Gender and Susceptibility of Sexually Transmitted Infections in India

Abhilasha Sharma

Whispering Palms Apartments Flat No. 3B/1404 Lokhandwala Complex Akurli Road, Kandivili (East) Mumbai 400 101 India Ph: 91-22-28846388 Mobile: 9867245784 E-mail: vivek_gvabhi@yahoo.co.in

Paper prepared for 2008 Population Association of America Annual Meeting, 17-19 April, New Orleans, Louisiana, U.S.A

April 2008

Gender and Susceptibility of Sexually Transmitted Infections in India

1. Introduction

Some 340 million curable sexually transmitted infections (STIs) estimated worldwide every year. However, STIs have been overlooked in the global fight against infectious diseases; as a result, they continue to drain the lives of young and old throughout the developing world. Apart from being serious diseases on their own, the presence of untreated STIs can increase the risk of HIV transmission. Many millions of incurable viral STIs, including an estimated 5 million HIV infections, occur annually (WHO 2005). Sometimes sexually transmitted diseases cause damage to other organs including the heart, kidneys, and brain. Moreover, certain STIs such as HIV or AIDS are eventually fatal (WHO 2005).

A variety of biological, cultural and social economic factors make women more susceptible to STIs than men. Women are physiologically not only more vulnerable than are men to contracting STIs; they are also more likely to be asymptomatic. Therefore, lack of timely care among women can lead to serious complications such as pelvic inflammatory disease, ectopic pregnancy, cervical cancer and even infertility. Babies born to women with sexually transmitted diseases may suffer death or severe damage. Moreover, gender-based power is likely to influence women's susceptibility to STIs by limiting their decision-making power within relationships, including decision-making regarding use of barrier methods and by constraining their access to information and health services (WHO 2005). However, as men tend to have more sexual partners than women, they are more likely to spread an STI (UNFPA 2004).

Despite the fact that sexual tract infections constitute an important health threat, little is known about the prevalence of these infections, especially in developing countries such as India. Policies and programmes in India have focused little attention on diagnosis and treatment of STIs. Even after the implementation of the Reproductive and Child Health (RCH) programme there is no clear definition of a strategic approach and activities required for prevention and treatment of these infections. This is perhaps due to the lack of availability of accurate data on STIs. It is difficult to measure trends in the incidence and prevalence of STIs because of changes in reporting systems and the availability of increasingly accurate testing methods. Data collection may be incomplete because some STIs can be asymptomatic and go undetected. Some smaller studies which have intended to measure the prevalence of STIs have not been based on representative samples of the total population (Garg S et al., 2007; Panchanadeswaran S, et al., 2006).

2. Objectives

The present study aims to examine the prevalence and treatment seeking of selfreported symptoms of STIs. An attempt has also been made to study the factors that influence the prevalence and treatment seeking behaviour of both women as well as men suffering from STIs. The specific objectives of the study are to:

- Examine men's and women's level of awareness of STIs.
- Examine the prevalence of STIs among both men and women.

- Examine their treatment seeking behaviour.
- Examine the factors influencing prevalence and treatment seeking of STIs among both men and women.

3. Data Source

The study is based on data collected in the most recent National Family Health Survey-3 (NFHS) survey conducted in 2004-05. This is the third in series of surveys conducted in India. The first and second rounds of NFHS surveys were conduced in 1992-93 and 1998-1999 respectively. The survey provides information on nearly 200,000 men and women across the country on population, health and nutrition. The NFHS-3 survey provides a unique opportunity to analysis data on STIs as it includes information on risky sexual behaviour and prevalence of HIV in India. In NFHS-3, a male questionnaire has been introduced where information on STIs has been collected from men in a section on marriage and sexual life. This section also provides data on sexual behaviour of men. Similar information on STIs and sexual behaviour has also been collected from women.

4. Conceptual Framework and Analysis

In order to analyse the prevalence and treatment seeking for STIs, a conceptual framework has been developed. The independent variables, which influence the prevalence and treatment seeking of STIs, are classified as socio-economic variables and behavioural characteristics of the persons suffering from STIs.

