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Community

Prevalence of Reproductive Tract Infections among Married Women of the Reproductive Age Group in Urban Chidambaram-A Cross Sectional Study

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Abstract: Reproductive tract infections [RTIs] including sexually transmitted infections [STIs] present a huge burden of disease and adversely impacts the reproductive health of people. About 6% of the adult population in India are infected with one or more RTIs/STIs. Lack of early diagnosis and prompt treatment can compromise women's health and fertility and at times, even infant health and survival. Individuals with RTIs/STIs have a higher chance of acquiring and transmitting human immunodeficiency virus. Community based estimates of disease burden are much required for a targeted approach towards prevention and control of RTIs and STIs. Hence, the present study has been conducted to determine the prevalence of symptoms of reproductive tract infections among married women of the reproductive age group in an urban field practice area of Chidambaram. This was a descriptive cross sectional study conducted among 350 married women of the reproductive age group [15-45 years] from the month of January 2018 to April 2018. Data was collected using a pretested, structured questionnaire based on WHO syndromic management algorithm. It also consisted of questions on socio-demographic details, obstetric and menstrual history and symptom profile of reproductive tract infections. The prevalence of various symptoms of reproductive tract infections including STIs was 44.3%. Most of the subjects reported abnormal vaginal discharge [30.5%], followed by lower abdominal pain [18.9%] and low back ache [16%]. The least reported symptom was swelling in inguinal region [1.7%]. The high prevalence rate of various symptoms related to RTIs in this study indicates that the problem is still widespread in spite of various health programmes especially for females. This highlights the need for various community based approaches and researches on RTI s and their prevention, including enhanced awareness regarding them.

Keywords: Reproductive tract infections sexually transmitted, WHO syndromic management algorithm, abnormal vaginal discharge.

INTRODUCTION

Reproductive health of women is a significant area to be focussed upon, due to its long-lasting implications on women's health and their family members including their children, influencing the socioeconomic development of the society as a whole in the process. It encompasses several components like fertility control, safe motherhood services and prevention and control of reproductive tract infections including sexually transmitted infections [1]. Reproductive tract infections have been identified as potential public and reproductive health challenges worldwide, adversely impacting the reproductive health of women by contributing to a huge burden of disease. They rank the second or third place among common public health problems of young people, in developing countries [2].

According to 2008 estimates of WHO, 499 million new episodes of curable sexually transmitted infections [syphilis, gonorrhoea, chlamydia and trichomoniasis] occur every year, among 15 to 49 years age group. A significant portion of this in developing countries [75 to 85%], out of which 79 million cases occur in India annually[3]. Every year nearly 1.3 million women die of largely preventable reproductive health problem. Sexually transmitted disease is contracted by 1 out of 20 teenagers, some even causing lifelong disabilities such as infertility or death [1]. The National Family Health Survey [NFHS-3] reported that among the 15 to 49 years age group, 11% women and 5% men had RTI/STI related symptoms in the past one year[3].

The District level household and facility survey [DLHS-3] showed a symptomatic prevalence of RTIs among married women as 18.2%,which was

higher in the rural[19.6%],compared to urban areas[15.0%] [1]. According to DLHS survey[DLHS-4], a prevalence of 10% of RTI symptoms was found among married women, which was higher in rural[10.4%] compared to urban areas[9.7%].These two consequent surveys show a declining trend of RTIs, yet they continue to pose a significant challenge to women's health in terms of morbidity and mortality[1].

Reproductive tract infections [RTIs] are infections that affect the reproductive tract [genital tract] which is part of the reproductive system. Sexually transmitted disease [STD] also known as sexually transmitted infection [STI], is an illness with a significant probability of transmission between humans using human sexual behaviour including vaginal intercourse, oral sex and anal sex. RTIs include three types of infections namely a] Endogenous infections, the most common resulting from overgrowth of normally present vaginal organisms b]Iatrogenic infections occurring as a result of infection introduced through medical procedures like abortion and c]STIs caused by viruses, bacteria and parasites transmitted through sexual activity with an infected partner[4].

