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Knowledge and Practices on Reproductive Tract Infections among Rural Women in Binga, Zimbabwe

Estele Mwanza[1]; Reginald Dennis Gwisai[2]; Joshua Munsaka[1]

[1]Department of Health Sciences, Bindura University of Science Education.
[2]Department of Academics, Unicaf University.

First Author's Email: edakamwanza47@ gmail.com ; Third Author's Email: munsakajoshua@ gmail. com

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Corresponding Author
Reginald Dennis Gwisai
E-mail: *reginalddgwisai@ yahoo.co.uk; r.gwisai@ zimbabwe.unicaf.org*

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ABSTRACT

This study assesses the knowledge on reproductive tract infections among rural women of Siabuwa, Binga district, Zimbabwe. The study employed a descriptive cross - sectional study with a convenience (quota) sampling method which was utilised based on the respondents' access to Siabuwa Rural Hospital for any healthcare from three wards [Nag/Sinampande(31%), Kalungwizi (36%) and Nabusenga (33%)], to identify a sample of one hundred and eighty women between 18 to 49 years. Data were collected through the distribution of self-administered questionnaires to available and verbally consenting women at Siabuwa Rural Hospital. The questionnaire covered socio – demographic characteristics, knowledge on reproductive tract infections, and personal hygienic behaviours. 32 percent reported having suffered from a reproductive tract infection in the previous year prior to the study while 73.7 percent were treated at the hospital. Among those who did not seek treatment, 73.3% were afraid and shy to be examined on private body parts while 26.7% were of the opinion that the symptoms would disappear on their own and did not seek any medical attention. The mean knowledge for this study was 42.5% while 57.5% showed lack of knowledge. The reproductive and personal hygienic behaviour were lowest for washing genital area after using the toilet. This study found out that there was a major lack of knowledge on reproductive tract infections among the rural women in the study area. It was recommended that strengthening the school health programmes is advocated to impart knowledge on reproductive tract infections and sexual health issues especially at primary and post-primary school levels.

INTRODUCTION

Reproductive tract infections are agreeably defined as a group of infectious diseases caused by bacteria, viruses, Chlamydia, Mycoplasma and other pathogens invading the genital tract which cause serious physical and psychological harm such as infertility, intrauterine growth retardation, premature labour, increased vulnerability to Human Immunodeficiency Virus and a heavy socio-economic burden to the families (Xu *et al.,* 2019; Kerubo *et al.,* 2016; Newman *et al.,* 2015; Shao *et al.,* 2012; Ravi and Kulasekaran, 2013; Zhang *et al.,* 2009). Previous studies concur that in females, reproductive tract infections often start in the lower genital tract as vaginitis or cervicitis with manifestations such as itching, genital pain, abnormal vaginal discharge, and a burning feeling during urination. In addition, backache, lower abdominal pain, genital ulcer and inguinal swelling are main symptoms of reproductive tract infections (Mamta and Kaur, 2014). Previous studies elsewhere reveal that reproductive tract infections cover three types of infections which are sexually transmitted infections; infections that result from overgrowth of organisms normally present in the reproductive tract and infections associated with medical procedures including abortion and insertion of intra uterine contraceptive devices (Teasdale *et al.,* 2018; Kerubo *et al.,* 2016; Desai and Patel, 2011; Razia, Ashraf and Saad, 2013; Nielsen *et al.,* 2014; Mani, 2014). Globally, studies show that women are reluctant to seek treatment for reproductive tract infections yet the prevalence is high especially in rural areas due to stigma associated with sexually transmitted infections (Xu *et al.,* 2019; Newman *et al.,* 2015; Binh, Gardner and Elias, 2010; Hedge *et al.,* 2013; Menendez *et al.,* 2010; Ravi and Kulasekaran, 2014).

Several studies point out that sexually transmitted infections are recognised as a serious global threat to the health of populations and have a major impact on sexual and reproductive health, high economic burden as well as enormous health consequences worldwide (Durai *et al.,* 2019; Xu *et al.,* 2019; Teasdale *et al.,* 2018; Kerubo *et al.,* 2016; Newman *et al.,* 2015; Ravi and Kulasekaran, 2013). Observations of self-reported symptoms of sexual morbidity reveal a lack of treatment seeking behaviour due to existing taboos and inhibitions regarding sexual and reproductive health, hence they hesitate to discuss the problem due to shame and embarrassment, despite availability of health services, symptomatic women bear the silence because of shyness and social stigma (Diadhhiou *et al.,* 2019; Ravi and Kulasekaran, 2013; Mamta and Kaur, 2014). The World Bank (2013), cited by Hegde *et al.,* (2013), estimates that sexually transmitted infections (excluding Human Immunodeficiency Virus) accounts for 8.9% of all disease burden in women aged between 15 to 45 years. Furthermore, observations are that over a third of life years is lost among women of reproductive age group due to reproductive health problems including reproductive tract infections and sexually transmitted infections (Teasdale *et al.,* 2018; Mani, Annadurai and Danasekaran, 2013).

Hegde *et al.,* (2013) asserts that reproductive tract infections were a major cause of acute and chronic illness with severe consequences globally. They also point out that women are at greater risk as compared to men. Furthermore, observations show that the prevalence of reproductive tract infections was 26.8% while the period prevalence of reproductive tract infections for preceding year was 39.1% (Hedge *et al.,* 2013). Other studies revealed alarming results of reproductive tract infections ranging between 21.9% and 92 (Durai *et al.,* 2019;Devi and Swarnalatha, 2007). Estimates from previous studies show the prevalence of reproductive tract infections as 27% indicating that every fourth woman residing in an under privileged area is suffering from reproductive tract infections (Hedge *et al.,* 2013).

Reproductive tract infections including sexually transmitted infections represent an urgent public health priority in developing countries (Durai *et al.,* 2019; Teasdale *et al.,* 2018; Prabha, Sasikala, and Bala, 2012; Shao *et al.,* 2012; Rahman *et al.,* 2012; Razia, Ashraf and Saad, 2013). Previous studies noted a high prevalence (76.4%) of rural women had reproductive tract infection (Durai *et al.,* 2019;Zhonghua, Xing and Xue, 2010; Zhang *et al.,* 2009). Chronic cervicitis was most prevalent (42.7%) followed by bacterial vaginosis (29.1%). While other studies noted a 28.2% prevalence of reproductive tract infection among married non – pregnant women (Ramia *et al.,* 2012). Desai and Patel, (2011), observed a 39% prevalence of reproductive tract infections among women based on self – reports and among women who had induced and spontaneous abortion as their last pregnancy outcome. This was despite limited variance of prevalence by use of different family planning methods. Reproductive tract infections and sexually transmitted infections reported a high prevalence (64%) in women with post abortion problems while it was 54% in women with post vaginal delivery problems (Desai and Patel, 2011). Li *et al.,* (2014), observed that bacterial vaginosis was associated with severe reproductive tract infections and adverse obstetric outcomes, such as pre – term delivery, pelvic inflammatory disease, sexually transmitted infections and Human Immunodeficiency Virus especially in rural areas. The study sought specific reproductive tract infections, where bacterial vaginosis among American girls and women was 29.2% compared to that reported in married Chinese women where it was reported to be 11.9% (Li *et al.,* 2014). According to previous studies (Teasdale *et al.,* 2018; Mamta and Kaur (2014), untreated or a delay in treatment of reproductive tract infections leads to complications like pelvic inflammatory disease, infertility, cervical cancer and puerperal sepsis, chronic pelvic pain and ectopic pregnancy. Balsara *et al.,* (2010) discovered that the prevalence of reproductive tract infections was as high (76.7%) in an Afghan refugee camp in Pakistan.

Mwaura *et al.,* (2013), discovered that there was a high prevalence of reproductive infections in

pregnant women with candida being the major culprit in South Africa (56.7%) and Kenya (23.3%). They also uncovered that cases of Neisseria gonorrhoeae in Rwanda constituted 13.3% while syphilis was 20% (Mwaura *et al.,* 2013). Previous studies (Kerubo *et al.,* 2016; Rabiu, Adewunmi, Akinlusi and Akinola, 2010) observed that reproductive tract infections are endemic in developing countries and entail a heavy toll on women. Furthermore, if untreated, reproductive tract infections could lead to adverse health outcomes such as infertility, ectopic pregnancy and increased vulnerability to transmission of the Human Immunodeficiency Virus (Teasdale *et al.,* 2018; Rabiu, Adewunmi, Akinlusi and Akinola, 2010).

