Reproductive Tract Infections (RTI) among Married Women of Reproductive age in Kaski District of Nepal

[1]Damaru Prasad Paneru
[1]School of Health and Allied Sciences, Pokhara University, Kaski, Nepal

ABSTRACT

Reproductive morbidities leads to wide range of health consequences like ectopic pregnancy, pelvic inflammatory disease, miscarriage, infertility and other multiple health consequences. Main objective of the study was to identify Reproductive Tract Infections (RTI) and associated factors among married women of reproductive age in Kaski district of Nepal. An institution based cross sectional study was conducted during October- December 2010 in 7 selected Primary Health Care Centre and Health Posts of Kasi district. A total of 282 married women of reproductive age attending in either of the selected health facility for perceived complaints of reproductive health problems were probed for RTI symptoms. Data were collected by trained enumerators and analyzed by SPSS (16.0 Version). Chi square, Fisher's exact test, spearman's correlation coefficient and Odds ratio were calculated. Symptomatic prevalence of RTI was observed to be 78.9 percent. Curdy and watery vaginal discharge was most commonly experienced symptoms. Significant factors associated with RTI symptoms were illiteracy (>5 times risk), menstrual irregularity, sexual intercourse during menstruation (>8 times risk) and no cleaning of genitalia after sexual intercourse (>3 times risk). Only few had received treatment against perceived RTI; majorities were treated in private medicals. Perception of symptoms as normal, expensive treatment, feeling of shy, lack of female heath workers were identified as major reasons for non seeking treatment for RTI. Prevalence of RTI symptoms was unexpectedly high. Highest attribution was explained by illiteracy and no cleaning of genitalia after sex. Awareness raising and behavior change communication interventions are suggested to prevent and control reproductive tract infection.

Key words: *Reproductive tract infection, Prevalence, Married women, Factors, Kaski,*

Corresponding address: *Damaru Prasad Paneru, School of Health and Allied Sciences, Pokhara University, Kaski, Nepal. E-mail: damaru.paneru@gmail.com*

INTRODUCTION

Reproductive morbidities cover wide range of diseases and conditions in which one can suffer from endogenous and externally introduced infections.[1] Global prevalence of reproductive morbidities accounts 22% for women. Over 340 million curable sexually transmitted Reproductive Tract Infections (RTI) and more incurable Sexually Transmitted Infections (STI) occur annually. These were particularly highest in South Asia and sub-Sahara Africa.[2]

These RTIs carry a high economic burden as well as enormous health consequences. RTIs have overlapping categories, called endogenous, sexually transmitted and iatrogenic, reflecting how they are acquired and spread.[3] RTIs are most important causes of maternal and peri-natal morbidity and mortality. Serious complications of these RTI include entopic pregnancy, Pelvic Inflammatory Diseases, Preterm labor, miscarriage, still birth, congenital infection, infertility, genital cancer and risk of HIV infection.[4]

Burden of RTIs among Nepalese women is still not precisely estimated and reported accurately. A clinic based study from Maternity hospital, Thapathali, Kathanadu showed that the commonest infection was candidasis (78%) presenting with extensive itching, bacterial vaginosis (25%), Trichomonas (17%) and gonorrhoea (3%) respectively while data on district level is very limited. In this context, present study was conducted to identify Reproductive Tract Infections and associated factors among Married women of reproductive age in Kaski district of Nepal.

METHODS

An institution based cross sectional study was conducted during October- December 2010 in seven randomly selected peripheral level health facilities of the Kaski districts namely Primary Health Care Centre and Health Posts. A total of 282 married women of reproductive age were selected from all randomly chosen health facilities. Married women attending on these facilities for the any perceived complaints of reproductive health problems were asked for the RTI symptoms. Data were collected by trained enumerators of health science backgrounds and analyzed by SPSS (16 versions). Results were presented in table and figures and chi square, fisher's exact test, spearman's correlation coefficient and Odds ratio were calculated.

RESULTS

In this study, RTI was defined as "the complaints of at least 2-3 presenting symptoms corresponding to universal definition of RTI". Study revealed that only 50.4% had heard about the RTI and 81 percent had correct knowledge of RTI symptoms.