Various factors influence RTI occurrence including unprotected sexual intercourse, extramarital sexual partners, socioeconomic status, poor personal hygiene, IUD and place of residence [rural/urban]. Identification of the risk factors and combating them is very much necessary to reduce the growing burden of RTI[5].

Women and adolescents bear the greatest burden of STI. Untreated reproductive or sexually transmitted infections lead to tubal infertility, stillbirths, abortion, neonatal deaths, ectopic pregnancies, recurrent UTI, pain during coitus, menstrual irregularities, chronic pelvic pain, maternal deaths and increased vulnerability to HIV. With the advent of HIV or AIDS epidemic, the importance of STI's have been properly recognised with good evidence that control of STI can reduce HIV transmission[2]. Serious complications and long-term sequelae due to reproductive tract infection which affect the quality of life can be prevented by their early diagnosis and treatment[6].

Various community-based studies conducted in India show the disease prevalence of RTI ranging from 19% to 71%. All these studies show a marked variation in terms of morbidity levels and pattern, demonstrating indirectly that a single set of RTI prevalence estimates could not be applied in such a diverse and large nation like India. The prevalence rates for a particular geographical area therefore need to be established in order to help the health administrators in rendering appropriate services for the treatment and the control of reproductive tract infections[2].

Till date, only a few community-based studies have been done on the prevalence of reproductive tract infections. Authentic upgraded details of the current scenario can enable a targeted approach on the priority areas for control and prevention of RTI, in turn reducing the burden of disease, their complications and disrupting the transmission of co-morbid infections like STD and HIV along with it.

Hence the present study has been conducted to find out the prevalence of symptoms of reproductive tract infections among married women of the reproductive age group residing in urban field practice area of Chidambaram.

METHODS

Study design: Descriptive cross sectional study.

Study period: Four months from 2nd of January 2018 to 30th April 2018.

Study area

Urban health centre practice area attached to Rajah Muthiah Medical college and hospital[RMMCH] a tertiary care institute under Annamalai university located in Chidambaram, Tamilnadu.

Inclusion criteria

Inclusion criteria were all married women in the reproductive age group of 15-45 years, giving consent for the study.

Exclusion criteria

Exclusion criteria were pregnant women, those not willing to participate and those with chronic diseases like hypertension, diabetes or any malignancy.

Sample size

Sample size was calculated based on a previous study by Geethamani, done in Kanchipuram district of Tamilnadu, which showed a prevalence rate of 33.3%[1]. Considering a relative precision of 15% and confidence level of 95%, the required sample size was calculated to be 341, which were rounded off to 350.

Sampling technique

Convenient sampling was done. The total population covered by the urban field practice area was 21,435 with 10,575 males and 10,860 females. A house to house survey was conducted to identify the married women in the reproductive age group. Informed oral consent was taken from the study subjects. The survey was continued till a total of 350 participants were enumerated.

Data collection

Data collection was done using a pre tested structured questionnaire, based on WHO syndromic management algorithm. The first part of the

questionnaire includes socio demographic details like name, age, religion, type of family, educational status, occupation, family annual income and overcrowding.

The second part of the questionnaire intends to obtain detailed information on obstetric and menstrual history, thereby elucidating certain risk factors for reproductive tract infection in the process. Obstetric risk factors include age at menarche, age at marriage, duration of married life, parity details including number of child births, place of delivery of last child and duration since last child birth .This was followed by eliciting a history of abortion, ectopic pregnancy, still birth or preterm if any. Gynaecological history included length, duration, regularity, pain associated with menstrual cycle, inter menstrual bleeding and post-coital bleeding, whether present or not. This part ended with questions on personal hygiene including menstrual hygiene and sexual behaviour.