Chico *et al.,* (2012), also concluded that the prevalence of reproductive tract infections including sexually transmitted infections shows a mixed picture with high cases in some areas while low in some areas. Observations were in East and Southern Africa, where there were low rates of syphilis (4.5%), Neisseria gonorrhoeae (3.7%) and Chlamydia trachomatis (6.9%) and high rates of trichomonas vaginalis (29.1%) and bacterial vaginosis (50.8%). Comparatively, West and Central Africa showed slightly lower rates than the East and Southern Africa regions. Again, Chico *et al.,* (2012), discovered that the prevalence of syphilis was (3.5%), Neisseria gonorrhoeae (2.7%) and Chlamydia trachomatis (6.1%) and high rates of trichomoniasis vaginalis (17.8%) and bacterial vaginosis (37.6%) in West and Central Africa. Similary some studies revealed that there was a high prevalence of both viral and bacterial reproductive tract infections in Human Immunodeficiency Virus sero-positive women than sero-negative women (Kerubo *et al.,* 2016; Msuya, Uriyo and Hussain, 2009). Furthermore, genital tract infections were more prevalent in Human Immunodeficiency Virus sero-positive than sero-negative women, statistically significant for syphilis (3.3% versus 0.7%), Herpes Simplex Virus 2 (43.2% versus 32.0%), genital ulcers (4.4% versus 1.4%) and bacterial vaginosis (37.2% versus 19.6%) in northern Tanzania (Msuya, Uriyo and Hussain, 2009).

According to previous studies (Teasdale *et al.,* 2018; Zimbabwe National Statistics Agency, 2013), women in rural areas were more likely than women in urban areas to have had sexually transmitted infections. This highlights that the burden of sexually transmitted infections is serious in rural areas than urban Zimbabwe. Furthermore, nearly half of women and men who had a sexually transmitted infection sought advice or treatment from a clinic, hospital, private doctor or other health professional (Zimbabwe National Statistics Agency, 2013). The same findings included point out that men were three times more likely than women to seek treatment from a traditional healer or any other source (11% to 3% respectively). In the same demographic and health survey, 51% of women and 43% of men did not seek any treatment when they had a sexually transmitted infection (Zimbabwe National Statistics Agency, 2013). Comparatively, the burden is more in rural areas than in urban settings where most people are educated and services more likely to be available (Zimbabwe National Statistics Agency, 2013).

Kurewa *et al.,* (2010), observed the burden and risk factors of sexually transmitted infections and reproductive tract infections among pregnant women in Zimbabwe based on the prevalence of herpes simplex virus (51.1%), Human Immunodeficiency Virus (25.6%) syphilis (1.2%), Trichomonas vaginalis (11.8%), bacterial vaginosis (32.6%) and candidiasis (39.9%). They found out that 7% of the women had genital warts whilst 3% had genital ulcers and 28% had an abnormal vaginal discharge. Fifty one percent of the women had a positive serological test for sexually transmitted infections, whilst 64% had one or more vaginal infections.

The World Health Organisation (WHO), (2012) reports that although urethral discharge rates in the country are some of the highest found in our online search, these rates have declined substantially since the mid-1990s. These trends are also seen for genital ulcer disease and other sexually transmitted infections (Teasdale *et al.,* 2018). They reflect measures taken by the then Ministry of Health and Child Welfare to control sexually transmitted Infections and prevent Human Immunodeficiency Virus (WHO, 2012). These measures include primary prevention efforts such as heavy condom promotion and distribution as well as increasing the availability of public-sector sexually transmitted Infections services and testing for gonococcal antimicrobial resistance to ensure that treatment of gonorrhoea remains effective. The Zimbabwe data on urethral discharge cases show a transient decrease followed by a marked increase between 2004 and 2006, perhaps related to a severe national economic crisis and associated disruptions in reporting systems and service delivery and perhaps exacerbated by changes in sexual practices (WHO, 2012).

Sexually transmitted reproductive tract infections remain significant in Zimbabwe, despite a declining trend in most communities (WHO, 2013). Furthermore, previous studies (Teasdale *et al.,* 2018; Kurewa *et al.,* 2012) have revealed alarming prevalence rates of 3% (genital ulcers), 7% (genital warts) and 28% (abnormal vaginal discharge). For Binga District as at 2013 – 2014, genital ulcers accounted for 30.7% - 34% of the total sexually transmitted infections. On the other hand a noticeable increase of reported cases in Siabuwa Rural Hospital was observed for abnormal vaginal discharge for the same period (26.1% – 41.7%). The study explores knowledge on reproductive tract infections among rural women thereby giving a basis for planned health education sessions for empowerment, raising awareness on the consequences of reproductive tract infections. Also, to help women improve their health seeking behaviour for reproductive tract infections. Furthermore, use findings of the study for educational purposes based on cultural factors that influence womens' decision to visit health centres when they have a reproductive tract infection. On the other hand, the study is meant to assist women to seek early treatment as a milestone towards reducing maternal mortality and morbidity. It will also help in improving collaborative efforts between

institutional (clinical) and community health strategies that facilitate to fight a scourge in reproductive tract infections; major among them sexually transmitted infections chief being Human Immunodeficiency Virus infection. The need for devotion of time and resources to women's health in rural areas will be justified. This would strengthen health education strategies. The findings will assist in promoting women of child bearing age to open up on reproductive health problems in order to reduce morbidity and mortality associated with reproductive tract infections. The purpose of this study was to assess knowledge and establish common practices on reproductive tract infections among women (18 – 49 Years) in rural Siabuwa, Binga District.

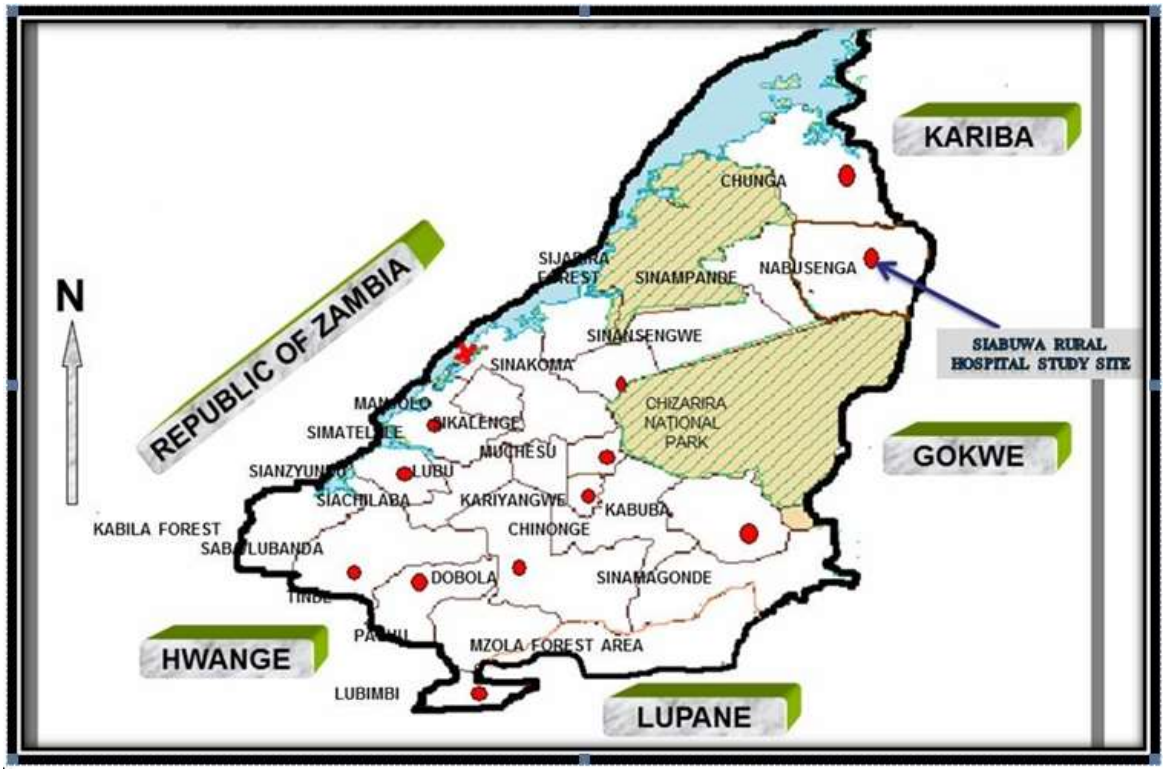

Figure 1: Map of Study Area

Source: The map above was modified from Binga District Health Information Office.