Following cross tabulation and chi-square tests, multivariate logistic regression techniques have been used to assess the socio-economic variables and behavioural characteristics that determine prevalence and treatment seeking of STIs among men and women. This statistical technique will explain changes in the response to unit changes or categorical shifts in the, socio-economic and behavioural characteristics of persons suffering from STIs. Socioeconomic characteristics include age, educational level, occupation, mass media exposure, marital status and standard of living. Behavioural characteristics of the person include sexual behaviour and use of contraception.

5. Findings

5.1 Knowledge of STIs

Preliminary findings from NFHS-3 on the extent and sex differentials in knowledge of HIV/AIDS are of concern. Data shows that the percentage of men who have heard of AIDS (84 percent) is substantially higher than the percentage among women (61 percent). However, knowledge about other sexually transmitted infections was rather low. Only one fifth of women and a slightly higher percentage of men have heard of a STI other than HIV/AIDS.

Knowledge	Women	Men
HIV/AIDS	60.9	82.9
Other STIs	20.9	22.5

Table 1: Percentage Distribution of Knowledge of STIs by Sex

Such a high discrepancy between knowledge levels of HIV and STI has far more serious consequences, especially for women who generally suffer from asymptomatic infections (Singh et al., 2004).

5.2 Self reported symptoms of STIs

Both men and women who ever had sexual contact were asked, did you ever had any problems like; any discharge from penis, any sore or ulcer in groin area (penis) or any disease through sexual contact.

Problems Reported	Women	Men
At least one	11.1	4.5
None	88.9	96.5

Table 2: Percentage Distribution of Prevalence of STIs by Sex

Table 2 shows that women are three times as likely as men to report having a STI. Around 11 percent of women and 5 percent of men who have ever had sex reported a STI or symptoms of STIs in the 12 months preceding the survey.

Table 3: Percentage Distribution of Persons who Reported a STI/Symptoms ofSTIs during the Last Twelve Months by Sex

Nature of Symptoms	Women	Men
Abnormal genital discharge	9.9	2.8
Genital sore or ulcer	2.2	2.2
Any disease from sexual contact	1.5	0.5

Data by the nature of symptoms in Table 3 show that women were over four times more likely to say they had an abnormal bad smelling genital discharge than to report a genital sore or ulcer in the past 12 months. The corresponding reported prevalence of abnormal genital discharge among men is only slightly higher than the reported prevalence of a genital sore or ulcer. Only 1.5 percent of women and 0.5 percent of men reported to be suffering from any sexually transmitted infection.

Table 4: Percentage Distribution of Persons Suffering from any STI/symptoms ofSTIs by Sex and Background Characteristics

Characteristic	Women	Men
Age		
15-24	10.9	8.1
25-39	12.1	4.6
40-54	9.2	3.2
Chi Sq (sig)	131.113(.000)***	286.658(.000)***
Education		
Illiterate	12.9	5.1
Primary	11.7	4.8
Secondary	9.0	4.5
Higher	6.0	2.9

Characteristic	Women	Men
Chi Sq (sig)	445.418(.000)***	48.070(.000)***
Mass Media Exposure ¹		
Regular exposure to media	9.5	4.2
Never exposed	13.7	5.5
Chi Sq (sig)	415.268(.000)***	36.383(.000)***
Occupation		
Unemployed	10.7	6.7
Prof/ Tech/Managerial	6.8	3.1
Clerical	6.6	3.0
Sales	9.1	4.0
Agricultural	12.1	5.0
Services	9.3	2.8
Skilled and Unskilled manual	13.5	4.7
Chi Sq (sig)	162.297(.000)***	73.571(.000)***
Wealth Index ²		
Poorest	14.6	6.3
Poorer	13.4	6.0
Middle	11.1	4.6
Richer	9.1	3.3
Richest	7.8	2.7
Chi Sq (sig)	642.683(.000)***	245.483(.000)***
Use of contraception		
Never used	9.8	3.8
Ever used	11.9	5.3
Chi Sq (sig)	97.600(.000)***	66.339(.000)***
Marital Status		
Never married	9.9	11.0
Married and Living together	11.3	4.0
Widowed, Divorced and not	8.8	6.3
living together		
Chi Sq (sig)	33.442(.000)***	364.317(.000)***
No of Partners in the last 12		
months		
0	7.9	6.9
1	11.5	4.1
2	33.8	16.7
3 +	8.1	11.0
Chi Sq (sig)	150.479(.000)***	361.731(.000)***