In the third part, the symptom profile of reproductive tract infection was captured, by questions solely based on WHO syndromic approach. A diagnosis of RTI was considered, if the participant had experienced one of the following symptoms currently or in the previous six months: abnormal vaginal discharge, pain in the lower abdomen not related to menstruation, pain or burning sensation during urination, painful blister like lesions in and around the vagina and any swelling n the groin. Pain during sexual intercourse and spotting after sexual intercourse were also taken to be indicative of RTI. This part ended with seeking information on the current contraceptive status of the couple.

Data collected was entered in Microsoft excel spreadsheet, compiled and analysed using IBM SPSS version 21 statistical package.

Ethical consideration

Institutional ethical clearance was obtained before commencing the study. The participants were explained about the purpose of the study and informed consent was obtained.

Table 1: Socio-demographic profile of women in the reproductive age group of 15-45 years with RTI symptoms (n=350)

Socio-demographic characteristics		Frequency (N)	Percentage (%)
Age Group [in years]	<25	43	12.3
	26-35	152	43.4
	>35	155	44.3
Education	Illiterate	42	12.0
	Primary	73	20.8
	Middle school	40	11.4
	High school	45	12.9
	Higher secondary	71	20.3
	Graduate	79	22.6
Occupation	Skilled	74	21.1
	Semiskilled	71	20.3
	Unskilled	205	58.6
Income [In rupees]	<60000	67	19.1
	60001-120000	112	32.0
	120001-240000	81	23.2
	>240000	90	25.7
Type of family	Nuclear	257	73.4
	Joint	93	26.6
Overcrowding	Absent	91	26.0
	Present	259	74.0
Age at Marriage	<21 years	83	23.7
	22-25 years	200	57.1
	>25 years	67	19.1
Duration of Marriage	1-5 years	54	15.4
	6-10 years	90	25.7
	11-15 years	74	21.1
	>16 years	132	37.7

RESULTS

Socio-demographic characteristics of respondents

A total of 350 women participated in the study. Table 1 shows the socio-demographic characteristics of the study participants. Majority of the respondents, 155 [44.3%] were above the age group of 35 years, 7 [2%] study participants were under 21 years of age. Regarding educational status, 79 [22.6%] of them were

graduates, while 42[12%] of them were illiterates. A greater proportion of them, 205[58.6%] were unskilled workers. The family's annual income was in the range of 60,001- 1,20,000 rupees for 112[32%] of them. Almost three fourth, 257[73.4%] of them lived in a nuclear family and 259 [74%] of them had overcrowding in their families. Almost a quarter of these participants 83[23.7%] had married before the age of 21 years, while 67[19.1%] were above the age of 25 years at the time of marriage. The duration of married life was more than 16 years for 132[37.7%] of them, while it was around 1-5 years for 54[15.4%] of them.

Obstetric history and contraceptive practices

Table 2 shows the distribution of study population based on obstetric history and contraceptive practices. Out of the 350 participants, 84[24%] of the women had more than two children, while 11[3.1%] of them had no children. Considering the place of last child birth, 302[86.3%] of them had delivered in a hospital while 37[10.6%] of them had undergone home deliveries. The duration since last child birth was more than one year for 294[84%] of them, while it was six months only for 16[4.6%] of them. Women who had experienced abortions accounted for 102[29.1%] of them. Among contraceptive usage, 106[30.3%] did not use any sort of contraception. Majority of them, 152[43.4%] had undergone tubectomy, while 44[12.6%] of them had Intrauterine Copper T usage.