MATERIALS AND METHODS

Sample Size Determination and Data Collection

The study population included women between 18 to 49 years in the catchment area of Siabuwa Rural hospital in Binga district (Figure 1). The study employed a descriptive cross - sectional study with a convenience (quota) sampling method which was utilised based on the respondents' access to Siabuwa Rural Hospital for any healthcare from three wards [Nag/Sinampande(31%), Kalungwizi (36%) and Nabusenga (33%)], to identify a sample of one hundred and eighty women between 18 to 49 years. The women were residents of Kalungwizi, Nabusenga and Nagangala Sinampande wards. This study employed the convenience sampling. 180 questionnaires written in English and translated to Tonga were administered to collect data at the outpatient and mothers' waiting shelter. The main determinant was access to the health centre and providing an almost equivalent ratio of women sampled coming from the catchment area that Siabuwa Rural Hospital serves for medical assistance. The questionnaire was divided into three sections; the demographics, reproductive health behaviour and knowledge of reproductive tract infections. Participants had a choice of answering either the English or the translated Tonga questionnaire. Validity and reliability was done through the relevant ethics committees and experts. The Cronbach Alpha coefficient of 0.700 was obtained for the instrument and was observed to be reliable. A pilot study was conducted on five subjects who met the inclusion criteria but did not participate in the main study, while adjustments were made to the instrument thereafter. Permission to carry out the study was sought from relevant authorities at the Ministry of Health and Child Care.

RESULTS

Figure 2 shows participants by ward in the catchment area. A total of one hundred and eighty (180) participants took part in the study. They were 64 (36%) of participants from Kalungwizi ward, 60 (33%) from Nabusenga ward while 56 (31%) were from Nagangala/Sinampande ward.

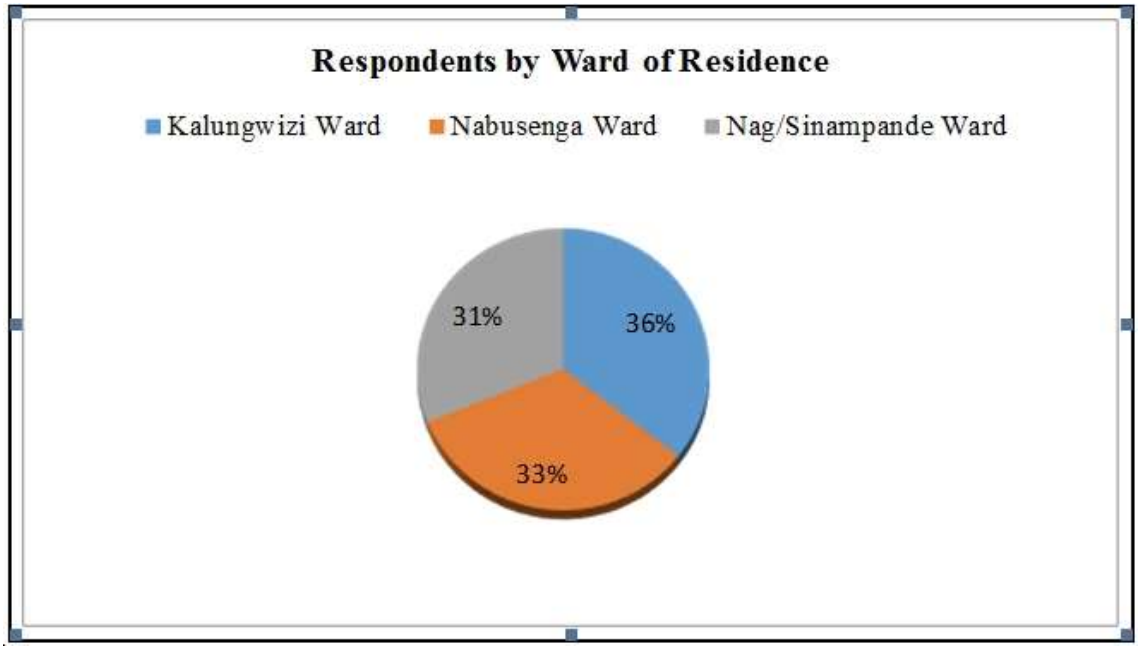

Figure 2: Participants' Ward of Residence (n=180)
Source: Census 2012 (Zimbabwe National Statistics Agency, 2013)

The highest proportion of participants (38%) were between the ages of 18 to 24 years, while (37%) were between 25 to 34 years (see Table 1). Married women were the majority (81%) among participants. The majority of women (58%) completed secondary level education. Nagangala/Sinampande ward had the majority (53%) of respondents who only completed primary education, while Christians were the majority (91%) of participants.

Table 1: ***Demographic Profile (n=180)***

VARIABLE	RESPONSE	FREQUENCY	PERCENTAGE (%)
Age	18 to 24 years	69	38.3
	25 to 34 years	66	36.7
	35 to 44 years	36	20
	45 to 49 years	9	5
Marital Status	Single	34	18.9
	Married	145	**80.6**
	Widow	1	0.6
Level of Education	Primary level	75	41.7
	Secondary level	104	**57.8**
	Tertiary level	1	0.6
Religion	Christian	163	**90.6**
	Muslim	13	7.2
	Traditionalists	4	2.2

Source: Author's Findings (2015).

Table 2: ***Mode of Delivery and Pregnancy outcome (n=180)***

VARIABLE	CATEGORY	FREQUENCY (n)	PERCENTAGE (%)
Mode of delivery of last baby	Normal vaginal delivery	149	**82.8**
	Assisted vaginal delivery	17	9.4
	Caesarean section	13	7.2
	Had not had any delivery	1	0.6
Abortions	Yes	76	42.5
	No	104	**57.5**
Type of abortion	Occurring at a hospital	30	39.5
	Spontaneous at home	45	**59.2**
	Induced at home	1	1.3
Treatment seeking for abortion	Yes	38	**82.6**
	No	8	17.4
Choice where treatment was sought	Hospital/Clinic	35	**92**
	Traditional healer	0	0
	Church	3	8
Reasons of not seeking treatment for abortion	Distance to health facility	0	0
	Fear of being handed to Zimbabwe Republic Police	6	**75**
	Treatment not necessary	2	25

Source: Author's Findings (2015).

On the mode of delivery for the last baby, Table 2 shows that the majority (83%) of the respondents delivered through normal vaginal mode. A higher percentage (42%) of respondents had experienced an abortion. Spontaneous abortions in homes were the highest (59%). Among the 46 respondents with abortion experience at homes, the majority (82.6%) sought treatment. Furthermore the majority (92%) sought treatment at a health facility.

Table 3: ***Level of Education and Treatment seeking for abortion (n=38)***

VARIABLES	PRIMARY EDUCATION		SECONDARY EDUCATION		TERTIARY EDUCATION	
	Frequency	%	Frequency	%	Frequency	%
Treatment seeking for abortion	8	21.1	30	**78.9**	0	0
Hospital as choice for treatment for an abortion	5	14.3	30	**85.7**	0	0
Did not seek treatment for abortion	8	**100**	0	0	0	0

Source: Author's Findings (2015).

Table 3 shows that for those who had a spontaneous or induced abortion at home and sought treatment, 30 (78.9%) had done secondary education. Also, among those who sought treatment at the hospital, 30 (85.7%) had attained secondary education.

Knowledge on Reproductive Tract Infections

Table 4: ***Treatment seeking for Reproductive Tract Infections (n=180)***

VARIABLES	RESPONSE	FREQUENCY	PERCENTAGE (%)
Have you suffered from Reproductive Tract Infection in the previous 12 months?	Yes	57	31.7
	No	96	53.3
	Do not know	27	15
Treatment seeking for Reproductive Tract Infection	Yes	42	**73.7**
	No	15	26.3
Choice where treatment was sought	Hospital/Clinic	36	**85.7**
	Traditional healer	0	0
	Church	6	14.3
Reasons for not seeking treatment for Reproductive Tract Infection	Fear for examination involving private body parts	11	**73.3**
	Symptoms will disappear on their own	4	26.7
	User fees	0	0
	Distance to health facility	0	0
	Symptoms do not warranty hospital/clinic visit	0	0
	Belief that it is natural process, so no need to go for treatment	0	0
Preference for treatment site in case of a Reproductive Tract Infection?	Visit hospital/clinic	114	**63.3**
	Consult church pastor	55	30.6
	Consult Traditional healer	9	5
	Self treatment	2	1.1
	Do nothing	0	0

Source: Author's Findings (2015).

