019) 14%, Keetile and Letamo (2015) 48%, Zambia Adolescent Health Survey (2017) 48% (of condom use), who alluded to low condom use as the precursor to high STI prevalence despite the availability of condoms in the study areas. Additionally, this study was supported Jain *et al.*, (2018) study which showed poor condom use of 15% among both male and female study participants. Though the sample sizes, study groups in relation to age and study designs could be different to this study, the findings remained consistent. Therefore, condom use is one of the methods of preventing the transmission of STIs Furthermore, both the afore-cited studies and this study revealed that individuals who had never used condoms were significantly associated with STIs. Accordingly, the higher odds of STIs were observed among youth who had never used condoms during sexual intercourse. This could be so because individuals who used condoms might have had more access, information, and experiences in its appropriate use. As regards multiple sexual relationships revealed in this study, this was supported in Ruark *et al.*, Powers and Marshal *et al.*, where it was reported that concurrent sexual partners was normative and further concluded that multiple sexual partners (MSP) both in recent or long term could present substantial risk for efficient transmission of STIs, Additionally, the result in this study was supported by Wilson and Sathivasuman and Jain *et al.*, where it was reported that concurrent sexual partners was (69.0%) males (35.4%) females and 39% (both males and

females) respectively of multiple sexual partnerships. This was found to be a result of social pressure and norms; a lack of social trust; poverty, a desire for material goods and geographical separation of partners and that unequal power dynamics; culture, norms and values also played a significant role in putting females at higher risk of contracting STIs and also that culture justified and accepted more concurrent partners by males although it was unacceptable for women. On association between high number of STI cases and cultural factors, only 14 (18.2%) respondents with history of STIs reported traditional leadership involvement in sexual reproductive health services in the community and the results were significant at both un-adjusted and adjusted levels with p-value at 0.001 (Table 7). These findings are inconsistent with the ones obtained at Njelele and Yolamu Health centres (Chitambo HMIS, 2020), in Chief kafinda of Chitambo District where only 23 and 12 STI cases for year 2020 were reported respectively. Similarly, Chimatiro *et al.*, (2020), in a qualitative study in Mulanje, Malawi, on role of community leadership on adolescents` HIV and sexual reproductive health rights, revealed that community leaders play many roles including but not limited to: advisory, encouragement and restricting cultural practices, formulating by-laws and handling sexual abuse complaints. It goes without saying that traditional leadership played an important role in creating a morally upright community by guiding different families in observation of all the necessary traditional virtues and dictates of society. The leadership did not subscribe to illicit individual dispositions like promiscuity and delinquency which inevitably had a telling effect on the prevalence on STIs.

This study has revealed that lack of consumables and condoms did not have a significant bearing on the increased number of STIs in the youth of Serenje urban district hence considering the association between high numbers of STI cases and service related factors (refer to table 6). Only 8 (5.8%) respondents with history of STIs (total of 11 of 138) reported lack of consumables for treatment of STIs and 28 (20.3%) reported erratic supply of condoms and the results were not significant at un-adjusted level with p-values of 0.220 for lack of consumables and p-value of 0.333 for erratic supply of condoms. The study findings were supported in Svensson and Waen (2013) study, where it was revealed that there was sustained availability of condoms. However, the study findings are contrary to the Adolescent Health Strategy (2017) which showed low condom utilization of an average 34% for both males and females and this was attributed to few condom collection points coupled with few youth friendly spaces in the country. Furthermore, these study findings are variant Tapera *et al.*, (2019) findings which revealed non-accessibility of condoms as a result of long distances to increased STI cases.

The present study has shown that lack of traditional leadership involvement in the community

sensitization on prevention of STIs has the significant role in the increase of STI cases among the youth of Serenje urban district because compared to youth with the traditional leadership involvement in sensitization on prevention of Sexually Transmitted Infections, the youth without traditional leader involvement in sensitization were 10.5 times likely to have Sexually Transmitted Infections (Table 9). This study is supported by the findings of Chitamiro *et al.*, (2020) where it was reported that community leaders played many roles including but not limited to: advisory, encouragement and restricting cultural practices, formulating by-laws and handling sexual abuse complaints hence played a pivotal role in fostering positive behavioral change and good sexual reproductive health practices. Moreover, United Nations Population Fund (UNFPA, 2020), recognized the critical role traditional leadership played in shifting negative social norms, like polygamy which was reported to be normative in Ruark *et al.*, (2014), that continued to drive harmful practices to promoting positive norms and practices.

LIMITATIONS AND STRENGTH OF THE STUDY

The limitations of the study include the use of a structured questionnaire which could have overlooked other possible factors that contributed to increased number of STIs. This study was a cross-sectional study carried out on a limited study population; the findings therefore should be generalized with caution as only youths who were captured in Serenje Urban district catchment area had to be administered with the questionnaire. Since sexual behavior and practice were private and thus involved a sense of intimacy and sensitiveness which could cause some respondents to feel too embarrassed or ashamed to report syndromes (may be subject to social desirability bias). In order to get around the problem, a self-administered questionnaire was used and participants clearly informed about the purpose of the study and the confidentiality of information that was to be obtained. Sexually transmitted infections were assessed only through respondents' reports which approach may misdiagnose signs/symptoms due to other problems similar to STIs. However, follow-up questions on signs and symptoms of different STIs were utilized in the questionnaire in order to buttress this possible limitation in the study. Furthermore, the possibility of bias was minimised by the assistance of an expert co-coder and the use of a validated tool for data collection. The researcher re-examined the research objectives stated at the beginning of the study (repeated in section 5.2). After reviewing the data presented in chapter 4, and the conclusions and recommendations of chapter 5, evaluation showed that the researcher's objectives had been achieved.

CONCLUSION AND RECOMMENDATION

The main objective of the study was to assess factors associated with high number of sexually transmitted infection cases in the youth of Serenje Urban District. The study provided factors contributing to the

increased number of STIs among the youth of Serenje urban District. The prevalence of STIs among the youth of Serenje Urban District was 55%. There was no association between the high prevalence of STIs in the youth and the following factors: Demographic characteristics, knowledge of STIs and service-related factors. However, practices towards STIs and cultural factors were found to be associated with the high prevalence of STIs. By and large, non-utilization of condoms during sexual intercourse and multiple sexual partners were revealed to be practical factors which pushed STI cases high in the youth whilst cultural factors pertained to the non-involvement of traditional leadership in the sensitization of prevention of sexually transmitted infections in the community. There is need therefore to design STIs prevention strategies targeted at the youth in order to minimize the spread of STIs.

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