Table-2: Distribution of study population based on obstetric history and contraceptive practices: (n=350)

Variables		Frequency (N)	Percentage (%)
Number of live Births	None	11	3.1
	One	77	22.0
	Two	178	50.9
	More Than two	84	24.0
Place of last child birth	None	11	3.1
	Home	37	10.6
	Hospital	302	86.3
Duration since last child birth	No child	11	3.1
	Upto 6 months	16	4.6
	6-12 months	29	8.3
	1 year and above	294	84.0
Abortions	Absent	246	70.9
	Present	102	29.1
Contraceptive practices	Non-users	106	30.3
	Tubectomy	152	43.4
	IUCD	44	12.6
	Oral Pills	17	4.9
	Condoms	31	8.9

Distribution of perceived symptoms of RTIs/STIs among study participants

Out of 350 participants, 155[44.3%] of them had symptoms suggestive of reproductive tract infections [Figure 1]. Abnormal vaginal discharge was the most commonly perceived symptom of RTI [30.5%], followed by lower abdominal pain [18.9%], low back ache [16%], genital itching [12%], dyspareunia [11.1%], menstrual irregularities [9.7%], burning micturition [9.1%], dysmenorrhea [8.3%] and genital ulceration [3.1%]. The least perceived symptom was swelling in inguinal region [1.7%].

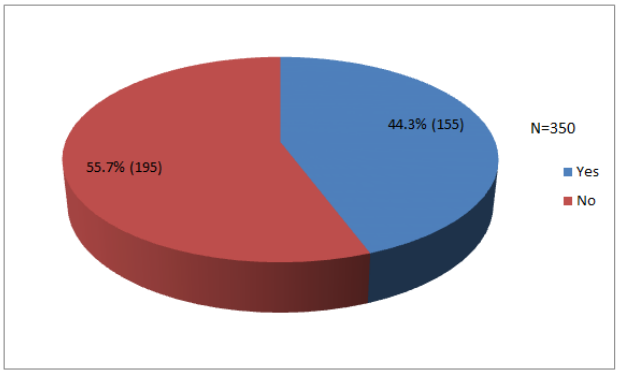

Fig-1: Distribution of study population based on the presence of RTI / STI

Table-3: Distribution of symptoms among symptomatic patients in the study population ([n=350)

Symptom*	Frequency among symptomatic patients[n=155]	Percentage (%)	Frequency among study population (n=350)	Percentage (%)
Abnormal vaginal discharge	107	69.0	107	30.5
Lower abdominal pain	66	42.6	66	18.9
Genital ulceration	11	7.1	11	3.1
Swelling IN Inguinal region	6	3.9	6	1.7
Genital Itching	42	27.1	42	12.0
Low back ache	56	36.1	56	16.0
Others**	134	86.4	134	38.2

*****Multiple responses were present

** Dyspareunia, menstrual irregularities, burning micturition, dysmenorrhea and genital ulceration.

DISCUSSION

The prevalence of reproductive tract infections based on their symptoms in this study was 44.3%. This is similar to studies done in Rajasthan, Kolkata, north-west Delhi, north-east Delhi, Karnataka and Haryana which reported a prevalence of 45%,43.3%,42.3%,43.9%,40.4% and 45.6% respectively[7,8, 9,5, 10, 11]. Among these studies, the studies in Kolkata, north-east Delhi and Karnataka had been conducted in a similar urban setting, while the studies done in Rajasthan and Haryana have reported prevalence from rural areas. The study done in north-west Delhi was a comparative study of prevalence between a rural and urban part of north- west Delhi. In all these studies, the above mentioned prevalence rates were solely based on participants reporting of symptoms of RTI.

Certain other studies reported a high prevalence of symptoms of RTI like the ones done in Kaski ,Nepal, rural Haryana and rural Surendranagar showing 78.9%,52.8%,60% and 56.5% respectively[12, 3, 13]. Dilip *et al*. Sreelatha *et al*. and Ratnaprabha *et al*. in their studies done in Karnataka and Geethamani in her study done in rural Kanchipuram reported a prevalence of 36.1%,29.15%,32% and 33.3% respectively, which were almost in a similar range[14, 2, 15, 1]. Also, very low prevalence was reported from a study in Bangaladesh as 18.9% and a study from Kerala, India which showed a prevalence of 11.8% [16, 17].