Table 4 shows that 57 (32%) of participants had suffered from a reproductive tract infection in the previous 12 months. Table 4 also shows that of the forty-two (74%) who sought treatment, 36 (85%) visited the hospital. Among the 15 (26%) who did not seek treatment for symptoms suggestive of reproductive tract infection, 11(73%) were afraid of examination of their private body parts, while 4(27%) just thought the symptoms would resolve on their own. When asked about their first choice for treatment in case of presence of symptoms suggestive of a reproductive tract infection, the majority 114 (63%) prefer the hospital to other avenues
.

Table 5: ***Level of Education and Treatment seeking for Reproductive Tract Infections (n=180)***

VARIABLES	PRIMARY EDUCATION		SECONDARY EDUCATION		TERTIARY EDUCATION	
	Frequency	%	Frequency	%	Frequency	%
Suffered from reproductive tract infections	26	45.6	31	**54.4**	0	0
Lack knowledge of having suffered from reproductive tract infections	20	**74.1**	7	25.9	0	0
Treatment seeking for reproductive tract infections	7	16.7	35	**83.3**	0	0
Choice of hospital as site for treatment of reproductive tract infections	11	30.6	25	**69.4**	0	0
Aware of reproductive tract infection	55	40.7	80	**59.3**	0	0
Not aware of reproductive tract infection	26	**57.8**	19	42.2	0	0

Source: Author's Findings (2015).

Table 5 shows the relationship of education and reproductive tract infections. Of those who suffered from a reproductive tract infection, 31 (54.4%) had attained secondary education. Results also show that among those who did not know whether they had suffered from a reproductive tract infection or not, 20 (74.1%) had only completed primary education. Among respondents, who sought treatment for symptoms suggestive of a reproductive tract infection, 35 (83.3%) had done secondary education. For those who chose the hospital as treatment site for symptoms suggestive of a reproductive tract infection, 25 (69.4%) had gone for secondary education. Eighty (59.3%) of the participants who were aware of reproductive tract infections had done secondary education. Among those who were not aware of the reproductive tract infections, 26 (57.8%) had done primary education.

Table 6: ***Treatment seeking for Reproductive Tract Infections per age group (n=180)***

VARIABLES	18 - 24 YEARS		25 - 34 YEARS		35 - 44 YEARS		45 - 49 YEARS	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
a) Suffered from reproductive tract infections	15	26.3	30	**52.6**	9	15.8	3	5.3
b) Lack knowledge of having suffered from reproductive tract infections	54	43.9	36	29.3	27	21.9	6	4.9
c) Treatment seeking for reproductive tract infections	15	35.7	24	**57.1**	3	7.1	3	7.1
d) Choice of hospital as site for treatment of reproductive tract infections	12	33.3	21	**58.3**	2	5.6	1	2.8
e).Aware of reproductive tract infection	47	34.8	50	37.0	29	21.5	9	6.7
f).Not aware of reproductive tract infection	22	48.9	16	35.6	7	15.5	0	0

Source: Author's Findings (2015).

Table 6 shows that the age group 18 – 24 years had the majority of respondents (52.6%) who had suffered from a reproductive tract infection. Among those who sought treatment, 24 (57.1%) were between 25 – 34 years. Table 6 also illustrates that, among those who visited the hospital for treatment, twenty-one (58.3%) were between the ages 25 – 34 years.

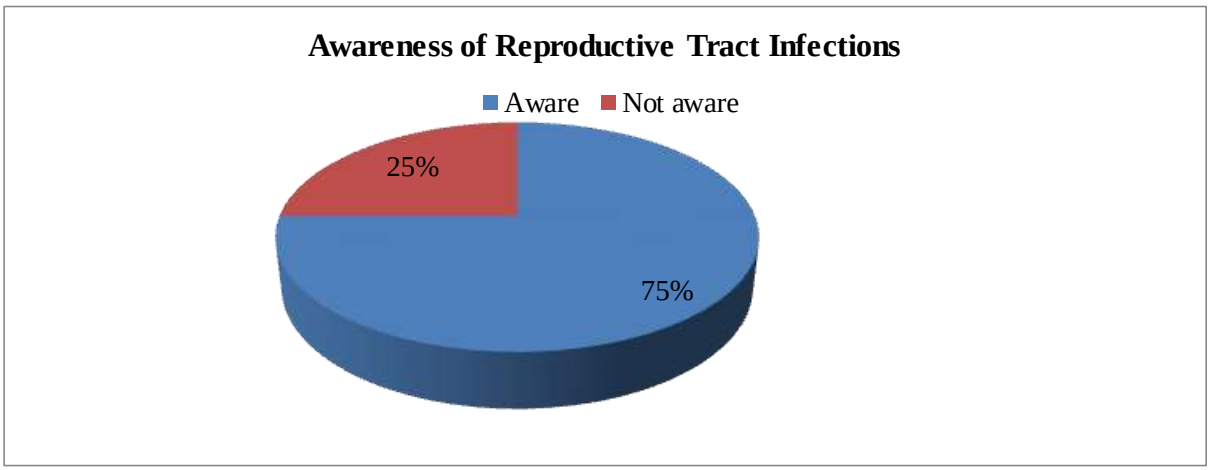

Figure 3: Knowledge on Reproductive Tract Infections (n= 180)
Source: Author's Findings (2015).

Figure 3 shows clearly that the majority, 135 (75%) are aware of the reproductive tract infections, while a few 45 (25%) are not aware of reproductive tract infections. Figure 4 shows sources of information on reproductive tract infections. Clearly the hospital (70%) is by far the greatest source of information. Figure 5 shows that both group information and individual consultations were the commonest ways reported by participants accounting to 44 (47%) and 38 (40%) respectively.

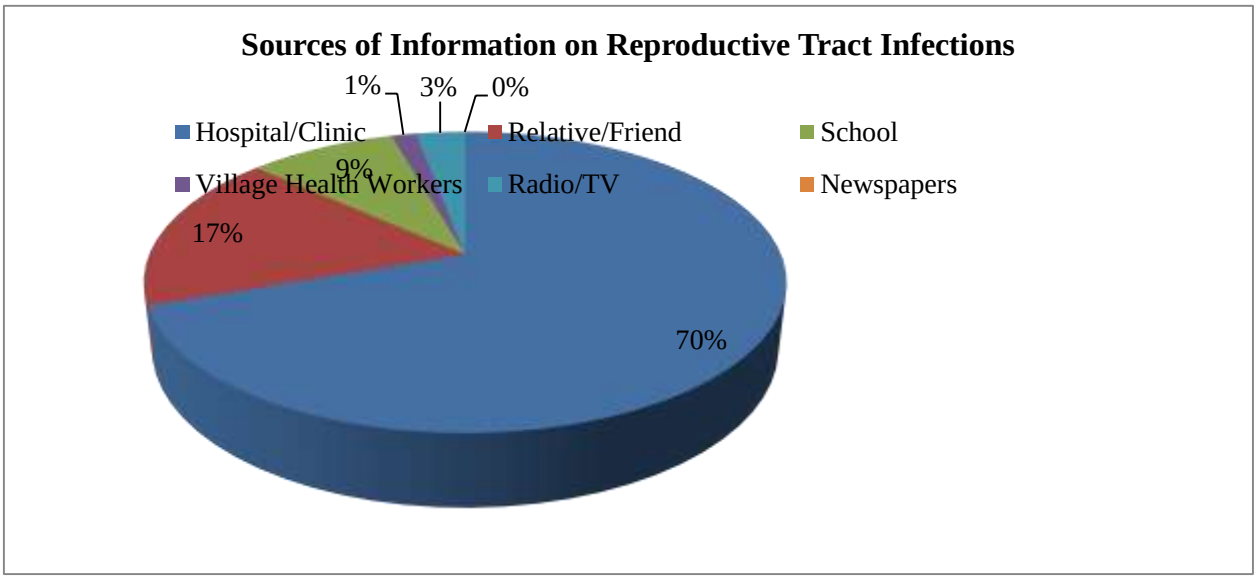

Figure 4: Sources of information on Reproductive Tract Infections (n= 135).
Source: Author's Findings (2015).

