



Original Research Article

## Clinico-epidemiological and Socio-demographic Profile of HIV Positive Patients, Visiting Clinic in Ahmedabad, Gujarat, India

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### ABSTRACT

**Background:** The global estimates of HIV/AIDS cases and especially the growing number of women and children being infected and affected by it, raises serious concern. In the absence of a vaccine or cure for HIV infection, our only option is to promote awareness and sexual behavior change for primary prevention of HIV.

**Aims:** 1. To study the Clinico-epidemiological profile of HIV positive patients.

2. To study the Socio-demographic profile of same. 3. To study the other associated clinical co-morbidities.

**Setting and Design:** It is the retrospective study in Infectious Disease clinic

**Methods and Material:** A structured, open ended and pretested proforma was used to interview HIV positive patients attending Infectious Disease clinic, Ahmedabad. Prior verbal and written consent was taken. This study included 600 HIV positive cases of all ages attending clinic during January-June 2011.

**Results:** The study included 600 individuals including males were double (68.3%) than females (31.7%), 82.5% were in age group 15-49 years, 86.7% were married, 28.3% were from rural areas and 69.5% were migrant patients. In 45 % cases, spouses were HIV positive while 38 % cases didn't know the HIV status of their spouses. Maximum 83.3% were positive through hetero-sexual route and 72% were having one or more clinical symptoms.

**Conclusion:** The study emphasizes the need for strict adherence to their Highly Active Antiretroviral Therapy (HAART) & awareness about disease in order to have better prevention of spreading disease in community.

**Key words:** Socio-demographic profile, HIV/AIDS, retrospective study

## INTRODUCTION

Human Immunodeficiency virus (HIV) and Acquired Immuno-Deficiency Syndrome (AIDS) is threatening the survival of many nations. It can't be cured but can be effectively prevented by changing the sexual behavior of community [1] and halted by ART regimen. [2] India is having third largest number of people living with HIV/AIDS. [3] In India, since the first case was detected in 1986, [4] HIV infection and AIDS rapidly spreaded to the other parts of the country. HIV/AIDS prevalence in India is around 0.36% and is prevalent in all states. [5] As per data, around 2.5-3 million people are living with HIV/AIDS in India. [4] Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that more than 40 million people worldwide were living with HIV/AIDS by the end of 2010 and of these vast majority (90%) are surviving in developing countries. [2] In this, women account for 47% of all adult living with HIV/AIDS. [2] In Gujarat, 0.4% adult population is living with HIV and around 1.4 lakhs with AIDS. [2] Heterosexual route of transmission is the main driver of the epidemic in most of India, accounting for nearly 90% nationwide prevalence. [6]

Opportunistic infections (OIs) are an important cause of morbidity and mortality in patients with HIV/AIDS. When CD4 counts fall below 350cells/mm, [3] the infection is associated with wide variety of OIs and other co-morbidities. [7] In order to implement the desired interventions, the epidemiology of modes of transmission (HIV/AIDS) in a particular region has to be understood with regards to socio-demographic factors, level of awareness, as well as risk behavior of the population. It is so because effective approach for prevention and control of infection/disease is through awareness generation and life style modifications. [8] In a view of above facts

and figures, this study was carried out to contemplate the clinico-epidemiological profile of HIV positive patients attending tertiary care clinic in private sector in Ahmedabad.

## MATERIAL AND METHODS

The retrospective study was carried out from the data available at a tertiary care clinic in Ahmedabad. The clinic is mainly concerned with infectious diseases including HIV. Gujarat, Rajasthan and Madhya Pradesh are main catchment areas of this clinic. The patients included in the study were diagnosed as HIV positive during the period of 2007 to 2010. The period of information collection was during January-June 2011. The data was collected in pretested and structured proforma (questionnaire). Informed verbal consent was taken and 600 patients were selected and interviewed during above said period. Subsequent to the interview process, the patients were imparted health education on importance of safe sex, proper method of condom use, early signs, symptoms and treatment of various STIs and OIs etc. The collected data was analyzed using Microsoft Excel and Epi Info software Version 7.

## RESULTS

Table 1: Demographic profile of patients in the study.

