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THE STUDY OF PATHOGENESIS, PREVALENCE AND DISTRIBUTION OF SEXUALLY TRANSMITTED DISEASES (STDS) IN POPULATION OF AHMEDABAD/GUJARAT AND ITS VICINITY

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ABSTRACT

A total of 942 patients were included with various STDs, 728 (77.28%) were males and 214 (22.71%) were females who attended the Suraksha Clinic, Civil Hospital, Ahmedabad, from 2011 to 2015. The STD prevalence in different areas of Ahmedabad were Kalapinagar (4.8%), Asarwa (3.3%), Odhav (3.2%) etc. Majority of the patients belonged to the age group of 25-34 years (41.2%). most of the patients exposed had completed their primary education. of the patients affected were Labourers followed by Service class. The commonest STDs was Herpes progenitalis (47.66%) followed by Syphilis (16.77%), HIV (6.9%), Molluscum contagiosum (6.687%), Mixed VDs (6.369%), Chancroid (5.414%), Gonorrhoea (5.095%), Condyloma acuminate (2.547%), Granuloma Inguinale (0.6%) and Lymphogranuloma venereum (0.4%).

Key words: Sexually Transmitted Diseases, Herpes progenitalis and Syphilis

INTRODUCTION

Sexually transmitted infections (STIs) represent a large and diverse category within infectious diseases, comprising more than thirty-five pathogens infectious through sexual contact [(1)]. India has the third largest HIV epidemic in the world. In 2013, HIV prevalence in India was an estimated 0.3%. This figure is small compared to most other middle-income countries but because of India's huge population (1.2 billion) this equates to 2.1 million people living with HIV. In the same year, a projected 130,000 people died from AIDS-related illnesses [(2: 3)]. Overall, India's HIV epidemic is slowing down, with a 19% decline in new HIV infections (130,000 in 2013), and a 38% decline in AIDS-related deaths between 2005 and 2013. Despite, this 51% of deaths in Asia are in India [(4: 5).]

Annual new HIV case detection declined markedly as per the National AIDS Control Organization (NACO) report [(6).] It is very important to conduct and survey showing prevalence and distribution of STDs in population of Gujarat and its vicinity as such diseases increase in our state affecting the health status. Hence, this study was proposed in regard to demographic, clinical and socio-economic trends in population of Gujarat state.

MATERIALS AND METHODS

A number of 942 patients were analyzed who attend the Sexually transmitted disease (STD) Clinic or Suraksha Clinic of Civil Hospital Ahmedabad having complaint of genital ulcers, genital discharge or genital growths were studied in detail. These patients were interviewed according to standard Proforma

which contained details about the demography-age, sex, education, occupation, marital status, socioeconomic status, domicile of the patients and other details. This work also approved by Department Internal Human Ethical Committee (IHEC) project No: HEC-01.

Details were also taken regarding sexual activities of the patients i.e. heterosexual, bisexual, homosexual or other exposures. Information regarding the number of partners and whether they are of high risk activity (commercial sex workers and persons having multiple homosexual and heterosexual partners) was noted in detail. Information was also obtained regarding the last high risk exposure (Other than spouse or regular partner). The patients were also questioned about past history of genital ulcers, warts or discharges. Information regarding the personal history of the patient like history of alcohol or drug abuse, tobacco chewing, smoking or travelling job was taken into account.

A detail clinical examination of the patient was done for various STDs like herpes progenitalis, genital warts etc. Examination of the external genatalia, perianal and anal region, skin and oral mucosa were also done. Examinations of body lesion were carried out to rule out Primary and secondary syphilis.

The patients after clinically diagnosed as having sexually transmitted diseases (STDs) were then advised to give blood to perform following tests. Approximately 5 ml of venous blood was aspirated and the following tests were performed. Rapid Plasma Reagin (RPR- Carbogen, Tulip Diagnostics, Goa) test was done to rule out syphilis and confirmed with the Treponema pallidum hemagglitination assay (TPHA) (OMEGA, diagnostics IMMUTREP TPHA, Scotland, UK).

Blood specimens were obtained and sera tested for anti HIV antibody using NACO guidelines. First ELISA was performed using Recombigen HIV-1/HIV-2 EIA kit (Enzaids by Span Diagnostics, Ltd, Surat) and sera positive by first ELISA were retested by Immunocomb method (Orgenics, Isreal: UNAIDS/WHO, 1998) and also by Rapid Tridot method (J. Mitra and Co. Ltd., India).
The patients for HIV were counselled and depending on the signs of HIV illness (fever, weight loss, lymphadenopathy, and diarrhoea) were subjected to CD4 cell count (using Fluorescent activated cell sorter (FACS) machine) investigation to know the immune status of the patients. Depending on the CD4 counts the patients were referred to HIV medicine from where they are advised about initiating antiretroviral therapy (ART).