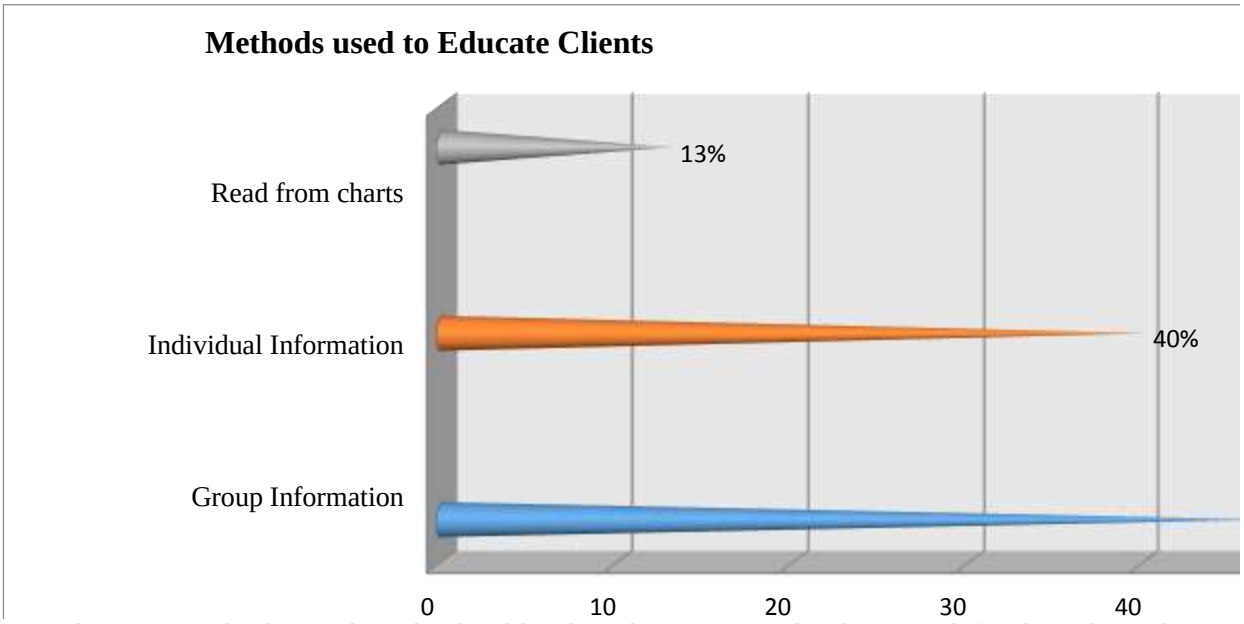

Figure 5: Methods used to give health education on reproductive tract infections (n= 94).
Source: Author's Findings (2015).

Table 7: Knowledge on simple definition of reproductive tract infections (n = 135).

VARIABLE	TRUE		FALSE		DO NOT KNOW	
	Frequency	%	Frequency	%	Frequency	%
a) Any infections affecting the genital tract	30	22.2	19	14.4	86	**63.3**
b) Human Immunodeficiency Virus	27	20	28	20.6	80	**59.4**
c) Sexually transmitted infections	77	**57.2**	15	11.1	43	31.7

Source: Author's Findings (2015).

Table 7 shows responses on the nature of reproductive tract infections. The majority 86 (63%) did not know the definition of reproductive tract infection. Again the majority 80 (59%) did not know that Human Immunodeficiency Virus can affect the reproductive tract. The majority 77 (57%) however identified that sexually transmitted infections are reproductive tract infections. Overall, findings show that 66.9% do not have knowledge on what reproductive tract infections are.

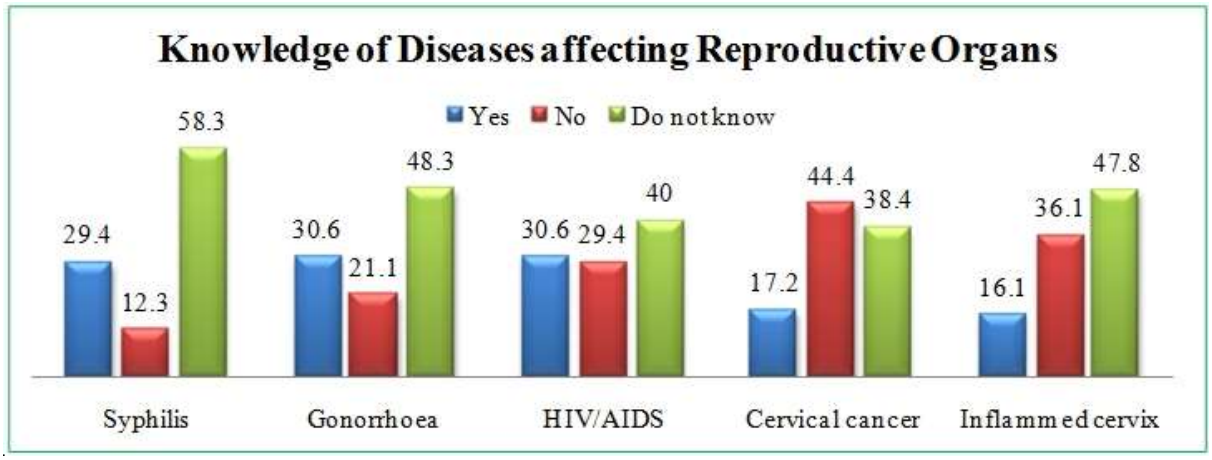

Figure 6: Knowledge of diseases affecting female reproductive organs (n=135).
Source: Author's Findings (2015).

Figure 6 shows responses on selected diseases that affect the reproductive tract. The majority of participants did not know that Syphilis (58.3%) was reproductive tract infections. Overall, results show that 24.8% of participants had knowledge of diseases that affect the reproductive tract organs.

Table 8: Knowledge on symptoms of reproductive tract infections (n= 180)

Symptom	True		False		Do Not Know	
	Frequency	%	Frequency	%	Frequency	%
a) Abnormal vaginal discharge	68	**50**	26	19.4	41	30.6
a) Vulval itching	70	**51.7**	39	28.9	26	19.4
b) Lower abdominal pain	63	46.7	36	26.7	36	26.7
c) Pain during urination	64	47.8	21	15.6	50	36.7
d) Genital ulcer	73	**53.9**	28	21.1	34	25
e) Pain during menses	63	46.7	20	15	52	38.3
f) Genital/ groin swelling	72	**53.3**	31	22.8	32	23.9
g) Pain during sexual intercourse	64	47.8	22	16.1	49	36.1
h) Spotting during sexual intercourse	63	46.7	19	13.9	53	39.4

Source: Author's Findings (2015).

Table 8 displays the responses on symptoms of reproductive tract infections. The majority of participants correctly identified the symptoms of reproductive tract infections (see Table 8). However combined responses for those who answered false and those who answered do not know, indicate that there is a significant number who lack knowledge on this aspect of the reproductive tract infections.

Table 9: Knowledge of predisposing factors to reproductive tract infections (n= 180)

PREDISPOSING OR RISK FACTOR	TRUE		FALSE		DO NOT KNOW	
	Frequency	%	Frequency	%	Frequency	%
a) Presence of an intra-uterine contraceptive device	59	43.9	23	17.2	53	38.9
b) Following a spontaneous abortion	54	40	27	20	54	40
c) Following an induced abortion	43	32.2	33	24.4	59	43.3
d) Use of vaginal herbs	76	**56.1**	34	25.6	25	18.3
e) Unprotected sexual intercourse	77	**57.2**	31	22.8	27	20
f) Giving birth assisted through use of instruments	70	**52.2**	13	9.4	52	38.3

Source: Author's Findings (2015).

Table 9 above presents responses on knowledge of predisposing factors to reproductive tract infections. The use of vaginal herbs (56.1%), unprotected sexual intercourse (57.2%), as well as vaginal instrumental delivery (52.2%) were highly perceived as predisposing factors to reproductive tract infections.