Sex	Male (%)	Female (%)
Age (n=600)*		
0-5	1 (50)	1 (50)
6-14	13 (81)	3 (19)
15-24	20 (69)	9 (31)
25-49	298 (64)	168 (36)
>50	68 (78)	19 (22)
Marital status (n=600)**		
Divorced	5 (71.4)	2 (28.6)
Married	347 (66.7)	173 (33.3)
Remarried	4 (44.4)	5 (55.6)
Not applicable	54 (84.4)	10 (15.6)
Locality (n=600)***		
Rural	116 (68.2)	54 (31.8)
Urban	294 (68.4)	136 (31.6)

Note: Figure in the parenthesis shows percentage  
\* $\chi^2 = 8.57$ , df=4, p>0.05; \*\* $\chi^2 = 10.63$ , df=3, p<0.05; \*\*\* $\chi^2 = 0.00$ , p=0.97;

The study was conducted with 600 HIV/AIDS patients, out of them 410 (68.3%) were male and 190 (31.7%) were female in both the groups. Male: Female ratio was 2.1:1. Total 466 (77.66%) patients were in sexually and economically reproductive age group of 25-49 years in case group. Among them 298 (64%) were male and 168 (36%) were female. In the study, 520 (86.7%) patients were married, in which 347 (66.7%) were male and 173 (33.3%) were female. Majority of patients were urban dwellers around 430 (71.7%) and 170 (28.3%) patients were rural dwellers. In which, 417 (69.5%) patients were migrant (Other than Ahmedabad or from other state or from other country) and 183 (30.5 %) patients were local dwellers. (Table 1)

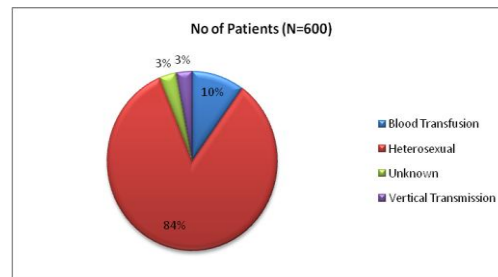


Figure 1: Mode of Transmission in PLHA patients

Figure 1 showing mode of transmission wise distribution of HIV positive patients in the study. It shows that 503 (84%) of patients had HIV infection through heterosexual route followed by 60 (10%) through blood borne transfusion, 18 (3%) vertical and in 19 (3%) patient didn't know or I couldn't elicit it.

**Table 2: Mode of Transmission wise Distribution in the study**

Mode of transmission	Bt (%)	Hs (%)	Vertical (%)	Unknown (%)
Age (n=600)				
0-5	0 (0)	0 (0)	1 (100)	0 (0)
6-14	0 (0)	0 (0)	15 (99)	1 (1)
15-24	4 (13.3)	23 (76.7)	2 (6.7)	1 (3.3)
25-49	44 (9.4)	409 (87.8)	0 (0)	13 (2.8)
>50	12 (13.8)	71 (81.6)	0 (0)	4 (4.6)
Sex (n=600)				
Female	27 (14.2)	154 (81)	6 (3.2)	3 (1.6)
Male	33 (8)	349 (85.1)	12 (2.9)	16 (3.9)
Marital status (n=600)				
Divorced	0 (0)	7 (100)	0 (0)	0 (0)
Married	54 (10.4)	449 (86.3)	0 (0)	17 (32.7)
Remarried	0 (0)	9 (100)	0 (0)	0 (0)
Not applicable	6 (9.4)	38 (59.4)	18 (28.1)	2 (3.1)
Locality (n=600)				
Rural	17 (10)	144 (84.7)	6 (3.5)	3 (1.8)
Urban	43 (10)	359 (83.5)	12 (2.8)	16 (3.7)

Note: Figure in the parenthesis shows percentage

Table 2 shows the different mode of transmission wise distribution of HIV/AIDS. As a fact, heterosexual route was high and foremost in all age groups, both sexes and in all urban and rural locality in which total 503 (84%) patients. 2<sup>nd</sup> most important route of HIV/AIDS transmission was through blood transfusion (BT) contains 60 (10%)

patients. Some patients had a history of 10 years or more of taking BT. Among transfused patients, many patients didn't know exact time of BT or didn't remember route of transmission. Parent to child transfusion (PTCT) was found in around 18 (3%) patients mainly in 6-14 years age group.