*** Significant at .01 level **Significant at .05 level *Significant at .10 level

Data by background and behavioural characteristics show that among women, STIs are more common in the reproductive age span. At least 12.1 percent of women in the age

¹ Regular media exposure has been calculated using the three media exposure variables i.e., exposure to newspaper/magazine, exposure to radio and exposure to television. Individuals who do not read a newspaper or magazine, watch television, or listen to the radio at least once a week, are considered to not be regularly exposed to any media.

² The NFHS-3 wealth index is based on the following 33 assets and housing characteristics: household electrification; type of windows; drinking water source; type of toilet facility; type of flooring; material of exterior walls; type of roofing; cooking fuel; house ownership; number of household members per sleeping room; ownership of a bank or post-office account; and ownership of a mattress, a pressure cooker, a chair, a cot/bed, a table, an electric fan, a radio/transistor, a black and white television, a colour television, a sewing machine, a mobile telephone, any other telephone, a computer, a refrigerator, a watch or clock, a bicycle, a motorcycle or scooter, an animal-drawn cart, a car, a water pump, a thresher, and a tractor.

group of 25-39 years reported either a STI or a symptom of STI. Percentage of women suffering from STI is also high among the young women aged 15-24 years. On the other hand, among men younger age group is more vulnerable to sexually transmitted infections. Data show that around 8.1 percent of men aged 15-24 years reported to be suffering from either a STI or a symptom of STI. Reporting of symptoms is significantly influenced by educational attainment. Both among men and women, the prevalence of STIs decreases with education, from 12.9 percent and 5.1 percent among not literate women and men to 6.0 percent and 2.9 percent among those who have completed ten or more years of schooling respectively. Regular exposure to media also plays an important role. Those women who are regularly exposed to either print media, radio or television are less likely to report a STI or a symptom of STI (9.5) compared with women are not exposed to mass media at all (13.7). Similarly, among men a lower percentage of those who are exposed any form of media reported suffering from a STI (4.2 percent) compared with those who are never exposed (5.5 percent).

Data by respondents' occupation show that in case of men, STIs are more common among those who are unemployed (6.7 percent), followed by those working in the agricultural sector (5.0 percent) and skilled and unskilled manual workers (4.7 percent). On the other hand, only 2.8 percent of men working in the service sector have reported a STI or a symptom of STI in the last 12 months. Similarly, women in skilled and unskilled manual jobs (13.5 percent) are more vulnerable to STIs followed by the agricultural sector (12.1 percent). The percentage of women suffering from STIs is also high among those women who are not working or are housewives (10.7 percent). Both among men and women, reporting of STIs declines steadily with an increase in the wealth quintile.

Use of contraception has a positive effect on the prevalence of STIs. Both among men and women, a higher percentage of those who have ever used contraception, have reported a STI/symptoms of STI compared with those who have never used a method of contraception. Data by marital status show that a higher percentage of married women (11.3 percent) have reported a symptom of STI compared with those who are either never married (9.9 percent) or are not living together (8.8 percent). On the other hand, among men a higher percentage of those who are never married (11.0 percent) have reported a STI/a symptom of STI followed by those who are separated or not living together (6.3 percent). For both women as well as men, the number of partners in the past 12 months has a positive association with the reported prevalence of STI/symptoms of STIs.

To sum up, the overall reported prevalence of STIs/symptoms of a STI among women and men is higher for those in the younger age, those with little or no education, those not regularly exposed to media, those either unemployed or are employed in agricultural or skilled and manual jobs, those in the lowest wealth quintiles, those who have ever used contraception and those who had sex with at least two partners in the last 12 months.