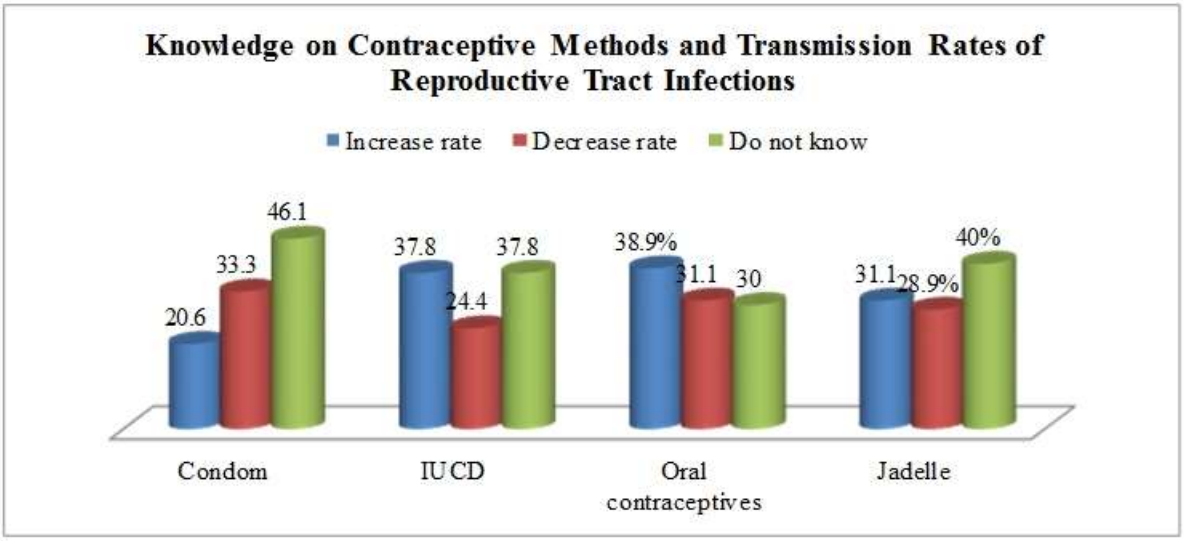

***Figure 7: Knowledge on contraceptive methods and transmission rates of Reproductive Tract** Infections.*
Source: Author's Findings (2015).

Figure 7 shows responses on the effects of contraceptive methods on transmission rates of reproductive tract infections. There were low percentages on the knowledge on contraceptive methods and transmission rates of reproductive tract infections.

Table 10: Knowledge of effective preventive methods against reproductive tract infections (n=135)

PREVENTIVE METHOD	EFFECTIVE METHOD		INEFFECTIVE METHOD		DO NOT KNOW	
	Frequency	%	Frequency	%	Frequency	%
a) Correct and consistent condom use	74	**55**	26	19.4	35	25.6
b) Abstinence	50	37.2	33	24.4	52	38.3
c) Single faithful sexual partner	68	**50.6**	31	22.8	36	26.7
d) Multiple sexual partners	35	26.1	57	42.2	43	31.7
e) Giving birth at a health facility	66	48.9	32	23.9	37	27.2
f) Proper menstrual hygiene	56	41.1	31	23.3	48	35.6

Source: Author's Findings (2015).

Table 10 presents responses on knowledge of preventive methods against reproductive tract infections. Seventy-four (55%) respondents agreed that proper and consistent use of condoms is an effective preventive method against reproductive tract infections. Sixty-eight (51%) indicated they are in agreement that having a single faithful sexual partner was an effective preventive method against reproductive tract infections. This also shows lack of knowledge on this important aspect of prevention methods.

Table 11: Analysis of Knowledge Scores (n=180)

VARIABLE	MINIMUM OBTAINED	MAXIMUM OBTAINED	RANGE	MEAN	MAXIMUM POSSIBLE SCORE
Knowledge Score	20%	57.2%	37.2%	42.5%	100%

Source: Author's Findings (2015).

From a maximum possible score of 100% on knowledge scores, Table 11 shows that the minimum knowledge score obtained was 20% and the maximum knowledge score obtained was 57.2%, giving a range of 37.2%. A mean knowledge score of 42.5% was obtained, which is below the normal average mark of 50%.

Table 12: Knowledge on curability of reproductive tract infections (n= 180)

CURABILITY KNOWLEDGE ON REPRODUCTIVE TRACT INFECTIONS	TRUE		FALSE		DO NOT KNOW	
	FREQUENCY	%	FREQUENCY	%	FREQUENCY	%
a) Infections affecting the reproductive organs are curable	103	**76.1**	8	5.6	24	18.3
b) Infections affecting the reproductive organs can be prevented	112	**82.8**	0	0	23	17.2
c) Infections affecting the reproductive organs predispose to HIV/AIDS	52	38.8	30	22.2	53	39.4
d) Sexually transmitted infections are part of infections affecting the reproductive organs	85	**62.8**	20	15	30	22.2
e) Medical treatment is effective against infections affecting the reproductive organs	104	**77.2**	16	12.2	15	10.6
f) Spiritual treatment through prayer is the best treatment for infections affecting the reproductive organs	53	39.4	64	47.2	18	13.3
g) Traditional herbs are effective for treating infections affecting the reproductive organs	19	14.4	72	**52.8**	44	32.8

Source: Author's Findings (2015).

The majority 103 (76.1%) of participants assert that reproductive tract infections are curable (Table 12). To the statement that infections affecting the reproductive organs are preventable, 112 (82.8%) affirm that it true. Eighty-five (62.8%) of the participants agree that sexually transmitted infections are part of the reproductive tract infections. The majority 139 (77%) of participants agree that medical treatment is effective against reproductive tract infections. The perception that traditional herbs are effective against reproductive tract infections attracted 72 (52.8%) who disagreed as to whether it is effective or not.

Table 13: Knowledge on complications of reproductive tract infections (n= 180)

COMPLICATION OF REPRODUCTIVE TRACT INFECTION	YES		NO		DO NOT KNOW	
	FREQUENCY	%	FREQUENCY	%	FREQUENCY	%
a) Failure to conceive	64	47.2	45	33.3	26	19.4
b) Cancer of cervix	77	56.7	17	12.8	41	30.6
c) Bleeding heavily	55	41.1	35	25.6	45	33.3
d) Pregnancy outside the womb (ectopic)	37	27.2	41	30.6	57	42.2
e) Pain in the lower abdomen that persist for years	64	47.2	32	23.9	39	28.9
f) Loss of pregnancy before time	69	51.1	28	20.6	38	28.3
g) Birth of a dead child	60	44.4	28	21.1	46	34.4
h) Birth of an abnormal child	38	28.3	41	30	56	41.7

Source: Author's Findings (2015).

The majority, 77 (56.7%) of participants agreed that cancer of the cervix is a long term effect of the presence of reproductive tract infections (Table 13). Spontaneous abortions were supported by 69 (51.1%) as long term effects of the presence of reproductive tract infections. On analysis of the results of this section, 57% had knowledge deficiency for long term sequelae resulting from reproductive tract infections.

Table 14: Reproductive Health Behaviour (n=180)

	REPRODUCTIVE HEALTH BEHAVIOUR	YES		NO	
		Frequency	%	Frequency	%
A	Do you wash genital area during menstruation	176	**97.8**	4	2.2
B	Do you change your undergarment daily	176	**97.8**	4	2.2
C	Do you take a bath everyday	179	**99.4**	1	0.6
D	Do you wash genital area before sexual intercourse	160	**88.9**	20	11.1
E	Do you wash genital area after sexual intercourse	168	**93.3**	12	6.7
F	Do you dry genital area with a piece of cloth after using toilet or sexual intercourse	157	**87.2**	23	12.8
G	Does your partner wash his genital area before sexual intercourse	148	**82.2**	32	17.8
H	Do you wash genital area after using the toilet	119	**66.1**	61	33.9

Source: Author's Findings (2015).

The results show that among participants, the majority have good reproductive health hygiene reflected by 176 (98%), 160 (89%) and 168 (93%) of participants who stated that they wash their genitals during menstruation, before and after sexual intercourse respectively (Table 14). Furthermore, the majority daily change undergarments, take a bath on a daily basis, dry the genital area after sexual intercourse and after toilet use, 176 (98%), 179 (99%) and 157 (87%) respectively. Partner genital hygiene or washing before sexual intercourse, attracted 148 (82%) who agreed to this practice as positively done.

Table 15: Barriers to health care (n=180)

During my last visit to the clinic, I was seen	YES		NO	
	FREQUENCY	%	FREQUENCY	%
a) In the sister/doctor's consultation room with traffic of personnel	91	**50.6**	89	49.4
b) In a quiet sister/doctor's consultation room with no disturbance	120	**66.7**	60	33.3
c) In the sister/doctor's consultation room with door open	106	**58.9**	74	41.1
d) In the sister/doctor's consultation room with door closed.	108	**60**	72	40
e) Outside the consultation room	96	**53.3**	84	46.7
Physical examination was done				
a) On a couch with screens around	86	47.8	94	**52.2**
b) While I was covered with a sheet except area under examination	73	40.6	107	**59.4**

Source: Author's Findings (2015).

Ninety-one (51%) of participants agree that they were consulted in the consultation room which had traffic of personnel, while 89 (49%) disagreed (Table 15). To being consulted by a sister in a room that had no disturbance, 120 (67%) agreed. One hundred and six (59%) participants report that they were consulted in a room with the door open. The majority 108 (60%) confirm that they were consulted in a room with a closed door. Some participants claim that they were consulted outside the consultation room as reported by 96 (53%). Table 15 further illustrates that physical examination was done on respondents with 94 (52%) stating that screens were available during their physical examination on a couch. One hundred and seven (59%) participants state that most of their bodies were covered during their physical examination.

