

Clinico-epidemiological profile and high-risk sexual behavior among clients attending sexually transmitted infection clinic at a tertiary care hospital in North India

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Abstract

Context: Sexually transmitted infections (STIs) are one of the most catastrophic events of health causing huge psychosocial and economic morbidity consequences. **Aim:** The study aims to study the clinico-epidemiological profile and high-risk sexual behavior among clients attending STI clinic at tertiary care hospital in North India. **Materials and Methods:** The present study was conducted at STI clinic, King George's Medical University, Lucknow, Uttar Pradesh. Data from 1283 clients attending STI clinic between August 2015 and July 2016 were compiled using master client register and STI/reproductive tract infection patient-wise register, and a final completed data set of these patients was analyzed according to the aims and objectives. **Results:** On analyzing the various factors associated with high-risk sexual behavior among clients attending STI clinic marital status, sexual preference and employment status were found to be significantly associated with high-risk sexual behavior ($P < 0.05$). On multivariate analysis, unmarried/divorced/widow/separated marital status (odds ratio [OR]: 14.72; 95% confidence interval [CI]: 1.89–114.17; $P = 0.00$) and unemployed status (OR: 6.10; 95% CI: 2.00–18.60; $P = 0.02$) were found to be independent predictors of high-risk sexual behavior (unprotected sex). **Conclusions:** Based on findings of study, it is highly recommended to provide periodic screening to these STI patients for assessment of their sexual behavior along with specific counseling session.

Key words: Sexual behavior, sexual preferences, sexually transmitted infections

INTRODUCTION

Sexually transmitted infections (STIs) consists of more than twenty different infections that are transmitted mainly through sexual contact through the exchange of semen, vaginal fluid, blood, and other fluids or by direct contact with the affected body areas of people with STIs. STIs are a loosely defined constellation of infections and syndromes

that are epidemiologically heterogeneous, but all of which are almost always or at least often transmitted sexually.^[1] STIs (both nonulcerative and ulcerative) during the past few decades have emerged as one of the major public health problems affecting both developing and developed

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economies, thereby leading to terrible health concerns by promoting the transmission of human immunodeficiency virus (HIV) by augmenting infectiousness as well as susceptibility. The trend and pattern of STIs used to vary from region to region, especially in large nations like India.^[2] As per statistics released by the National AIDS Control Organization 2008–2009, HIV prevalence rate in the general population in our country is 0.29% and STI clinic HIV prevalence is 2.5%.^[3] Recent evidence indicates a significant increase in the number of sexual partners in some countries among these high-risk patients (including HIV positives) as well as a decline in condom use.^[4] This high-risk sexual behavior among STI patients remains one of the most effective drivers of the HIV epidemic. STIs increase the risk of transmission of HIV infection causing immense need to understand the pattern of STIs prevailing in the regions of a country. Multiple sexual partners (associated with early coitarche and premarital and extramarital sex), inconsistent use of condoms, and sexual preferences are some of well-recognized risk factors of STI.^[5,6] Sexual preference may be defined as preference one shows by having a sexual interest in members of the same, opposite, or either sex.^[7] Although many studies have examined the magnitude of high-risk sexual behaviors among general population, limited studies are present in the context of high-risk sexual behavior of these high-risk groups.

Aim of study

This hospital-based retrospective research work was planned to study the clinico-epidemiological profile and high-risk sexual behavior among clients attending STI clinic at a tertiary care hospital in North India.

MATERIALS AND METHODS

The present cross-sectional study was conducted in Dermatology Department, King George's Medical University, Lucknow, Uttar Pradesh. The data of 1283 STI clients attending STI clinic available in daily master register and STI/reproductive tract infection (RTI) patient-wise register from August 2015 to July 2016 were retrieved, compiled, and screened for completeness. The information was collected about sociodemographic characteristics, risk factors, marital status, employment, and education status, sexual history including behaviors and preferences.. The validity and completeness of data were cross-checked through the daily diary of counselor who use to record patient-wise data of STI clinic during their visit.