5.3 Treatment seeking

Those who reported any symptom of STIs were asked whether they sought treatment for the symptoms. Data in Table 5 reveal that among women who have reported any symptom of STIs, at least 60 percent have not seen any advice or treatment while among men who reported any symptoms of STIs a little less than half them have sought treatment. Studies have shown that women in India often bear the symptoms of RTIs /STIs silently without seeking health care. Women's lower status in the family and lack of decision making regarding mobility and expenditure for health care plays an important role in their poor treatment seeking behaviour (Jejeebhoy et al., 2003).

Table 5: Percentage Distribution of Persons who Sought Treatment of aSTI/Symptoms of a STI by Sex

Item	Women	Men
Sought treatment	40.4	45.6
Not sought treatment	59.6	54.4

Table 6: Percentage Distribution of Persons who Sought Treatment of aSTI/Symptoms of a STI by Sex and Background Characteristics

Characteristic	Women	Men
Age		
15-24	33.4	39.0
25-39	42.6	48.0
40-54	42.4	46.8
Chi Sq (sig)	67.972(.000)***	12.427(.002)***
Education		
Illiterate	33.2	47.3
Primary Complete	43.9	44.4
Secondary Complete	52.0	44.4
Higher	56.0	50.3
Chi Sq (sig)	324.869(.000)***	2.989(.393)
Mass Media Exposure		
Regular exposure to media	47.2	44.3
Never exposed	33.0	48.7
Chi Sq (sig)	228.229(.000)***	3.722(.054)*
Occupation		
Unemployed	42.8	48.8
Prof/ Tech/Managerial	59.3	50.0
Clerical	48.7	31.0
Sales	52.9	47.8
Agricultural	34.5	42.4
Services	46.8	29.2
Skilled and Unskilled manual	38.6	50.1
Chi Sq (sig)	101.572(.000)***	21.814(.000)***
Wealth Index		
Poorest	30.5	39.2
Poorer	34.9	51.3
Middle	39.3	46.8
Richer	50.6	43.9
Richest	56.4	47.1
Chi Sq (sig)	388.726(.000)***	18.190(.001)***
Use of contraception		

Characteristic	Women	Men
Never used	32.8	39.4
Ever used	43.7	50.7
Chi Sq (sig)	115.028(.000)***	29.074(.000)***
Marital Status		
Never married	31.6	41.5
Married and Living together	40.4	47.1
Widowed, Divorced and not	39.0	27.9
living together		
Chi Sq (sig)	1.020(.601)	12.689(.002)***
No of Partners in the last 12		
months		
0	41.2	38.1
1	40.3	46.2
2	36.4	49.2
3 +	50.0	63.9
Chi Sq (sig)	.675(.879)	12.145(.007)***

^{***} Significant at .01 level **Significant at .05 level *Significant at .10 level

The bivariate analysis shows an expected pattern of socio-economic differentials in treatment seeking. By the age of women, treatment-seeking behaviour increases with an increase in her age. Data show that only one-third of women have sought treatment for any STI in the young age group of 15-24 years compared with 42.6 percent of women in the 25-39 age group. Similarly, among men, the treatment seeking behaviour tends to rise with age, but percentage is slightly low in the older age group of 40-54 years. There a strong relationship between the level of education of women and the health seeking behaviour. A higher percentage of women who have attended school have sought treatment compared with those who have never been to a school. On the other hand, in case of men, treatment seeking is not only high among those who have completed at least ten or more years of schooling (50.3 percent) but it is also high among the illiterates (47.3 percent). Women regularly exposed to either newspaper/magazine, radio or television report better treatment (47.2 percent) in relation to those who are never exposed (33.0 percent). On the contrary, among men out of those who reported any symptoms of STI, those who are not exposed to any form of media show better treatment seeking behaviour.

