

Reproductive morbidity in an Indian urban slum: need for health action

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In developing countries the mortality and morbidity due to reproductive tract infections/sexually transmitted infections (RTIs/STIs) are very high relative to those associated with other health problems. The consequences of RTIs which are numerous and potentially devastating include postabortal and puerperal sepsis, ectopic pregnancy, fetal and perinatal death, cervical cancer, infertility, chronic physical pain, emotional distress, and social rejection in women. The impact of RTIs on the transmission of HIV infection and the morbidity and mortality of HIV adds substantially to the total health impact of RTIs.

This study has been conducted in an urban slum in the vicinity of Maulana Azad Medical College, of New Delhi, India, during August 1996 to November 2000. The slum settings are characterised by a migratory population living under overcrowded and stressful conditions, where loosened traditional and social constraints, a range of sociocultural factors, and economic compulsions limit access to health care and social support services, thereby providing an environment conducive to acquiring and transmitting RTIs/STIs.

The slum area comprised 826 hutments with a total population of 3676. The area had adverse sex ratio, 635 females per 1000 males and there were 500 (13.6%) single men. The majority of residents were migrants from the neighbouring states of Uttar Pradesh and Bihar.

The present study was conducted with the objective of assessing the prevalence of various RTIs among married women in the urban slum setting using peripheral (field level) and confirmatory laboratory tests.

PARTICIPANTS AND METHODS

The study population consisted of all 446 ever married women aged 15–45 years residing in the area. It was decided to include all women in the study to fulfil the obligation of not denying diagnosis and treatment to any.

To enrol the eligible subjects, a demographic survey was conducted which included a house to house survey. A

quantitative reproductive health schedule (RHS) developed after exhaustive qualitative study was administered to all the enrolled study subjects. The schedule included data on sociodemographic characteristics, perceived symptoms of reproductive morbidity, personal and genital hygiene, care seeking behaviour, obstetric and contraceptive history. After the interviews, these women were simultaneously referred to the clinic established within the community for the purpose of diagnosis and treatment of RTIs/STIs. Culture sensitive strategies were used to create awareness among all women regarding need for examination.¹ All the study subjects were asked to visit the peripheral health clinic shortly after the home interviews. In the clinic, a detailed history was taken followed by general physical examination, internal examination along with the collection of relevant samples (four vaginal and four cervical) by a female gynaecologist. The specimens were transported to the microbiological laboratory on the same day by the technician. For pathogens with multiple diagnostic tests, the infection was considered positive in the event of either of the laboratory tests being positive, in order to maximise sensitivity (table 1).

The data were processed and analysed in software packages (FOXBASE and EPI-INFO). Categorical data were compared using χ^2 or Fisher's exact tests, as applicable.

RESULTS AND COMMENTS

Of the 446 women enrolled, 380 (85%) reported to the clinic and 66 women (15%) were non-responders. Of the 380 subjects 72% were illiterate and 30% belonged to families having income >2000 rupees (US\$42) per month. The mean age of responders was 28.2 (SD 6.6) years, mean age at marriage 15.2 (3.2) years, mean age at consummation of marriage 16.2 (2.6) years, and mean age at first child birth 18.4 (2.8) years. The mean parity was 3.3 and mean gravidity was 3.8. A total of 29% of responders had a history of abortions (spontaneous or induced).

Overall, 332 (87%) women gave their blood for examination and 301 (79%) underwent internal examination and their samples (vaginal and cervical) were collected for laboratory tests.

Prevalence of symptoms in study population

Symptoms of gynaecological morbidity were reported by the majority (334, 88%) of women who responded to clinic. The common morbidities reported were low backache 243 (64%), vaginal discharge 216 (57%), low abdominal pain 160 (42%), menstrual problems 98 (26%), urinary complaints 78 (20%), prolapse 60 (16%), infertility 31 (8%), and genital ulcers by 11 (3%) women.

In Indian community based studies the range of self reported morbidity has been reported to vary from 39% to 84%.^{2,3} The considerable burden of reproductive morbidity in Indian communities warrants an urgent need for community based interventions.

Prevalence of infections in study population

Most of the Indian studies in the field of reproductive morbidity are based on clinical examination.³ The present study results are based on laboratory tests (table 1)

There was high prevalence of bacterial vaginosis (41%), chlamydia (29%), and

Table 1 Prevalence of major reproductive tract infections

Infection	Tests	Number tested	Number of cases
Bacterial vaginosis	Amsel's criteria	301	125 (41%)
	Nugent's criteria		
Chlamydia*	DFA and PCR	286*	82 (29%)
Candidiasis	Microscopy and culture	301	56 (19%)
Trichomoniasis	Microscopy and culture	301	13 (4%)
Gonorrhoea	Microscopy, culture, and ELISA	301	0 (0.0)
Syphilis	VDRL and TPHA (confirmation)	332	14 (4%)
Hepatitis B†	Latex agglutination and ELISA	329	19 (6%)
Hepatitis C‡	Anti-HCV IgM antibodies ELISA	166	3 (2%)
HPV16§	PCR	152	18 (12%)
HPV18§	PCR	152	5 (3%)

*Results are based on DFA testing. In-house PCR could be done on 126 samples only. 15 samples were not tested by DFA because of thick smears; †3 samples had insufficient quantity for blood; ‡testing were done for alternate samples; §samples with DNA extracts were processed for HPV16 and HPV18.

candida (19%). Other infections detected were trichomoniasis (4%), syphilis (4%), hepatitis B (6%), hepatitis C (2%), human papillomavirus (HPV) 16 (12%), and HPV18 (3%). No case of gonorrhoea was detected (table 1).