High-risk sexual behavior

High-risk sexual behavior in the present study is defined as having unprotected sex (nonuse of condom) with partner(s) during sexual intercourse.

Sexual preference

Sexual preference may be defined as preference one shows by having a sexual interest in members of the same, opposite, or either sex.^[7]

Data analysis

Descriptive summary was presented using frequencies, proportions, and cross tabulations. Probability (*P*) was calculated to test for statistical significance at the 5% level of significance. Factors which were significant on Chi-square test were entered into the full multivariable logistic regression model. Adjusted odds ratio and 95% confidence intervals are presented. Significance level was set at 0.05 and all of the analyses were two tailed.

RESULTS

Biosocial characteristic of clients attending sexually transmitted infection clinic

Most of the clients were adults (>18 years of age). More than four-fifth (84.5%) of them were males. About half of them were married (55.5%). Majority of them belong to Hindu (86.7%). About three-fourth of the clients were from rural areas (75.8%). Most of them were literate (95.4%). However, about one-third (30.2%) were unemployed. Almost all clients walked directly to clinic for health seeking (99.8%). About half of the participants have more than one sexual partner. More than 85% of patients gave a history of premarital/extramarital sexual contact status. Almost all (98.4%) of the clients had the history of using condom during sexual intercourse. Majority (84.1%) of the clients were heterosexual, followed by 11.5% homosexual and 4.4% bisexual. Only 1.4% of the clients attending STI clinic were seropositive for HIV [Table 1].

Presenting symptoms among clients attending sexually transmitted infection clinic

About 6.1% of the homosexual, 6.1% of the heterosexual, and 7.1% of the bisexual patients had the symptom of genital herpetic ulcer. About 5.6% of the clients presented with genital molluscum contagiosum. About 6.9% of the clients presented with the symptom of vaginal discharge. The distribution of clients presenting with urethral discharge, genital nonherpetic ulcer, inguinal buboes, scrotal swelling, and pelvic inflammatory disease

Table 1: Biosocial and behavioral characteristic of the clients attending sexually transmitted infection clinic (n=1283)

Variable	Category	n (%)
Age (years)	≤18	52 (4.1)
	>18	1231 (95.9)
Gender	Male	1083 (84.4)
	Female	200 (15.6)
Marital status	Married	711 (55.5)
	Others*	572 (44.5)
Religion	Hindu	1114 (86.7)
	Non-Hindu	169 (13.3)
Residence	Rural	972 (75.8)
	Urban	311 (31.1)
Educational status	Literate	1224 (95.4)
	Illiterate	59 (4.6)
Employment status	Employed	895 (69.8)
	Unemployed	388 (30.2)
Health seeking	Direct walk-in	1281 (99.8)
	Referred	2 (0.2)
Number of sexual partner	≤1	606 (47.2)
	>1	677 (52.8)
Physical contact status	Premarital/extramarital	1112 (86.6)
	None	171 (13.4)
Condom use	Present	1263 (98.4)
	Absent	20 (1.6)
Sexual preference	Homosexual/bisexual	205 (15.9)
	Heterosexual	1078 (84.1)
HIV status	Positive	18 (1.4)
	Negative	1265 (98.6)

*Unmarried/divorced/widow/separated. HIV=Human immunodeficiency virus

was 1.1%, 0.2%, 0.1%, 1.2% and 0.3% respectively [Table 2].

Factors associated with high-risk sexual behavior among clients attending sexually transmitted infection clinic

On analyzing the various factors associated with high-risk sexual behavior among clients attending STI clinic marital status, employment status and sexual preference were found to be significantly associated with high-risk sexual behavior ($P < 0.05$). On univariate analysis, those clients other than married were about 25 times more preponderate toward unprotected sex. The high-risk sexual behavior was about 10 times more common among unemployed clients. Furthermore, the proportion of noncondom users among homosexual/bisexual clients was double than those who were heterosexuals [Table 3]. On multivariate analysis, unmarried/divorced/widow/separated marital status (odds ratio [OR]: 14.72; 95% confidence interval [CI]: 1.89–114.17; $P = 0.00$) and unemployed status (OR: 6.10; 95% CI: 2.00–18.60; $P = 0.02$) were found to

be independent predictors of high-risk sexual behavior (unprotected sex) [Table 4].