The influence of economic factors on treatment seeking is confirmed by the effect of wealth index. Among women, treatment seeking sharply increases from 30.4 percent among the poorest to 56.4 percent among women in the high wealth quintiles. On the other hand, among men there is no such pattern. Treatment seeking is the highest in the poorer quintile (51.3 percent) followed by the richest (47.1 percent) and the middle level (46.8 percent).

Bivariate analysis by occupation shows that at least half of the men who reported a problem, working in professional/tech/managerial jobs or in skilled and unskilled jobs have sought treatment. A little less than half of unemployed men have also manual sought treatment for any STI or symptoms of a STI. Among women treatment seeking is not only high among women working in professional/tech/mang jobs (59.3 percent) but also among women employed in sales (52.9 percent), clerical (48.7 percent) and service sector (46.8 percent). Incidentally, treatment seeking among women is the lowest in the agricultural sector (34.5 percent). Both among men and women, those

who have ever used a contraception, show better treatment seeking behaviour compared with those who have never used a method of family planning. Marital status and number of partners does not seem to influence treatment seeking among women, whereas among men those who are married show better treatment seeking compared with never married and separated men. Treatment seeking among men also increases with an increase in the number of partners in the last 12 months.

Overall, treatment seeking among men and women is influenced by age, education, mass media exposure, occupation, wealth index and use of contraception. Among men, marital status and number of partners in the last 12 months also play an important role in seeking health care.

5.4 Logistic Regression Analyses

In order to control the effect of other variables, logistic regression analyses have been used. Table 7 and Table 8 present logistic regression analyses results for prevalence and treatment seeking for sexually transmitted infections. In Table 7, reporting of either a STI or at least one symptom of a STI is considered here as the dependent variable. The dependent variable is dichotomized as the presence or absence of morbidity. Similarly, in Table 8 the dependent variable is categorized as whether sought treatment for any symptom and did not seek treatment at all.

Characteristic	Women	Men
Age		
15-24	1.230***	1.707***
25-39	1.294***	1.377***
40-54 (r)		
Education		
Illiterate (r)		
Primary	.969	.998
Secondary	.808***	.985
Higher	.585***	.835*
Mass Media Exposure		
Regular exposure to media	.820***	.898**
Never exposed (r)		
Occupation		
Unemployed	.883***	1.041
Prof/Tech/Managerial	.813**	1.027
Clerical	.725*	1.039
Sales	.766***	1.012
Agricultural	.788***	1.042
Services	.741***	.728**
Skilled and Unskilled manual (r)		
Wealth Index		
Poorest (r)		
Poorer	.931**	.920
Middle	.782***	.698***
Richer	.668***	.501***
Richest	.638***	.407***

Table 7: Logistic Regression Analyses of Prevalence of STI by Sex

Characteristic	Women	Men
Use of contraception		
Never used (r)		
Ever used	1.412***	1.681***
Marital Status		
Never married (r)		
Married and Living together	.954	.480***
Widowed, Divorced and not	1.089	.644***
living together		
No of Partners in the last 12		
months		
0 (r)		
1	1.536***	.796***
2	5.527***	2.437***
3 +	1.098	1.567**
-2 Log Likelihood	67565.671	18267.122
Ν	93552	49382

r: reference category ***p< 0.01 ** p< 0.05 *p<0.10

As in the case of bivariate analysis, both among men as well as women, age is a significant predictor of reporting of either a STI or symptoms of a STI. Relative to men and women in the older ages, those in younger and medium age groups are more likely to report a symptom of sexually transmitted infection. Odd ratios for educational level show that prevalence of STIs is inversely related to education. Compared with the illiterate women, women with either secondary or higher education are less likely to report a problem. However, in the case of men, an inverse relationship between education and prevalence of STIs is only significant for those who have completed at least 10 years of schooling. Mass media exposure has also emerged as an important determinant of prevalence of STIs. Men and women who are regularly exposed to mass media are less likely to report either a STI/symptoms of a STI.

Occupation continues to play an important role in the prevalence of STIs. As compared with those working in skilled and unskilled manual jobs, women in all other occupational categories are less likely to report a STI. Whereas among men, odd ratios of occupation are only significant for those involved in the service sector.