RESULTS

In the present study of 942 patients were included with various STDs, 728 (77.28%) were males and 214 (22.71%) were females who attended the Suraksha Clinic, Civil Hospital, Ahmedabad, from 2011 to 2015 (Fig 1).

The STD prevalence in different areas of Ahmedabad were Kalapinagar (4.8%), Asarwa (3.3%), Odhav (3.2%), Chamanpura (3.2%), Civil (2.9%), Gandhinagar (2.9%), etc. respectively (Table 2).
The prevalence of STDs however in vicinity of Ahmedabad/Gujarat is Dehgam (2.4%), Banashakantha (2.2%), Kalol (1.4%), etc. The prevalence of these STDs in the other state population is also higher comparatively like Rajasthan (2.9%), Madhya Pradesh (1.4%) and Uttar Pradesh (0.9%) including Traveller (12.31%) attending this clinic (Table 2).

Age groups in our study were 0-14, 15-24, 25-34, 35-44, 45-54, 55-64 and 65 and above. Majority of the patients, 316 belonged to the age group of 25-34 years (41.2%) followed by

age group of 15-24 years (30%), 35-44 years (16.3%) and 45-54 years (6.7%). A total of 25 patients were from the paediatric age group 0-14 years (2.7%) and 18 patients were in the age group of 55-64 years (1.9%) and 11 patients were in 65 yrs and above (1.2%) (Fig 2).

In the present study most of the patients exposed had completed their primary education (36.6%) followed by high school education (22.8%) and illiterate group (18.9%). Higher secondary education was completed by 12.3% of the cases and 7.7% were graduates and 1.6% were only post graduates in them. Hence, education is also an important factor (Fig 3).

In our study majority of the patients affected were Labourers (28.9%), followed by Service class (11.9%), Housewives (10.8%), Diamond workers (8.3%), unemployed (6.8%), Factory workers (5.5%), Skilled workers (5.4%), Students (5.4%), Farmers (3.5%), Drivers (3.4%), Business workers (3.3%), CFSWs (2.9%) and Servants (2%) as well as Security (1.9%). Labourers were also highly affected among all with above STDs patients (Fig 4).

Out of 728 males, 414 were married (56.9%) and 274 were unmarried (37.6%), followed by Widow/Widower (2.2%), Staying away (1.5%), Divorced (1.1%) and Remarriage (0.7%) (Fig 5).

Our study also indicate that, out of 728 male patients, 363 (49.9%) had exposure with commercial female sex workers. A number of 203 (27.9%) were married, 132 (18.1%) were unmarried while 28 (3.8%) were either divorced, widowers, staying away or remarried. A total 108 males (14.8%) had exposure with known persons like girlfriend or relative. Out of 108, 62 (8.5%) married males had extramarital relations with a known person. A total 57 males (7.8%) had an exposure with strange person. Out of 57 males, 32 (4.4%) were married and 22 (3%) were unmarried (Fig 6).

In this study, 214 female patients were included. Majority of them, 100 (46.7%) strongly denied history of exposure outside marriage. Out of them 65 (30.4%) were married females while 22 (10.3%) were unmarried and 13 (6.1%) were either divorced, widower or staying away from their spouse or remarried who denied history of exposure (Fig 7).

Out of total 942 cases with various STDs, Herpes Progenitalis was the most commonest STD reported in 449 (47.66%) followed by Syphilis in 158 cases (16.77%), HIV 65 cases (6.9%), Molluscum contagiosum 63 cases (6.687%), Mixed VDs 60 cases (6.369%), Chancroid 51 cases (5.414%), Gonorrhoea 48 cases (5.095%), Condyloma acuminate 24 cases (2.547%), Granuloma Inguinale 6 cases (0.6%) and Lymphogranuloma venereum 4 cases (0.4%) (Fig 8).

DISCUSSION

The present study was undertaken to study the demographic profile, gender variation and pattern of various sexually transmitted diseases including HIV/AIDS in 4 years i.e. from 2011 to 2015 in Civil Hospital, Ahmedabad consisting of 942 patients ranging in age ranging from 1 to 65 years. Majority of the patients (728) were males (77.28%) and 214 patients were females (22.71%). This is accordance with various studies carried out in different STD clinics in various states of India. In a study by Ghosh [7] from Kolkata, males were (86%) and female (14%) respectively in a total of 4129 patients. In a study by Burzin [8] from Ahmedabad, Gujarat there were males (83.42%) and females (16.58%) in 1870 patients. Another study by Sharma et al. [8] from Jaipur, Rajasthan there were 78% males and 22% females which were very similar to our study. Hassan et al. [10] from Jammu and Kashmir, had males 54.35% and females 45.65%. In general all the studies carried out in various cities/states of India showed more number of males patients who seek advice for STDs.