**Table 3: Presenting Symptoms in HIV positive patients in the study<sup>@</sup>**

Symptoms	Male (%)	Female (%)	Chi-square ( $\chi^2$ )
Fever (n=600)			
Present	214 (52.2)	82 (43.2)	$\chi^2 = 4.24, df=1, p<0.05$
Absent	196 (47.8)	108 (56.8)	
Weight loss (n=600)			
Present	243 (59.3)	81 (42.6)	$\chi^2 = 14.47, df=1, p<0.05$
Absent	167 (40.7)	109 (57.4)	
Cough (n=600)			
Present	94 (22.9)	32 (16.8)	$\chi^2 = 2.9, df=1, p>0.05$
Absent	316 (77.1)	158 (83.2)	
Diarrhoea (n=600)			
Present	61 (14.9)	18 (9.5)	$\chi^2 = 3.32, df=1, p>0.05$
Absent	349 (85.1)	172 (90.5)	
Anorexia (n=600)			
Present	159 (38.8)	64 (33.7)	$\chi^2 = 1.44, df=1, p>0.05$
Absent	251 (61.2)	126 (66.3)	
Gastro-intestinal upset (n=600)			
Present	39 (9.5)	18 (9.5)	$\chi^2 = 0.00, df=1, p>0.05$
Absent	371 (90.5)	172 (90.5)	
Oral ulcers (n=600)			
Present	32 (7.8)	16 (8.4)	$\chi^2 = 0.07, df=1, p>0.05$
Absent	378 (92.2)	174 (91.6)	
Herpes (n=600)			
Present	9 (2.2)	8 (4.2)	$\chi^2 = 1.92, df=1, p>0.05$
Absent	401 (97.8)	182 (95.8)	
Itching (n=600)			
Present	19 (4.6)	11 (5.8)	$\chi^2 = 0.36, df=1, p>0.05$
Absent	391 (95.4)	179 (94.2)	

Note: Figure in the parenthesis shows percentage, <sup>@</sup>Multiple symptoms present, P- values < 0.05 are significant

Table 3 depicts the presenting symptoms or co-morbidities associated with HIV/AIDS in the study. It was found that all the co-morbidities which are found in HIV/AIDS were also present in this study. Fever was present in 296 (49.3%) patients, weight loss was present in 324 (54%) patients, cough was present in 126 (21%) patients, diarrhea was present in 79 (13.2%) patients, oral ulcer was present in 48 (8%) patients, herpes was present in 17 (2.8%) patients and 168 (28%) patients were asymptomatic. Fever and Weight loss are showing statistically significant values ( $p<0.05$ ). Multiple responses were present in the study.

**Table 4: HIV Status of Spouse in PLHA patients**

HIV status of spouse (n=600)	Male (%)	Female (%)
+ve	99 (48.5)	105 (51.5)
-ve	89 (80)	22 (20)
Not evaluated	164 (76)	52 (24)
Not applicable	58 (84)	11 (16)

Note: Figure in the parenthesis shows percentage,  $\chi^2 = 57.81, df=3, p<0.05$

Table 4 shows the HIV status of spouse in the study. Total 34% spouse were HIV positive either male or female by any of above said route. 18.5% spouse were HIV negative. Out of these, 47.5% spouse was not evaluated or data was not available for them. HIV status between male and female was found statistically significant ( $p<0.05$ ).