An inverse relationship between prevalence of STIs and standard of living has also been observed. Relative to men and women who are in the poorest quintile, odd ratios for those in all other categories are significantly lower. Use of contraception, however, is positively related to the reporting of a STI both among men as well as women. Marital status is also an important predictor of reporting of STIs among men. Compared with those who are never married, men who are either married or are divorced/separated are less likely to report a STI. None of the odds ratios for marital status were significant among women. Among the behavioural characteristics, number of partners in the last 12 months is an important predictor of STIs. Relative to women who did not have any sexual partner in the last 12 months, women with a single partner are more likely to suffer from a STI/symptoms of a STI. The magnitudes of the odds ratios were especially large among women with two partners. On the other hand, in case of men, those with one partner are less likely to report a STI.

Characteristic	Women	Men
Age		
15-24	.682***	.677***
25-39	.980	.975
40-54 (r)		
Education		
Illiterate (r)		
Primary	1.402***	.895
Secondary	1.636***	.886
Higher	1.456***	1.161
Mass Media Exposure		
Regular exposure to media	1.208***	.770**
Never exposed (r)		
Occupation		
Unemployed	1.064	1.149
Prof/ Tech/Managerial	1.344	.846
Clerical	.915	.407***
Sales	1.499**	.852
Agricultural	1.006	.717***
Services	1.159	.469***
Skilled and Unskilled manual (r)		
Wealth Index		
Poorest (r)		
Poorer	1.108*	1.597***
Middle	1.179**	1.468***
Richer	1.585***	1.306*
Richest	1.660***	1.353
Use of contraception		
Never used (r)		
Ever used	1.228***	1.498***
Marital Status		
Never married (r)		
Married and Living together	1.167	.973
Widowed, Divorced and not	.989	.463**
living together		
No of Partners in the last 12		
months		
0 (r)	0.50	1.027
1	.858	1.037
2	.972	1.291
3+	1.723	2.015*
-2 Log Likelihood	14079.469	3049.521
N	8919	1659

Table 8: Logistic Regression Analyses of Treatment for STI by Sex

r: reference category ***p< 0.01 ** p< 0.05 *p<0.10

In Table 8, the effects of predictor variables on treatment seeking for sexually transmitted infections have been estimated. Result of logistic regression show that age, mass media exposure, occupation, wealth index and use of contraception are important predictors of treatment seeking both among men and women. Relative to women and

men in the older ages, those in the younger ages of especially, 15-24 years are less likely to seek treatment. While regular exposure to mass media has positive effect on women's treatment seeking behaviour, men who are regularly exposed to any form of media are less likely to seek treatment of a STI/symptoms of a STI. Odd ratios for occupation show that as compared to women in skilled and unskilled manual jobs, only women working in sales jobs are more likely to seek treatment for STIs. On the other hand, men in clerical, sales and agricultural sector are less likely to seek treatment than men employed in the production work. Better standard of living increases the probability of seeking treatment both among men as well as women. Relative to both men and women in the poorest quintile, those in medium and high wealth quintiles are more likely to seek treatment.

Use of contraception has also emerged as an important determinant of treatment seeking. Among both men and women, those who have ever used a method of contraception are more likely to utilize health care services. Among men, in case of marital status, relative to those who are not married, divorced or separated men are 54 percent less likely to seek treatment. Also, those men who had three or more than three partners in the last 12 months are twice more likely to seek treatment for any STI. For women marital status and number of partners does not seem to affect their treatment seeking behaviour. However, educational level has emerged as an important predictor of seeking medical care among women. Compared with illiterate women, women in every other category of educational attainment have higher chances of seeking treatment.