Majority of the patients affected in the present study were in the young age group of 15-34 (71.2%) as compared to others. It is similar to the studies done by Grover et al [11], Shendre and Rajanarayan [12], Aggarwal [13] and Burzin [8] who reported 81%, 80.43%, 76% and 75.61% respectively. Study by Majumdar and Saha [14] and Ray et al [15] reported 92% and 89.8% of cases in the young age group of 15-34 years with highest sexual activity.

The present study also indicated, 36.6% of the patients had completed their primary education followed by those who had completed high school education (22.8%). Illiteracy was found in 18.9% of cases. Similar studies done by Mehta et al. [16] and Subramanium et al [17] reported high school educated cases (35% and 33.3%) respectively who were affected. Another study by Kapoor et al [18] revealed Primary education (48.9%), High school (23.8%) and illiterate 16.7% were in distribution similar to our study.

Occupation wise majority of the patients were labourers (28.9%), followed by service class (11.9%), housewives (10.8%), diamond workers (8.3%), unemployed (6.8%), factory workers (5.5%), skilled workers (5.4%), students (5.4%), farmers (3.5%), drivers (3.4%), commercial female sex workers (2.9%) and servants (2%). Similarly studies of Murugesh et al. [19] who reported, 25.05% affected were labourers. Another study by Burzin [8] reported similar trend. These studies reflect on poor socio-economic activity, sexual contact with more than one person and more contacts per day [20, 21].

In our study, housewives accounted for 102 (10.8%) of the cases. Murugesh et al. [19] obtained only 14.95%. Study by Talsania et al. [21] reported 30.6% of the cases which is higher and is compared to our study. This may be related to more sexual contact of the male partners.

Majority of the patients in the present study were married (56.9%), followed by unmarried (37.6%), Widow/Widower (2.2%), Staying away from their spouse due to travelling job at other places (1.5%), Divorced (1.1%) and Remarriage (0.7%). Married patients in this study constituted 58.4% of the cases, which is similar to the studies by Khandpur et al. [22], Narayanan [20], Burzin [8] and Kapoor et al [18], who reported 54.56%, 55.1%, 58.07% and 58.4% respectively. Studies of Mehta et al. [16] and Murugesh et al. [19] documented 82% and 72.87% respectively.

In males, the most common route of acquisition of STDs is by contact with commercial female sex workers (CFSWs) (49.9%). This is similar to the study by Solanki et al. [23] from Jamnagar who reported exposure with CFSWs was 46%. Studies from Aggarwal [13] and Chetna et al. [24] reported 83.07% and 66.8% which was high in support of our study.

In the present study out of total 942 cases with various sexually transmitted diseases, Herpes Progenitalis was the most commonest STD reported in 47.66% of the cases followed by primary and secondary Syphilis together accounting 16.77%, HIV (6.9%), Molluscum contagiosum (6.687%), Mixed VDs (6.369%), Chancroid (5.414%), Gonorrhoea (5.095%), Condyloma acuminate (2.547%), Granuloma Inguinale (0.6%) and Lymphogranuloma venereum (0.4%).

Demographic data revealed that Asarwa, Dehgam and Rajasthan were highly positive for STD infection from survey at this clinic. Age, education, gender, occupation and contact with sex workers are important indices for STD progression in Population. Hence, Ahmedabad/Gujarat comparatively the highest incidence of STDs cases are Herpes Progenitalis followed by Syphilis and HIV from our survey.

CONCLUSION

Amongst 942 cases study for 11 sexually transmitted diseases highest STD focused was HP followed by syphilis and HIV based on seropositive tests and clinical manifestations. Males were more affected than the opposite sex. The clinico-socio-economic profiles include illiteracy, low education, marital status, prostitutes, lack of knowledge about disease/health, age etc are led to viral and bacterial STDs in Gujarat including India and around the globe.