Table 1: Participants by the status of Knowledge and experiences of RTI

Status	Frequency	Percentage
Heard about RTI (**n=282**)		
Yes	142	50.40
No	140	49.60
Meaning known about RTI(n=142)		
Correct answer	115	81.00
Incorrect answer	27	19.00
Experience of RTI (since last year to current status, n=142)		
Yes	112	78.90
No	30	21.10
Total	142	100.0

About 78.9 percent had some conditions suggestive of reproductive tract infections. Most commonly experienced symptoms were backache and low abdominal pain. More than half of the respondents reported watery discharge suggestive of trichomonal infection, about a quarter of the respondents complained curdy discharge and vulval itching with other constitutional symptoms suggestive of fungal infection. Blood stained discharge, genital ulceration; inguinal swelling etc. suggests bacterial infection and/or viral infection as shown in figure 1.

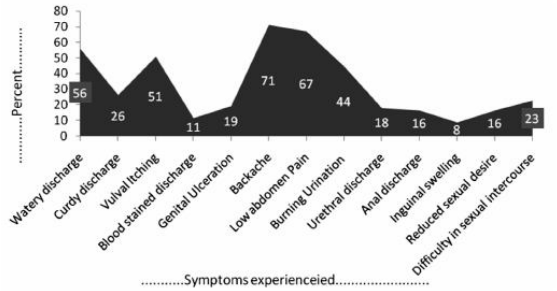

Figure 1: Participants by symptoms experienced

Factors associated with Reproductive tract infection

There was insignificant differences in (< 30 Vs ≥ 30 years) prevalence of RTI (P>0.05). A high prevalence was observed among illiterates, compared to literate women. Fisher's Exact test shows significant relationship ($p < 0.01$) and correlation is significant ($p<0.05$).

Table 2: Socio-demographic variables and RTIs

variables	Reproductive tract infection		Total
	Yes	No	
Age (in years)			
< 30	52 (36.61)	14(9.85)	66(46.47)
≥30	60(42.25)	16 (11.26)	76(53.53)
Total	112(78.86)	30(21.14)	142 (100)
literacy status			
illiterate	31(21.83)	2(1.40)	33(23.23)
Literate	81(57.04)	28(19.71	109(76.76)
Total	112(78.86)	30(21.14)	142 (100)
Income			
<10000	70 (49.29)	21 (14.78)	91(64.08)
≥10000	42 (29.57)	9 (6.33)	51(35.91)
Total	112(78.86)	30(21.14)	142 (100)
Age at first pregnancy			
< 14	8 (5.63)	5(3.52)	13(9.15)
15-19	62 (43.66)	12 (8.45)	74(52.11)
20-24	30(21.14)	13 (9.15)	43(30.28)
25-29	12 (8.45)	0 (0.00)	12(8.45)
Total	112(78.86)	30(21.14)	142 (100)
Numbers of parity			
0	8(5.63)	3 (2.11)	11(7.74)
1	21(14.78)	2(1.40)	23(16.19)
2	40(28.16)	20 (14.08)	60 (42.25)
3	21(14.78)	5 (3.52)	26(18.30)
4	13(9.15)	0(0.00)	13 (9.15)
≥5	9(6.33)	0(0.00)	9 (6.33)
Total	112(78.86)	30(21.14)	142 (100)

Figures in the parenthesis indicate percentage

An insignificant association was observed in (low monthly income (<10000) and higher income (>10000) prevalence of RTIs ($p>0.05$). However, significant ($P= 0.03$) difference was found in the age at first pregnancy i.e. highest (43.66%) among early pregnancy ≤19 years of age. The extent of problem was significant ($P=0.03$) among higher parity (≥2). The burden of the problem was more concentrated with higher parity than the primi parity or nulliparus women.

Table 3: Participant's Menstrual and sexual hygiene and RTI

Menstruation status	Experience of RTI		Total
	Yes	No	
Regular	81 (57.04)	28(19.71)	109 (76.76)
Irregular	31(21.83)	2 (1.40)	33 (23.23)
Total	112(78.86)	30(21.14)	142 (100)
Bleeding During Menstruation and RTI			
Normal	75(52.81)	26(18.30)	101(71.12)
Abnormal	37(26.05)	4(2.81)	41(28.87)
Total	112(78.86)	30(21.14)	142 (100)
Sexual Intercourse during menstruation			
Yes	25 (17.60)	1(0.70)	26 (18.30)
No	87(61.26)	29(20.42)	116 (81.69)
Total	112(78.86)	30(21.14)	142 (100)
Genitals cleaning after sex			
No	49(34.50)	6(4.22)	55(38.73)
Yes	63(44.36)	24(16.90)	87(61.26)
Total	112(78.86)	30(21.14)	142 (100)