Gayathri S.Desai and R.M. Patel in their study comparing various levels and differentials of RTI across all states in India, have stated that the prevalence of RTI/STI have increased by 26% in women from 1998-99 to 2002-04.There has been a notable decline in certain states, especially in Tamilnadu by 45%,while Jammu and Kashmir reported a highest increase in prevalence[18]. As mentioned earlier, the prevalence of reproductive tract infections varies across the country from 19 to 71%,exhibiting a marked variation in terms of pattern and levels of morbidity, indicating that no single set of RTI estimates could apply in a large diverse nation like India[2].These variations in prevalence might be due to the different levels of education of study participants and various other socioeconomic, occupational, cultural ,behavioural and medical factors influencing the study.

Based on the reporting of individual symptoms, the most common symptoms of RTI reported were usually abnormal vaginal discharge, lower abdominal pain, low backache, vulval itching, dysmennorhea, genital ulcer, swelling in inguinal region, burning micturition etc with their order of frequencies.

In this study, 30.5% of the participants reported vaginal discharge. A study done in western Kenya reported 11% of the study participants having vaginal discharge as the major symptom[19]. A study done in urban slums of Tirupati, Andhra and a study done in urban health centre of Kerala showed the frequency of vaginal discharge to be21.3% and 70.3% respectively[20, 17]. Dasagupta Aparajita in her study from Kolkata and Ratnaprabha *et al.* Dilip *et al.* Sangeetha.S.Balamurugan and ND Bendigeri from their corresponding studies done in Bangalore also portrayed the commonest symptom of study participants as vaginal discharge with 100%,17.45% 30.2% and 32.7% respectively[8,15, 14, 10].

Lower abdominal pain was the commonest symptom in some of the studies, like the one comparative study done among rural and urban areas of Bareilly, U.P, which showed it to be 5.53% in urban locality[21]. This study has shown 18.9% of the participants having lower abdominal pain as one of the predominant symptoms. Meenakshi Bhilwar *et al*. in her study found that the most frequently reported symptom as lower abdominal pain with 68.2% of them, complaining of it[5]. A study conducted in Thiruvallur, Chennai also found lower abdominal pain as the commonly reported symptom in 27.5% of the study participants [22].

Mamta and Navdeep Khaur in their study in Rajasthan reported low backache [45%] as the most commonest symptom[7].Similarly low backache[71%] was the commonest prevailing symptom in a study done in Kaski, Nepal[12]. Ranjan Kumar Prusty in his study done in Deonar, Mumbai also found low back ache[8%] as the most commonly experienced symptom[23].However, this study reveals 16% of the symptoms were low back ache.

One study done in Thiruvarur, India showed nine percent of the study participants showing itching/irritation over vulva as the commonly occurring symptom[24]. In this study, 12 % of the women had given the symptoms of itching or irritation over vulva. As mentioned earlier, these differences in the perception and reporting of symptoms of RTI may be due to the various factors influencing the occurrence of RTI, which in turn might differ according to geographical location, socioeconomic, behavioural and cultural factors surrounding the individual.

Considering the limitations of the study, the findings were based on self-reporting of the participants and there is a chance of recall bias.

CONCLUSION

Reproductive tract infections are one of the most prevalent and preventable health morbidities among women, especially in developing countries. The true magnitude of the disease load can be identified by estimating the prevalence and thus appropriate prevention, treatment, referral and follow-up can be done at the right time. The prevalence of various symptoms of reproductive tract infections was found to be 44.3% and the most prevalent symptom was found to be abnormal vaginal discharge [30.5%] among the study participants. This is somewhat on the higher side, in spite of the study area being an urban locality. Lack of awareness regarding the symptoms, unwillingness to report the symptoms due to social stigma, shyness, embarrassment and failure to seek the right place of health care, incomplete treatment, partner non-cooperation for treatment and loss to follow up might be various reasons behind this and hence needed to be rightly focussed upon.

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