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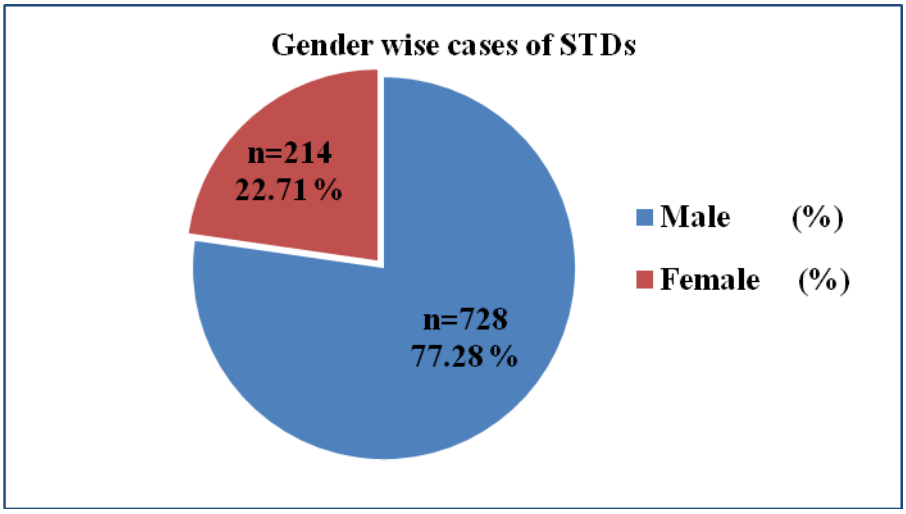

Fig 1: Gender wise cases of STDs

Table 1: STDs cases in population of Ahmedabad / Gujarat and its vicinity

Sr. No.	Area	Total no. of case	Percentage (%)
01	Kalapinagar	46	4.883
02	Vadaj	14	1.486
03	CTM	22	2.335
04	Rakhiyal	08	0.849
05	Asarwa	32	3.397
06	Civil	28	2.972
07	Dillidarwaja	16	1.698
08	Vastral	09	0.955
09	Amraiwadi	21	2.229
10	Odhav	31	3.290
11	Vatva	23	2.441
12	Meghaninagar	08	0.849
13	Sarkhej	11	1.167
14	Laldarwaja/Shahpur	15	1.592
15	Sardar nagar	19	2.016
16	Chandkheda	05	0.530
17	Juhapura/Vejalpur	12	1.273
18	Sabarmati	02	0.212
19	Chamanpura	31	3.290
20	Bapunagar	19	2.016
21	Gomtipur	10	1.061
22	Prahladnagar	01	0.106
23	Paldi	06	0.636
24	shahibag	13	1.380
25	Memco	19	2.016
26	Chandlodiya	11	1.167
27	Saraspur	15	1.592
28	Naroda	22	2.335
29	Ambawadi	09	0.955
30	Saijpur bogha	24	2.547
31	Jivraj park	03	0.318
32	Ishanpur	11	1.167
33	Kubernagar	15	1.592
34	Gatlodiya	12	1.273
35	Thakkar nagar	18	1.910
36	Kathwada	10	1.061
37	Narol	25	2.653
38	Gandhinagar	28	2.972
39	Kalol	04	0.424
40	Mansha	10	1.061
41	Dehgam	23	2.441
42	Mehsana	08	0.849
43	Kalol	14	1.486
44	Sabarkantha	12	1.273
45	Banashakantha	21	2.229
46	Vadodara	09	0.955

47	Amreli	11	1.167
48	Junagadh	05	0.530
49	Surat	07	0.743
50	Kheda	17	1.804
51	Daskroi	10	1.061
52	Rajasthan	28	2.972
53	Madhya Pradesh	14	1.486
54	Uttar Pradesh	09	0.955
55	Traveller	116	12.31
Total		**942**	**100**