Figures in the parenthesis indicate percentage

Women having irregular menstruation cycle had higher prevalence of RTIs and Fisher's exact test shows significant results ($P=0.01$). Of 33 women having irregular menstruation, 31(93.93%) had experienced RTI. The proportionate variation (Normal Vs Abnormal Menstrual Bleeding) was observed to be significant within the groups (Fisher's exact test shows significant results at $P= 0.04$). The strong association was observed for the sexual intercourse during menstruation and occurrence of RTIs. $\chi 2$ shows significant statistical association i.e. who indulge in the sexual intercourse during menstruation suffered more likely from RTIs than others who do not ($p=0.01$). RTI was higher among those who did not clean genitalia after sex, compared to those who clean genital organ after sexual intercourse ($\chi 2$ test significant at $p<0.05$).

Table 4: Estimation of Risk of RTI

Independent variables		95% Confidence Interval		Odds Ratio
Name of variable	Category	Lower	Upper	
Age (years)	< 30	0.44	2.22	1
	> 30			0.99
Literacy status	Illiterates	1.20	23.84	5.35
	Literates			1
Income (NRs)	<10000/month	0.29	1.70	1
	10000/month			0.71
Cleaning of genitalia after sex	Yes	1.18	8.20	1
	No			3.11
Use of sanitary pads during menstruation	Yes	0.65	3.43	1
	No			1.49
Sexual contact during menstruation	Yes	1.08	64.24	1
	No			8.33
Pain during sex	Normal	0.88	4.97	1
	Painful			2.09

Age and monthly income was found to be insignificant predictor of reproductive tract infection while literacy status, cleaning of genitalia after sex, sexual contact during menstruation, pain during sex etc were found to be significantly associated with the RTI symptoms. Illiterates were found to have >5 times risk than literates, >3 times risk among those who do not clean genitalia after sex than who clean, 8.33 times risk among those who had kept sexual contact during menstruation as compared to non users and women who reported painful menstruation have > two times of risk of acquiring RTI than normal menstrual periods as mentioned in the table 4.

Table 5: Participants by RTIs and treatment status

Responses	Frequency	Percent
Treatment against RTI		
Yes	43	38.4
No	69	61.6
Total	112	100.0
Treatment centres		
private medicals	15	34.9
Hospitals	14	32.6
SHP/HP	14	32.6
Total	**43**	**100.0**
Reasons for non treatment of RTI *(n= 112)		
perceived as symptoms normal	58	84.1
Distant location of facility	21	30.4
Shy	21	30.4
Lack of female health workers	13	18.8
expensive treatment	22	31.9
Lack of availability of treatment	9	13
Lack of trust towards SHP/PHCC/HP staff	8	11.6

**Multiple responses*

Of total 142 women who suffered from RTI, only about four out of every ten were undergone some kinds of treatment against RTI while the major bulk of population having the condition defining symptoms did not seek care for the existing RTI. Service option rate was somehow similar for three kinds of health facilities and most likely they offer private medical facilities.

Participants who did not received treatment against RTI, (84.10 were due to perception of symptoms as normal, more than three out of every ten reported due to shyness, inconvenient location of health facility (30.4%) and expensive treatment (31.9%). Other reasons being reported include absence of female health workers (18.8%), lack of availability of treatment (13%) and lack of trust towards SHP/PHCC/HP staff (11.6%)

DISCUSSION

Symptomatic prevalence of Reproductive Tract Infection

Of those, who have at least heard about RTI (142), four out of every five had experienced some conditions suggestive of reproductive tract infections within the last one year. Msuya reported that 64% had-at least one RTI.[5] Sharma *et al.,* reported 37.0 % based on symptoms[6] whereas Guo *et al.,* reported the prevalence of self-reported symptoms of RTIs in urban and rural women was 35.6 and 46.8, respectively.[7,8] Similarly, Parashar revealed the overall prevalence of 36.3% among married women.[9] Mbizvo *et al.,* reported that more than fifirty percent women had symptoms of RTIs[10] where Xia quoted that 39% of participants had at least one RTI symptom in their lifetime and 20% during the past 6 months.[11] Maitra elucidated that one out of four women reports experiencing at least one RTI symptom,[12] while Sulochana reported that 87 percent had least one symptom that is indicative of the presence of an RTI.[13]