DISCUSSION

Limited studies are available in Indian context related to the high-risk sexual behavior among clients attending STI clinic. Therefore, the study aims to study the clinic-epidemiological profile and factors associated with high-risk sexual behavior among these clients. Out of 1283 patients having STIs, there were 1083 male and 200 female with male-to-female ratio of 5.44:1. The ratio was much higher as reported in other Indian studies.^[8-10] Maximum patients were adults (≥ 18 year of age) in both males and females. Saini *et al.* opined that as individuals in this age group were comparatively more sexually active therefore were more susceptible to STIs.^[2] Similar types of findings are also revealed in majority of other Indian studies.^[2,8,10,11] Most of the patients were literate, a finding in line with other Indian studies.^[2,8] Lack of knowledge regarding treatment and prevention of STIs might be the reason for their current symptomatic condition. Out of 1283 patients, almost all (99.8%) clients walked in directly to STI clinic, a finding concurrent with a previous STI clinic-based study.^[8] However, in a study conducted in Brazil, only 43.4% of the patients walked directly to STI clinic for health seeking.^[12] With respect to clinical profile and patients' presenting symptoms, the results for bacterial STIs such as syphilis and genital herpetic and nonherpetic ulcer were more or less in the trends for other Indian studies.^[2,11-13] The proportion of noncondom users was 1.6%. This prevalence of high-risk sexual behavior was much lower than that reported in study among other high-risk groups.^[14-17] Regarding the high-risk sexual behavior, although on univariate analysis, unmarried/divorced/widow/separated marital status, unemployment status, and homosexual/bisexual sexual preference were found to be more associated with nonuse of condom during intercourse. However, logistic model revealed unemployment status and unmarried/divorced/widow/separated marital status to be significantly and independently associated with high-risk sexual behavior. Mhalu *et al.* opined that partner support plays an important role in attenuating high-risk sexual behavior.^[18] Therefore, association between unmarried/divorced/widow/separated marital status with high-risk sexual behavior could be due to lack of partner support or might be attributed to the need of these groups for fulfilling their sexual desire. Furthermore, in line with the well-established facts, the homosexual/bisexual preference was more among those patients who were having more than one sexual partner.^[19]

Table 2: Distribution of the presenting symptoms of clients attending sexually transmitted infections on the basis of their sexual preference (n=1283)

Presenting symptoms	Sexual preference			Total, n (%)
	Homosexual (n=149), n (%)	Heterosexual (n=1078), n (%)	Bisexual (n=56), n (%)	
Urethral discharge	1 (0.7)	12 (1.1)	1 (1.8)	14 (1.1)
Genital ulcer herpetic	9 (6.1)	66 (6.1)	4 (7.1)	79 (6.2)
Genital ulcer nonherpetic	0	3 (0.3)	0	3 (0.2)
Vaginal discharge	0	88 (8.1)	0	88 (6.9)
Inguinal bubo	0	1 (0.1)	0	1 (0.1)
Genital scabies	3 (2.0)	19 (1.8)	0	22 (1.7)
Genital molluscum contagiosum	8 (5.4)	62 (5.7)	2 (3.6)	72 (5.6)
Scrotal swelling	2 (1.4)	14 (1.3)	0	16 (1.2)
Genital warts	3 (2.0)	60 (5.6)	3 (5.4)	66 (5.1)
PID	0	4 (0.37)	0	4 (0.3)
Asymptomatic	1 (0.7)	3 (0.3)	0	4 (0.3)
Others (presenting with psychosexual disorders like that syndrome, premature ejaculation etc.)	117 (78.4)	754 (69.9)	44 (78.6)	914 (71.2)

PID=Pelvic inflammatory disease

Table 3: Factors associated with high-risk sexual behavior among clients attending sexually transmitted infection clinic (n=1283)