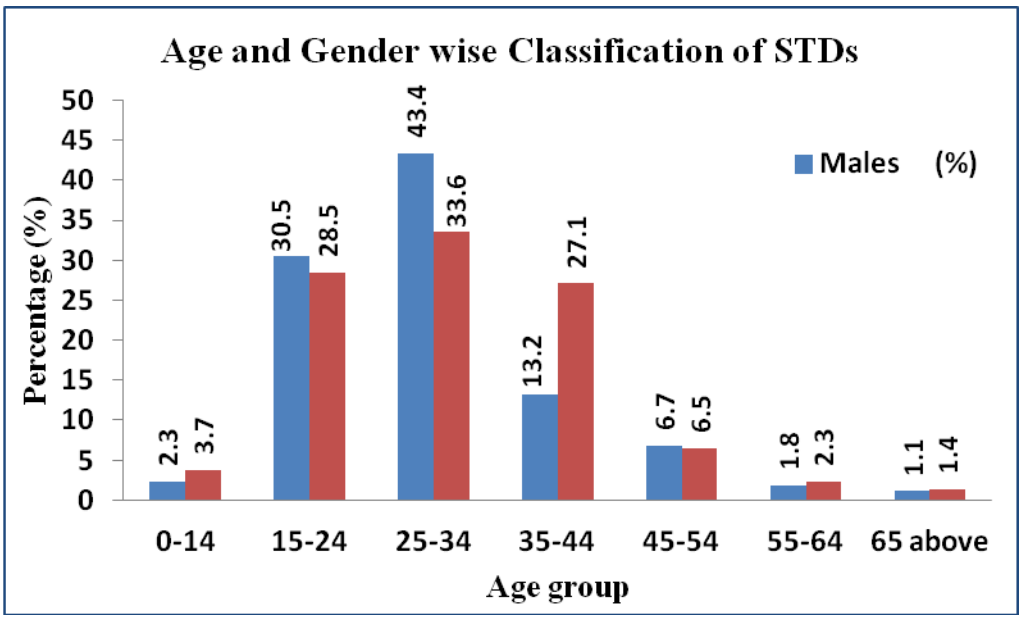

Fig 2: Age and Gender wise Classification of STDs

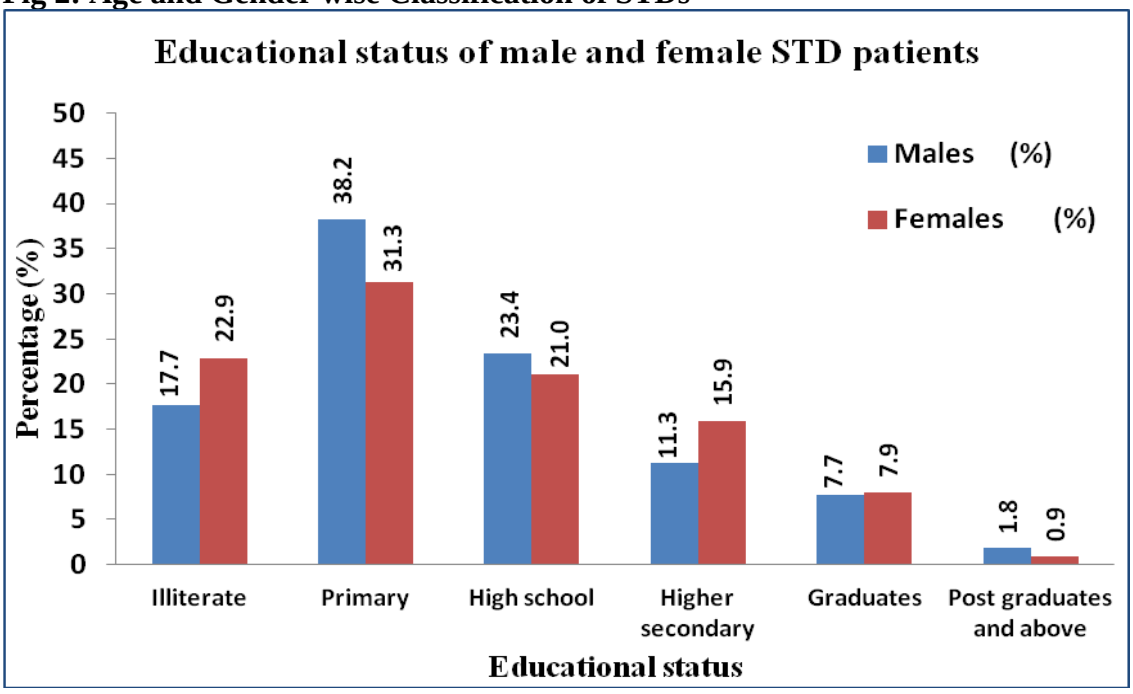