6. Conclusions

Results of our study show that at least one in every ten women is suffering from STI/symptoms of STI as compared with only 4.5 percent of men among those who ever had a sexual contact. STI prevalence figures in the general population might actually be higher due to the likelihood of presence of an asymptomatic infection. A higher prevalence rate in the younger age group underlines the need to strengthen awareness of STIs and expand services for prevention and treatment for young men as well as women. Implementation of school health programmes is imperative to increase the knowledge and awareness among youth. As the results of the study has shown that mass media plays an important role both in prevalence and treatment seeking for STIs, thus, mass media can be utilised as an important means of creating community awareness of STIs and their prevention. This would also include behaviour change communication, social marketing of condoms and peer education. Addressing the cultural as well as medical concerns would serve to enhance the acceptability of community STI education. Increase in awareness of higher vulnerability to infection due to interactions between HIV/AIDS and other STI is also imperative.

Our findings reaffirm the overarching importance of education and education's direct influence on the utilisation of reproductive and sexual health services, especially among women. In order to improve reproductive and sexual health, an investment in other broader needs such as education, jobs and supportive families and communities is of paramount importance. Creating opportunities for young women has the potential to improve their sexual and reproductive health. Programmes are needed to enhance married adolescent girls' autonomy in their homes by encouraging education and strengthening girls' life skills and generating employment opportunities. Moreover, access to health care services, including STI screening and treatment, is critical, because not all STIs can be prevented, even with perfect condom use, and because so many STIs are asymptomatic and can cause long-term health risks if undetected and untreated. Training of primary health care medical and paramedical personnel in syndromic management and counselling the patient on preventive measures and partner referral are of paramount importance. Screening of asymptomatic persons, especially sexual contacts of the patients, should be advocated in confidential settings. Health care providers should be more sensitive to the special needs of young and unmarried. This may require separate entrances or areas, or clinic hours, or special 'youth-friendly' services to overcome social barriers. Strategies to reach STI services to high risk groups such as sex workers and occupational services in workplaces are imperative as detection and treatment of individuals with STIs is an important part of an HIV control strategy.

Exploring and designing innovative strategies to involve men in the reproductive health programs are of equal concern as the study has shown that women are more vulnerable to STIs than men. The results of the study also clearly underscore the influence of behavioural factors such as number of partners in the last twelve months. Thus, it is extremely important to promote the ABC approach to risk reduction (abstain from sex, be faithful to one partner, use condoms) among men. Men may be more receptive to prevention messages if they understand that STI not only threaten their own health and fertility, but it may also endanger the lives of their partners and children.

References

Garg S, Singh MM, Nath A, Bhalla P, Garg V, Gupta VK, Uppal Y. 2007. Prevalence and Awareness about Sexually Transmitted Infections among Males in Urban Slums of Delhi. *Indian Journal of Medical Sciences*; 61:269-77.

Hawkes S, Santhya KG. 2002. Diverse Realities: Sexually Transmitted Infections and HIV in India. *Sex Trans Infect*; 78:131-9.

Jejeebhoy, S. and M. Koenig 2003. The Social Context of Gynaecological Morbidity in Jejeebhoy, S. M. Koenig and Elias, C (eds.) Investigating Reproductive Tract Infections and other Gynaecological Disorders. Cambridge, Cambridge University Press.

Panchanadeswaran S, Johnson SC, Mayer KH, Srikrishnan AK, Sivaran S, Zelaya CE, et al. 2006. Gender Differences in the Prevalence of Sexually Transmitted Infections and Genital Symptoms in an Urban Setting in Southern India. *Sex Trans Infect* 2006; 82:491-

Ranjan, S and R.K. Sharma. 2002. Gender Differentials in the Knowledge of RTI and STI in India: Evidence from RCH-RHS II Survey. Available from: <u>http://www.cicred.org/Eng/Seminars/Bangkok2002</u>.

Singh S.K., H. Lhungdim, A. Chattopadhyay, T.K. Roy. 2004. Women's Vulnerability to STI/HIV in India: Findings of the CHARCA Baseline Survey. Mumbai: International Institute for Population Sciences.

United Nations Population Fund (UNFPA). 2004. Sexually Transmitted Infection: Breaking the Cycle of Transmission. New York: UNFPA.

World Health Organization (WHO). 2005. Sexually Transmitted and Other Reproductive Tract Infections. Geneva: WHO