Most common symptoms reported include backache, low abdominal pain. More than half of the respondents reported watery discharge, a quarter of the respondents reported curdy discharge and vulval itching. Parashar observed that most common sysmptoms experienced was vaginal discharge (26.7%) followed by lower abdomianl pain (19.2%), low backache (14.05), vulval itching (13.35) and others include Genital ulcer disease, burning on micturition, dysuria, and ciotal bleed.[9] Similarly,ssymptoms reported included abnormal vaginal discharge and vulval itching (29.3% and 22.9%.[2] Maitra stated that common experienced symptoms are abnormal vaginal discharge and pain during urination.[12] Similarly, Panda *et al.,* reported vaginal discharge (91%) followed by lower abdominal pain (64%) are mostly experienced symptoms and other common symptoms were backache (76%), vulval itching (51%) and burning during urination (34%),[13] Sulochana identified vaginal discharge followed by painful urination and genital itch are the common experienced symptoms.[14]

Association between various factors and RTI

Age-wise (< 30 Vs ≥ 30 years) prevalence of the symptomatic reproductive tract infection was found to statistically insignificant (P>0.05, OR=.99). The prevalence rate was proportionately very high among illiterates (p = 0.01, OR = 5.35) and they are 5.35 times higher risk of infection (p>0.05). Similarly Mbizvo *et al.,* identified the association between lower level of education and presence of RTI[11] which are consistent to the current findings. Monthly income was not a significant factor of RTI (p>0.05, OR=0.71) however the cases are numerically higher existing literatures revealed

that living in medium economic level and low socieconomic status were all related to having RTI symptoms.[9,11] and Patel *et al.,* observed that poverty and marginalization were associated with STIs and Bacterial Vaginosis.[15] The proportionate prevalence is highest among those who were delayed pregnancy and the age between 15-19 years of age and the problem is significantly among higher parities and is double fold more among those with at least two parities.

Cleaning of genitalia after sex, sexual contact during menstruation, pain during sex etc were found to be significantly associated with the RTI symptoms. These findings are consistent with others findings i.e. no cleaning genitals daily, not bathing daily during menstruation, not cleaning genitalia after sexual act and history of anal intercourse,[6] having sex during menstruation,[11] poor personal hygiene, delivery and induced abortions.[15]

There is strong statistical association between menstrual irregularities, abnormal bleeding during menstruation and RTI ($P< 0.05$). Prevalence of RTI was observed to be 8.33 times more among those who had sexual intercourse during menstruation ($p=0.01$, OR= 8.33) as compared to non users. The occurrence of RTI was more than three times risk among those who do not clean genitalia after sex than who does so ($p<0.05$).

Treatment of perceived symptoms of RTI

Only about two out of every five were undergone some kinds of treatment against RTI while majorities with RTI did not received any treatment against the symptoms of RTI. Guo et al reported that the proportion of women with RTIs who utilized health services was 27.5 and 26.7 percent among urban and rural area.[7,8] whereas Maitra et al revealed that two-thirds of symptomatic women had not sought any treatment.[3] Treatment seeking pattern reported in this study is higher than the finndings by Guo *et al.,* and somehow similar to the study of Maitra *et al.,* The rate of service option is somehow similar for three kinds of health facilities and most likely they offer private medical facilities. Major reasons for non seeking health services were perception of RTI symptoms as normal, feeling of shy, inconvenient location of health facility and expensive treatment while some others minors are lack of availability of treatment, trust towards SHP/PHCC/HP staff and lack of female health workers. Several studies reported that the reasons for non utilization of services for RTIs were non-existent of services, poorly skilled care, female provider in the nearby health care and lack of gender sensitivity.[3,16]

CONCLUSION

The symptomatic prevalence of reproductive tract infection was observed to be 78.9 percent and most commonly experienced symptoms were vaginal discharge (curdy and watery discharge) and backache Illiteracy (> 5 times risk), age at first pregnancy, menstrual irregularity, bleeding during menstruation, sexual intercourse during menstruation (>8 times risk) and non cleaning of genitalia after sexual intercourse (>3 times risk) were significant factors associated with RTI. Only few had taken treatment agaisnt RTI by some means of remedies. Majorities of them were treated at private medicals and equally at hospitals and PHCCS or HPs respectively.

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