DISCUSSION

Demographic Characteristics

Thirty-eight percent of participants were between the ages of 18 to 24 years, while 37% were between 25 to 34 years which is slightly different from Hegde *et al.,* (2013) where the age group 25 to 34 years accounted for the highest proportion (47.5%) of participants. Furthermore, previous studies found similar patterns of age distribution (Mamta and Kaur, 2014; Verma *et al.,* 2015). Mani (2014), viewed the age groups 18 to 24 years and 25 to 34 years as the groups which demand antenatal, postnatal and child services more frequently and as such would seek care for themselves in the process. Eighty – one percent of study participants were married women and this result was similar to previous studies (Li *et al.,* 2010; Hedge *et al.,* 2013). Small proportions of the participants were widowed, single and divorced a finding similar to previous studies (Mamta and Kaur, 2014). On level of education, 41% completed primary education, 58% completed secondary level education. This was observed to be similar to previous studies (Verma *et al.,* 2015; Mamta and Kaur, 2014; Lan *et al.,* 2009). On the other hand previous studies show that there was no significant difference in findings of levels of primary and secondary education (Mani, 2014; Razia, Ashraf and Saad, 2013). Literacy contributes to understanding of health issues and makes individual clients make informed decisions. A well informed clientele participates in both health promotion and preventive measures and strive to keep themselves healthy towards the wellness dimension of illness – wellness continuum. With regard to religion, Christians were the majority with 91%. This reflects the composition of the whole community of Siabuwa area where Christians are more than any other religious groups. Furthermore, this was consistent with previous studies (Rabiu, Adewunmi, Akinlusi and Akinola, 2010).

Knowledge on Reproductive Tract Infections

Thirty – two percent of participants had suffered from a reproductive tract infection in the previous 12 months. This was almost similar to results of previous studies (Xu *et al.,* 2019; Hegde *et al.,* 2013; Bhawsar, Singh and Khanna, 2011; Mani, Annadurai and Danasekaran, 2013; Ramia *et al.,* 2012). On the other hand other studies revealed higher rates of reproductive tract infections (Nguyen, Kurtzhals, Do and Rasch, 2009; Zhing – fang *et al.,* 2012; Zhang *et al.,* 2009; Dong *et.al.,* 2010; Kosambiya, Desai, Bhardwaj and Chakraborty, 2009). Although not conclusive, there is a decline in the prevalence of reproductive tract infections in Zimbabwe as noted by the World Health Organization (2012). From a reported high prevalence of 64% by Kurewa *et al.,* (2010), the study findings of 32% shows a decline by 50%.

This highest prevalence (52.6%) of reproductive tract infections was found in the age group 25 to 34 years which was slightly different from results reported by previous studies (Verma *et al.,* 2015). The findings from this study concur with Kosambiya, Desai, Bhardwaj and Chakraborty, (2009), and Sharma *et al.,* (2009), who agree that the highest prevalence of reproductive tract infections was in the age group 25 to 34 years. However, Mani (2014) indicated a high prevalence of reproductive tract infections in the age group 18 to 24 years with 57.1%.

The prevalence of 45.6% for primary education attainment is lower than 54.4% for those with secondary education in this study. The results are almost similar to those reported by previous studies

(Mani, 2014; Mani, Annadurai and Danasekaran, 2013; Desai and Patel, 2011; Ramia *et al.,* 2012).

This study shows that 73.7% sought treatment for symptoms suggestive of reproductive tract infection which is consistent with Ravi and Kulasekaran, (2014). However previous studies show lower levels as compared to the current study (Mani, Annadurai and Danasekaran, 2013; Verma *et al.,* 2015; Prasad *et al.,* 2005; Garg *et al.,* 2001; Desai and Patel, 2011). Among the forty two who sought treatment for a reproductive tract infection, 85% visited the hospital a level higher than that found by previous studies (Mani, Annadurai and Danasekaran, 2013).This utilisation of health care is consistent with results found in similar studies (Rabiu, Adewunmi, Akinlusi and Akinola, 2010; Ravi and Kulasekaran, 2014). However, some studies (Hedge *et al.,* 2013) disagree as they reported poor access to health care services which contributes significantly to increased prevalence of reproductive tract infections.

Sixty-three percent (63%) of the respondents preferred the hospital as their first choice of treatment site to other avenues. This revealed that utilisation of medical health care is the mode considered best among study participants. However a considerably significant number accounting to 31% preferred consulting the church pastor as first choice for treatment of symptoms suggestive of a reproductive tract infection. Previous studies reviewed show that reproductive tract infections are surrounded by beliefs that fail to correspond to the biomedical model of causation but rather reflect the gender and cultural determinants (Gardner and Elias, 2010; Vaughn *et al.,* 2009; Holland and Hogg, 2010). Societies who hold this belief, especially Christians are likely to visit the church for faith healing rather visiting the hospital for the biomedical approach. The findings from this study point out that, there are a significant number of respondents whose first choice for treatment of reproductive tract infections was visiting the pastor.

Previous studies concur that poor access to health care services contributes significantly to increased prevalence of reproductive tract infections, coupled with poor knowledge or awareness and some asymptomatic reproductive tract infections, results in an increase of the burden of reproductive tract infections (Devi and Swarnalatha, 2007; Li *et al.,* 2010; Chellan, 2012; Hedge *et al.,* 2013). Seventy-three percent of study participants were afraid of examination of their private body parts for symptoms suggestive of a reproductive tract infection. This concurs with findings (Razia, Ashraf and Saad, 2013; Devi and Swarnalatha, 2007; Li *et al.,* 2010; Chellan, 2012; Hedge *et al.,* 2013) who reported that among reasons why women would not seek medical care for symptoms suggestive of reproductive tract infection is their shyness for genital examination. The prevalence of reproductive tract infections is lower (45.6%) for those who only attained primary level of education than those who did secondary education (54.4%). The findings were similar to previous studies (Mani, 2014), although other studies indicated that respondents who have attained tertiary education (27.3%) had suffered from a reproductive tract infection. Seventy-five percent in this study were aware of the reproductive tract infections which is similar to previous studies although higher than the current study (Rabiu, Adewunmi, Akinlusi and Akinola, 2010; Bahwsar *et al.,* 2011). In contrast to current findings, other studies found lower levels of awareness on reproductive tract infections (Desai and Patel, 2011; Lalima, 2010; Zhonghua, Xing and Xue, 2010; Razia, Ashraf and Saad, 2013; Ravi and Kulasekaran, 2014).

Seventy percent of participants in this study cited the hospital as the largest source of information on reproductive tract infections. This is in contrast to what obtained in other studies (Ravi and Kulasekaran, 2014), where health care workers' contribution was observed to be insignificant. Only 1% and 2% mentioned the radio, television and print media (newspapers) as sources of information on reproductive tract infections. This is consistent with Sihavong *et al.,* (2011), who noted that the main media sources of reproductive tract infections and sexually transmitted infections information are radio, television, and access to health information was very difficult in rural areas. However, this was not consistent with findings obtained in rural China (Zhing-fang *et al.,* 2012), who noted that the television and radio broadcasts contributed as a major source of information on reproductive tract infections. The findings in this study also revealed that relatives and friends contributed lower levels of knowledge as compared to previous studies (Zhing-fang *et al.,* 2012). To the contrary other studies (Ravi and Kulasekaran, 2014) observed that friends and relatives contributed significantly as compared to school teachers, television and print media as sources of reproductive health information. Furthermore, other studies found out that the main media sources of knowledge were electronic media, friends and relatives (Razia, Ashraf and Saad, 2013).

A low percentage (20%) managed to give the simple definition of reproductive tract infection as supported by previous studies (Desai and Patel, 2011; Razia, Ashraf and Saad, 2013; Mani, 2014). Fifty – seven percent however identified that sexually transmitted infections are reproductive tract infections a figure higher than those observed in other studies (Ravi and Kulasekaran, 2014). Regarding names of selected diseases that affect the reproductive tract, syphilis (29%) and gonorrhea (31%) were perceived as reproductive tract infections. These findings are higher than those observed in Nigeria (Rabiu, Adewunmi, Akinlusi and Akinola, 2010). A low number of respondents (17%) mentioned cancer of the cervix (17%) and cervicitis (16%) as reproductive tract infections. Furthermore, findings of this study show a low mean knowledge score of 24.8% for the overall knowledge of names for the selected diseases that affect the reproductive tract organs.