Factors associated with sexual preference	Condom use during intercourse		χ^2	P
	Protected (n=1263), n (%)	Unprotected (n=20), n (%)		
Age (years)				
≤18	52 (4.1)	0	0.85	0.35
>18	1211 (95.9)	20 (100.0)		
Gender				
Male	1069 (84.6)	14 (70.0)	3.2	0.19
Female	193 (15.3)	6 (30.0)		
Marital status				
Married	710 (56.2)	1 (5.0)	20.09	0.00
Others*	553 (43.8)	19 (95.0)		
Religion				
Hindu	1096 (86.8)	18 (90.0)	0.17	0.67
Non-Hindu	167 (13.2)	2 (10.0)		
Residence				
Rural	955 (75.6)	17 (85.0)	0.97	0.33
Urban	308 (24.4)	3 (15.0)		
Educational status				
Literate	1205 (95.4)	19 (95.0)	0.00	0.93
Illiterate	58 (4.6)	1 (5.0)		
Employment status				
Employed	891 (70.5)	5 (20.0)	23.84	0.00
Unemployed	372 (29.6)	16 (80.0)		
Health seeking				
Direct walk-in	1261 (99.8)	20 (100.0)	0.32	0.85
Referred	2 (0.2)	0		
Number of sexual partners				
≤1	594 (47.0)	12 (60.0)	1.32	0.24
>1	669 (53.0)	8 (40.0)		
Physical contact status				
Premarital/extramarital	1092 (86.5)	20 (100.0)	3.12	0.07
None	171 (13.5)	0		

Contd...

Table 3: Contd...

Factors associated with sexual preference	Condom use during intercourse		χ^2	P
	Protected (n=1263), n (%)	Unprotected (n=20), n (%)		
Sexual preference				
Homosexual/bisexual	198 (15.7)	7 (35.0)	5.47	0.01
Heterosexual	1065 (84.3)	13 (65.0)		
HIV status				
Positive	18 (1.4)	0	0.28	0.9
Negative	1245 (98.6)	20 (100.0)		

*Unmarried/divorced/widow/separated. HIV=Human immunodeficiency virus

Table 4: Univariate and multivariate analysis of factors associated with high-risk sexual behavior among clients attending sexually transmitted infection clinic (n=1283)

Factors associated with high-risk sexual behavior	Condom use during intercourse		Unadjusted OR (95% CI)	Adjusted OR (95% CI)
	Unprotected sex (n=20), n (%)	Protected sex (n=1263), n (%)		
Marital status				
Others*	19 (3.3)	553 (96.7)	24.3 (3.2-182.7)	14.7 (1.8-114.1)
Married	1 (0.1)	710 (99.9)		
Employment status				
Unemployed	16 (4.1)	372 (95.9)	9.5 (3.1-28.8)	6.1 (2.0-18.6)
Employed	4 (0.4)	891 (99.6)		
Sexual preference				
Homosexual/bisexual	7 (3.4)	198 (96.6)	2.8 (1.1-7.3)	1.4 (0.5-3.8)
Heterosexual	13 (1.2)	1065 (98.8)		

*Unmarried/divorced/widow/separated. OR=Odds ratio; CI=Confidence interval

Limitations

However, the study has some limitations. The results of the study were interpreted from the limited data retrieved retrospectively from the STI/RTI patient register. Only restricted number of available independent variables in data set could only be explored and analyzed. Role of number of important known variables such as addiction, social support, and family concerns could not be analyzed in the study.

CONCLUSIONS

The present study was an attempt to provide an insight and overview about factors associated with high-risk sexual behavior among these clients attending STI clinic. Unmarried/divorced/widow/separated marital status and unemployed status were found to be independent predictors of high-risk sexual behavior. Based on recent results, it is highly recommended to increase the efforts toward safe sexual practices focusing on these groups. Apart from that, periodic screening of these patients for assessment of sexual behavior along with focused counseling session should be provided to this high-risk population.

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Conflicts of interest

There are no conflicts of interest.

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