Among 301 women 56% were found to be infected with any of the RTIs/STIs (bacterial vaginosis, candidiasis, trichomoniasis, and gonorrhoea). Of the 286 women screened for five infections (including chlamydia), 69% were found to be infected. Among 261 women screened for seven infections, 188 (72%) were found to be infected.

A study carried out in rural Maharashtra (in 1989) detected a higher prevalence of bacterial vaginosis (62%), candidiasis (34%), trichomoniasis (13.98%), and syphilis (10.5%) compared to the present study.² In rural Karnataka and Mumbai the prevalence of trichomoniasis was 7% and 10% respectively, which is higher compared to present study.^{4,5} A significant finding of the present study has been a high prevalence of chlamydia (29%) compared to all other studies. In the community based studies carried out in different parts of the country prevalence of chlamydia varies from <1% to 14%, which was found to be lower than in the current study. Regarding gonorrhoea and syphilis the community studies have found the prevalence to be <2% and <11% respectively.

There is growing recognition that women from poorer sections of the community carry a heavy burden of reproductive morbidity and are at high risk of infection. Male supremacy in Indian society, along with the restrictive social structure, limits women's independence, leading to strong male control over female sexuality. The invisibility and taboos surrounding RTIs and the belief that they should be endured, create a culture of silence within families and communities that can severely compromise women's health.⁶

This varying degree of prevalence shown by different studies could be attributed to the type of screening tests which differ in sensitivity and specificity. The high prevalence of reproductive morbidity, especially chlamydia, in this population needs to be explored further and in the absence of cost effective tests, especially for chlamydia, health workers in peripheral settings have to be trained to carefully elicit symptoms, and use standardised criteria for clinical diagnosis. The high prevalence of RTIs/STIs indicates the need to pay serious attention to this problem in the healthcare delivery services.

There is a clear indication of the growing spread of RTIs/STIs which are also known to be an augmenting factor for HIV transmission. The trends are enough

Key messages

- Symptoms of gynaecological morbidity were reported by 88% women. A high prevalence of bacterial vaginosis (41%), chlamydia (29%), and candidiasis (19%) was observed. The majority (72%) of women were found to be infected using laboratory tests.
- A significant finding of the present study has been a high prevalence of chlamydia (29%) compared to all other community based studies in an Indian context.
- In the absence of cost effective tests, especially for chlamydia, health workers in peripheral settings have to be trained to carefully elicit risk history, symptoms, and use standardised criteria for clinical diagnosis.
- The study calls for routine inclusion of RTI/STI screening in antenatal and other gynaecology clinics, and improved quality of peripheral diagnostic tests, which is already envisaged under RCH programme of the government of India.

to warrant a comprehensive culture sensitive approach for all RTIs/STIs, and their integration and implementation into reproductive health services. Two basic components in such an approach must be an ever widening range of people within the health system and outside who are skilled in communicating matters relating to sexuality and reproductive illnesses that are not pregnancy related; and the routine inclusion of RTI/STI screening in antenatal and other gynaecological examination, and improved quality of peripheral diagnostic tests which are already envisaged under the RCH programme of government of India.

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CONTRIBUTORS

SG was the project coordinator and principal investigator responsible for idea and concep-

tualisation of the study; NS, PB, RS, BCD, SS, and NSM were the co-investigators; RS was the social anthropologist, and UR was the gynaecologist; SG and NSM coordinated the study protocol; SG coordinated fund raising and supervised the study; PB and BCD were responsible for microbiological tests including PCR. All the investigators actively contributed to the execution of study. RS, SS, and NSM were responsible for data management and did the analysis; SG, NS, PB, RS prepared the paper with inputs from all the investigators.

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REFERENCES

- 1 **Garg S, Sharma N, Sahay R, et al.** Methodology of interaction with community in context of reproductive health. *Guidelines for researchers, department of preventive and social medicine*. New Delhi: Maulana Azad Medical College, 1999.
- 2 **Bang R, Bang A, Baitule M, et al.** High prevalence of gynaecological diseases in rural Indian women. *Lancet* 1989;**1**:85–8.
- 3 **Latha K, Senapati SK, Sridhar S, et al.** Prevalence of clinically detectable gynaecological morbidity in India: results of four community based studies. *J Family Welfare*, 1997;**43**:8–16.
- 4 **Bhatia JC, Cleland J.** Self reported symptoms of gynaecological morbidity and their treatment in south India. *Studies in Family Planning* 1995;**26**:203–16.
- 5 **Parikh I, Taskar V, Dharap N, et al.** Gynaecological morbidity among women in a Bombay Slum. *Strehitakarini*, Mumbai, India, 1996.
- 6 **Dixon-Mueller R, Wasserheit J.** *The culture of silence: reproductive tract infection among women in the Third World*. New York: International Women's Health Coalition, 1991.