Fig 3: Educational status of male and female STD patients

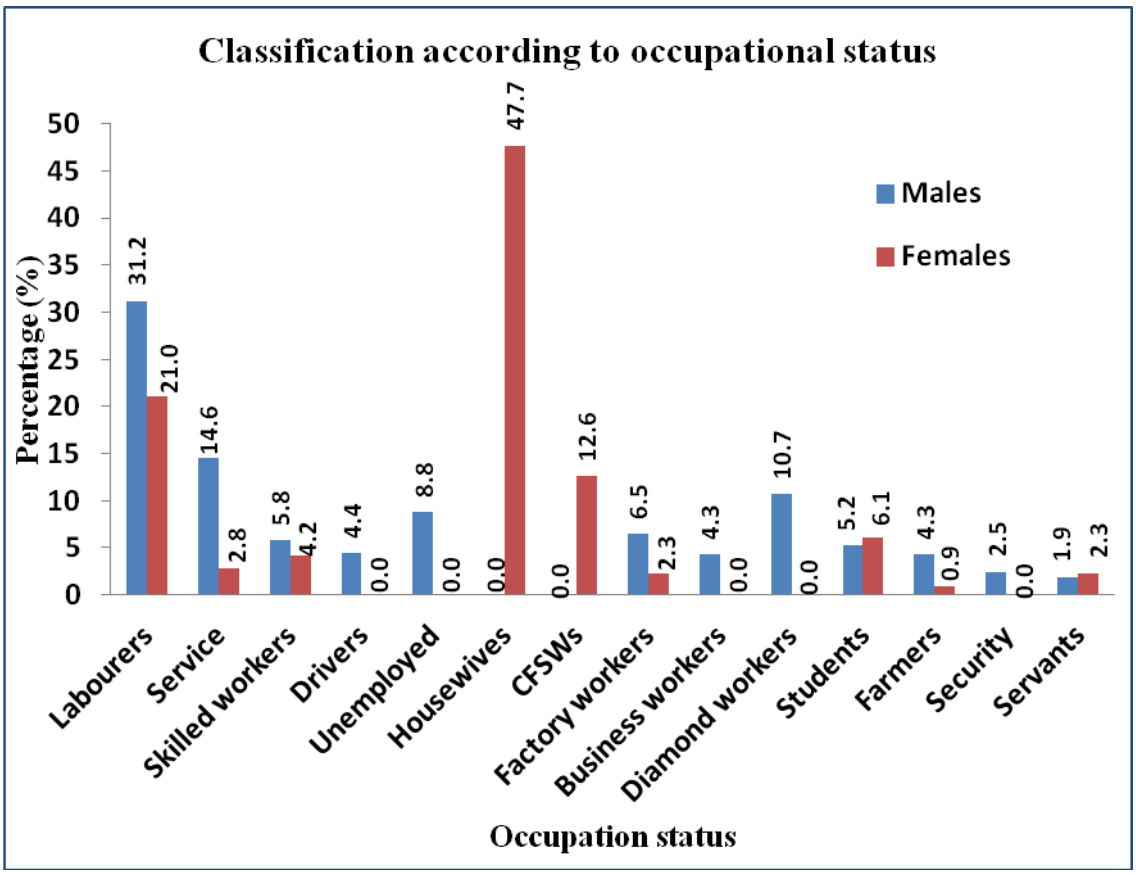

Fig 4: Classification according to occupational status