A high proportion of respondents identified abnormal vaginal discharge (50%) as a symptom of reproductive tract infections. However, previous studies had higher levels observed (Ravi and Kulasekaran, 2014). However, other studies elsewhere had lower levels (Hedge *et al.,* 2013; Verma *et al.,* 2015; Mani, 2014; Kosambiya, Desai, Bhardwaj and

Chakraborty, 2009). Mani, (2014), observed that previous studies concurred that abnormal vaginal discharge is the most frequent symptom of reproductive tract infections (Patel *et al.,* 2005; Samanta, Ghosh and Mukherjee, 2011; Kosambiya, Desai, Bhardwaj and Chakraborty, 2009; Acharya, Yadavk and Baridalyne, 2006). Fifty-three percent (53.9%) identified genital ulcer as a symptom of reproductive tract infections which is in contrast with Rabiu, Adewunmi, Akinlusi and Akinola, (2010), and Kosambiya, Desai, Bhardwaj and Chakraborty, (2009), where genital sore was poorly perceived (8%) as a symptom of reproductive tract infections.

Most respondents stated vulval itching (51.7%) and agreed that pain (47.8%) during urination is a symptom of reproductive tract infections which is similar although higher than previous studies that observed vulval itching (42.1%) and pain (41.7%) during sexual intercourse (Ravi and Kulasekaran, 2014; Hedge *et al.,* 2013). Some studies (Durai *et al.,* 2019; Mani, 2014), also found contrasting findings of 5.4% who acknowledged dysuria as a symptom. Furthermore, the highest proportion of respondents 46.7% identified lower abdominal pain (46.7%) and pain (47.8%) during sexual intercourse as symptoms of reproductive tract infection. These findings are higher than those for previous studies where respondents reported dyspareunia (8%) and spotting (12.7%) during sexual intercourse as symptoms of reproductive tract infections (Kosambiya, Desai, Bhardwaj and Chakraborty, 2009; Ravi and Kulasekaran, 2014).

Previous studies observed drastically lower levels of women (1%) who were able to identify inguinal swelling, painful scrotal swelling and burning micturition as a symptom of reproductive tract infections and sexually transmitted infections (Kosambiya, Desai, Bhardwaj and Chakraborty, 2009). This is in contrast with the current study where burning micturition (47.8%) has been viewed as a symptom of reproductive tract infections. More than half of the respondents (50.6%) lack knowledge on symptoms of reproductive tract infections. These results concur with previous studies (Rabiu, Adewunmi, Akinlusi and Akinola, 2010), who observed the overall knowledge on symptoms and complications as very poor. The highest proportion of respondents (44%) agrees that the presence of an intrauterine contraceptive device predisposes women to reproductive tract infections which is similar to previous studies (Rahman *et al.,* 2012). Both spontaneous and induced abortions were poorly perceived as predisposing factors to reproductive tract infections.

More than half of the respondents (55%) agreed that proper and consistent use of condoms is an effective preventive method against reproductive tract infections. This is in contrast to previous studies with lower levels obtained (Zhing-fang *et al.,* 2012; Kosambiya, Desai, Bhardwaj and Chakraborty, 2009; Lan *et al.,* 2009; Li *et al.,* 2010). On single faithful sexual partner, 50.6% agree that it is an effective preventive method which concurs with previous studies (Lan *et al.,* 2009; Kosambiya, Desai, Bhardwaj and Chakraborty, 2009). The overall knowledge score for symptoms of reproductive tract infections in this study was 45.8%, seconded by previous studies (Kosambiya, Desai, Bhardwaj and Chakraborty, 2009). Furthermore, similar studies show even lower levels of overall knowledge on preventive measures for reproductive tract infections (Zhonghua, Xing and Xue, 2010).

The majority (76%) of participants assert that reproductive tract infections are curable. The findings were almost similar to those reported by other studies (Ravi and Kulasekaran, 2014). In relation to infections affecting the reproductive organs being preventable, 83% of the study participants affirmed that it is true, which is higher than findings by Ravi and Kulasekaran, (2014).

Relating to knowledge on long term sequelae of reproductive tract infections, failure to conceive (47%) was perceived as a long term complication of presence of reproductive tract infections. This is lower than what was reported by other studies (Rabiu, Adewunmi, Akinlusi and Akinola, 2010). The majority of participants (57%) agreed that cancer of the cervix is a long term effect of the presence of reproductive tract infections. The findings also showed that bleeding heavily as long sequelae was viewed by 41% as true and only 27% agreed that ectopic pregnancy is sequelae of reproductive tract infections. Other studies (Diadhhiou *et al.,* 2019; Teasdale *et al.,* 2018; Rabiu, Adewunmi, Akinlusi and Akinola, 2010), agree with the current study findings that knowledge of symptoms and complications was poor among their study participants.

The highest proportion of participants (47%) agreed that chronic lower abdominal pain is a long term effect of the reproductive tract infections. Spontaneous abortions were supported by 51% as long term effects of the presence of reproductive tract infections. For stillbirths and congenital abnormalities as sequelae of the presence of reproductive tract infections, 44% and 28% agreed respectively. The mean knowledge score was 43% among participants who had knowledge for long term sequelae resulting from reproductive tract infections and this was similar to observations in other studies (Diadhhiou *et al.,* 2019). In this study 43% of participants had overall knowledge on complications of reproductive tract infections where as Rabiu, Adewunmi, Akinlusi and Akinola, (2010), reported that the overall knowledge on complications was very poor as only 7.0% had good knowledge score while 22.2% had knowledge rated as fair against a significant score of 70.8% who were rated with poor knowledge.

An overall mean knowledge score of 42.5% was obtained in this study. Rabiu, Adewunmi, Akinlusi and Akinola, (2010), shared almost similar findings that there was overall poor reproductive tract infections knowledge among their study participants. Rabiu, Adewunmi, Akinlusi and Akinola, (2010), cites a study in Kenya by Wools *et al.,* (1998), who reported 96%, overall mean knowledge of reproductive tract infections, while in contrast to the current study findings of 42.5%. These findings are in contrast with observed by previous studies (Khan *et al.,* 1997). Zhonghua, Xing and Xue, (2010) noted that the

majority (52.8%) of participants had heard about reproductive tract infections. Several previous studies (Rabiu, Adewunmi, Akinlusi and Akinola, 2010; Dawn and Biswas, 2005) observed that the majority of respondents had knowledge of reproductive tract infections contrasting with current study findings of 42.5%.

The majority (98%) of participants stated that they wash their genitals during menstruation, a finding which was not consistent with those found by Li *et al.,* (2010). Also, 89% wash their genital area before sexual intercourse while 93% wash genitals after sexual intercourse, which also is in contrast with Li *et al.,* (2010). Most (98%) participants change their undergarment on a daily basis which also contrasts with other studies (Li *et al.,* 2010). Also, most (99%) study participants take a bath on a daily basis which was also in contrast with Li *et al.,* (2010). Furthermore, most (59%) of the study participants had most of their bodies covered during physical examination, while 41% were examined with their bodies not covered, and this tallies with previous studies (Prabha, Sasikala, and Bala, 2012). This shows that lack of privacy at health care facilities is among the major barriers to treatment seeking for reproductive tract infections.

CONCLUSION

The findings show that there is lack of knowledge on reproductive tract infections among study participants. This reflects a potential importance of health education interventions to improve reproductive tract infections knowledge for the general women of child bearing age population. Thirty-two percent of the study participants reported having symptoms of reproductive tract infection, suggesting that though less than other studies (Kurewa *et al.,* 2010); there is still a significant problem of reproductive tract infections in rural areas.

RECOMMENDATIONS

Similar studies may be conducted with larger samples in different settings in order to compare and generalize the findings. On the basis of findings of this study, interventional studies may be done to benefit the community. Also, awareness and knowledge needs to be improved on the subject to initiate meaningful preventive measures for control of reproductive tract infections. This implies that health intervention measures directed towards reducing morbidities and mortalities from reproductive tract infections will be required rather than disease preventing strategies. These include reproductive and sex education on the prevention of the infections by avoidance of high risk sexual behaviours, use of barrier contraception and regular hospital visits as reproductive tract infections are often asymptomatic. Furthermore, reproductive tract infections preventive programmes have been integrated into other reproductive health care programmes such as family planning, maternal and child health services with a view to providing a broad based reproductive health care, however strengthening is required to realise intended outcomes and benefits.

DATA AVAILABILITY

The data used to support the findings of this study are available from the corresponding author upon request.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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