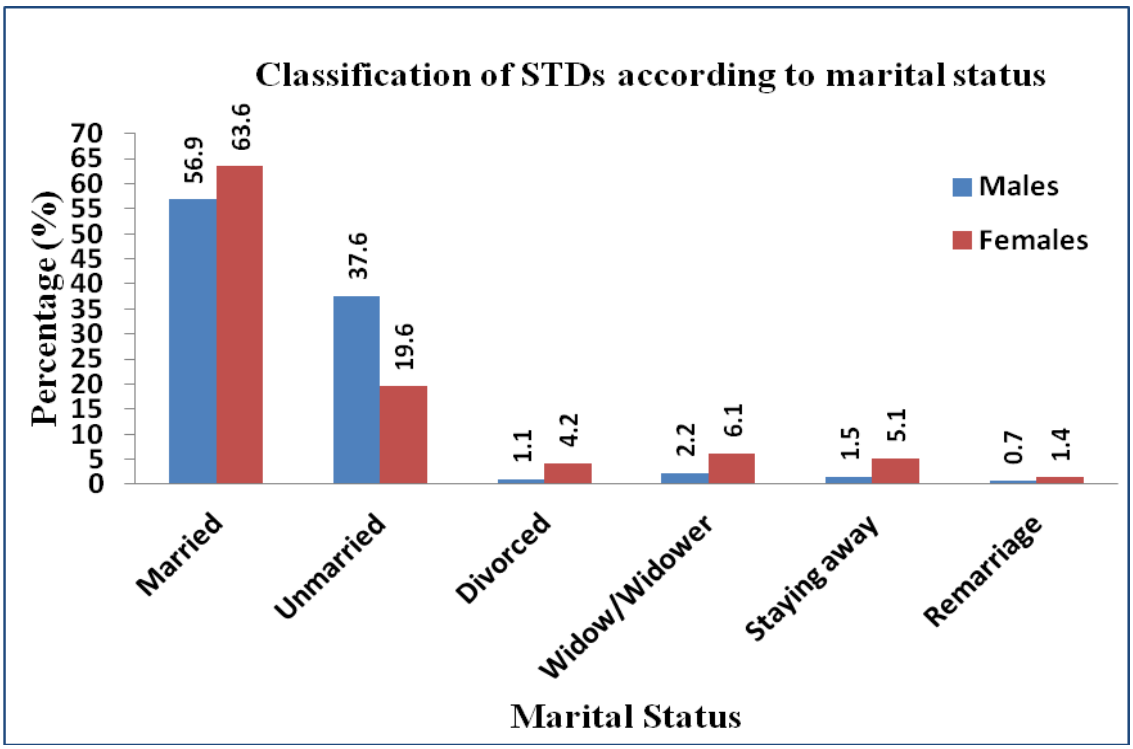

Fig 5: Classification of STDs according to marital status

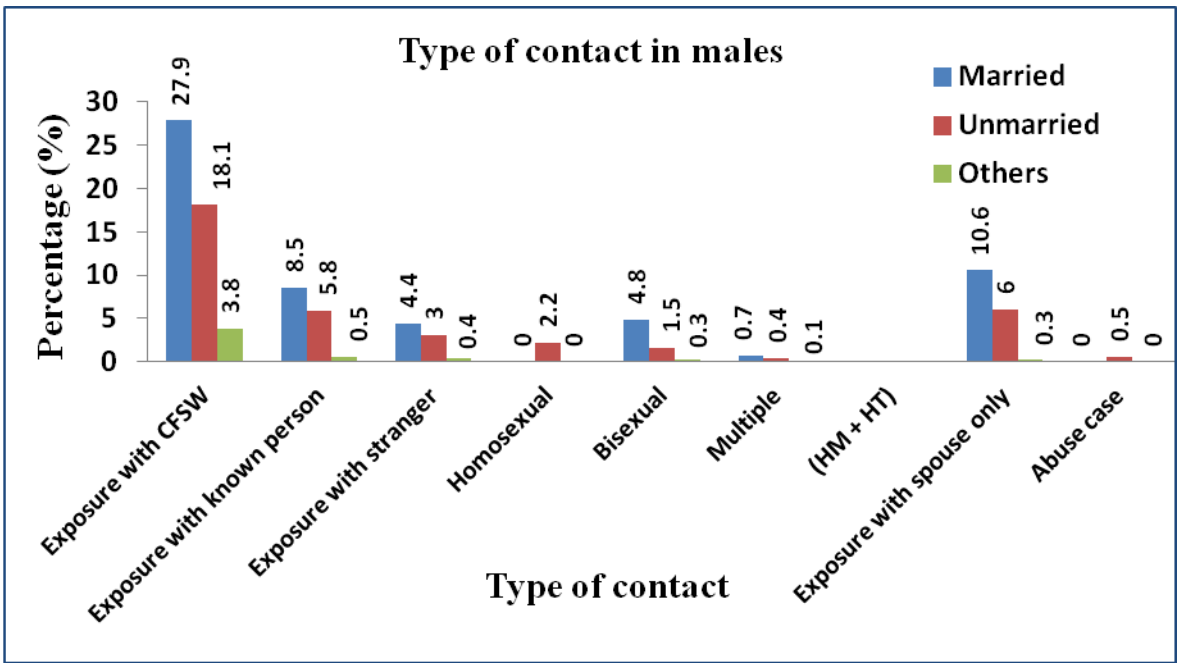

Fig 6: Type of contact in Males

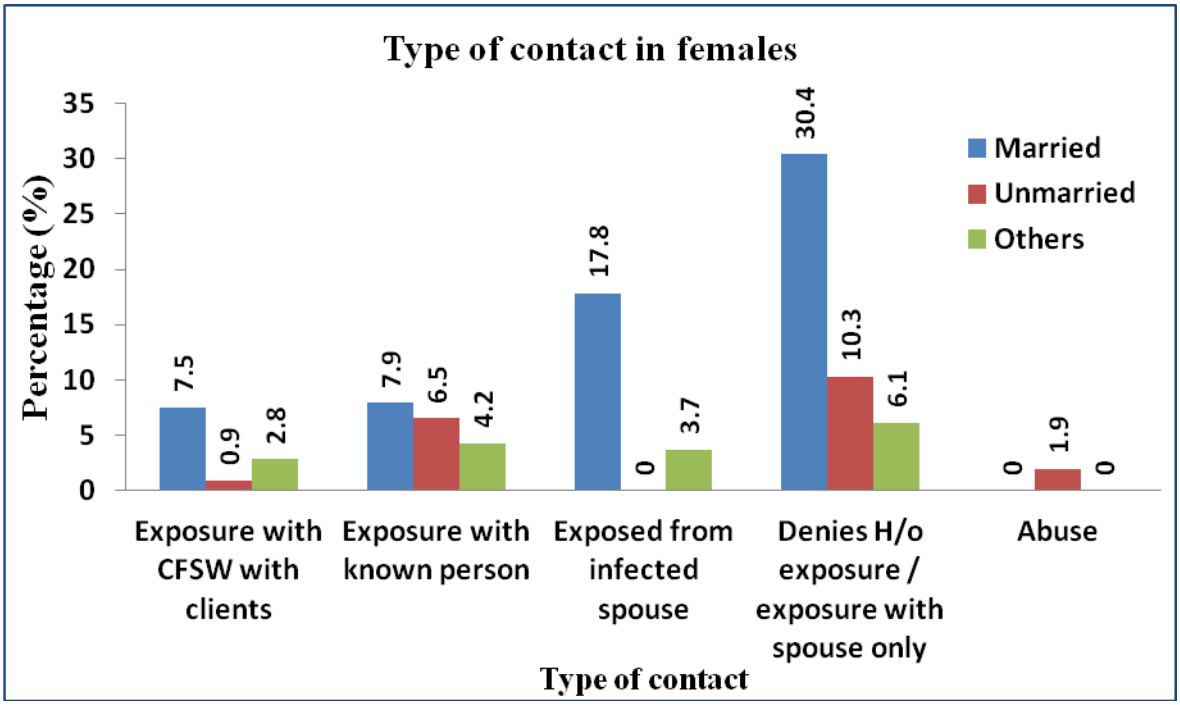

Fig 7: Type of contact in Females

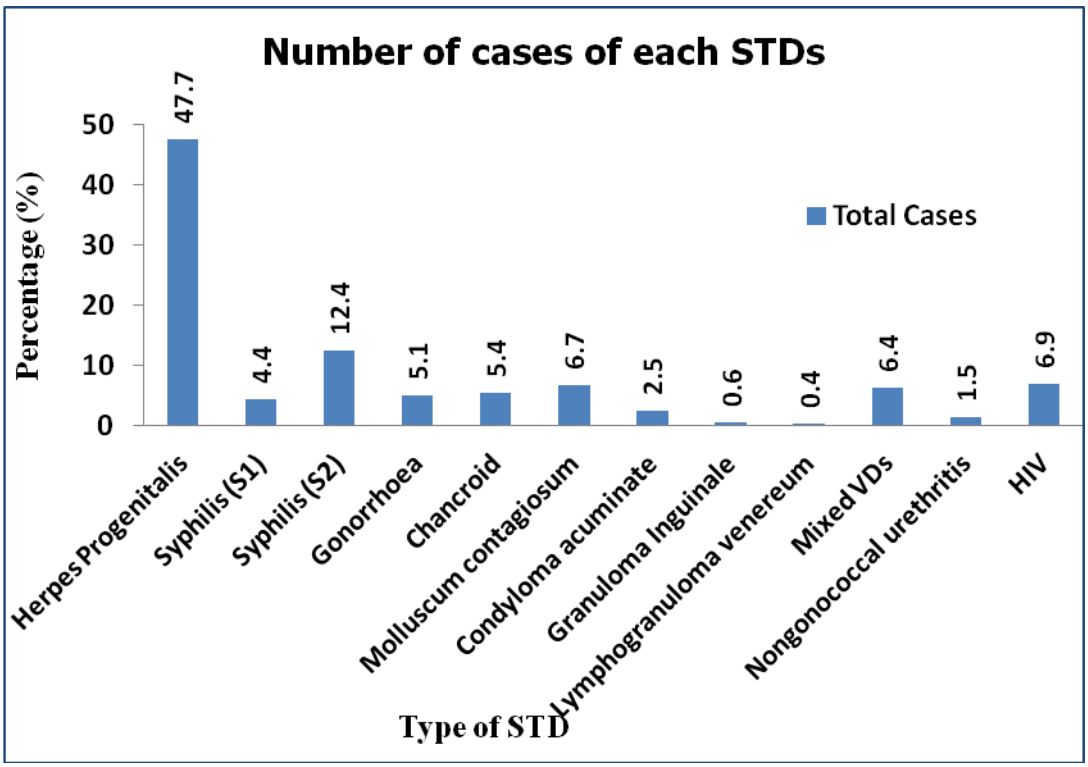

Fig 8: Number of cases of each STDs