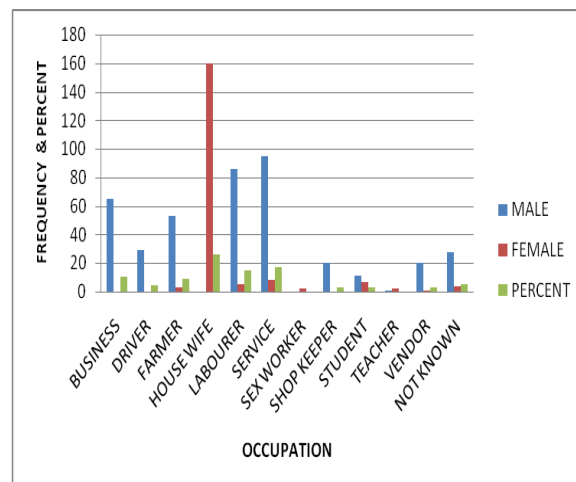


Figure 2: Occupation-wise Distribution of study (PLHA) population.

Figure 2 shows different occupations of patients (PLHA) in the study. In this study, maximum patients were female housewives 160 (26.7%) because they contracted disease from their infected husbands knowingly or unknowingly. Husbands mostly know their status but due to major social stigma, they hide their disease status and infect their innocent wives. Followed by different servicemen 103 (17.3%), laborer 91 (15.2%), businessmen 65 (10.8%), farmers 56 (9.3%), drivers 29 (4.8%) etc. 18 (3%) student were also infected in the study which emphasize on strong awareness about prevention of disease in adolescent age group.

**Table 5: Past History of Tuberculosis in PLHA patients in the study**

Past history of TB (n=600)	Male (%)	Female (%)
Present	114 (75.5)	37 (24.5)
Absent	296 (66)	153 (34)

Note: Figure in the parenthesis shows percentage,  $\chi^2 = 4.78, df=1, p<0.05$

Table 5 depicts past history of Tuberculosis in HIV positive patients in the study. Out of 600 patients, 114 (19%) male and 37 (6%) female (total 25%) had a past history of Tuberculosis. The difference between male and female was found statistically significant ( $p < 0.05$ ).

**Table 6: HIV ELISA testing results of HIV positive patients in the study**

HIV ELISA (N=597)	MALE (%)	FEMALE (%)
POSITIVE 1	405 (68.2)	189 (31.8)
POSITIVE 2	2 (66.7)	1 (33.3)

Note: Figure in the parenthesis shows percentage,  $\chi^2 = 0.32$ ,  $df=1$ ,  $p > 0.05$

HIV ELISA test was done to detect the positivity. Data was not available for 3 patients. 594 (99%) patients were positive for HIV 1 and 3 (1%) was positive for HIV 2 ELISA test. ELISA is the diagnostic test for HIV positivity. The Difference was found statistically significant between male and female ( $p < 0.05$ ) (Table 6).

**Table 7: CD4 Count of HIV infected patients in the study.**

CD4 (N=561*)	MALE (%)	FEMALE (%)
<50	44(77.2)	13 (22.8)
51-200	157(74)	55 (26)
201-350	89 (64.5)	49 (35.5)
351-500	57 (67)	28 (23)
>501	35 (51)	34 (49)

Note: Figure in the parenthesis shows percentage  $\chi^2 = 16.09$ ,  $df=4$ ,  $p < 0.05$ , \*CD4 count not done for 39 patients

Table 7 depicts CD4 count of patients in the study. Total 407 (72%) patients had CD4 count < 350 at the last visit. CD4 count was not done for 39 (6.5%) patients or data was not available for the same. Difference between male and female was statistically significant ( $p < 0.05$ ) for CD4 count.

## DISCUSSION

Mean age in our study is 37 years which is 38.7 years in a study of Sharma [6] and 37.22 years in a study at Hamirpur. [9] According to our study, 82.5% patients are

from the age group of 15-49 years (the most sexually active age group) which is slightly lower than the national figure (88.55%) [10] and other studies [8, 11] in which they are 92.4% and 88.7% respectively and also in a study of Lal S. [12] Epidemiological analysis of reported AIDS cases reveal that disease is common in males than females, ratio being 3:1. [12] In our study, it is 2.1:1 which is similar to study of Kumar A et al, [11] B Unnikrishnan et al [13] and other studies. [7, 14, 15] This may be due to more women coming out for treatment, decreased social stigma and more matured epidemic in Gujarat and surrounding states. In our study, married male and female are respectively 84.6% and 90% which are similar to study of Kumar A [11] et al. In our study, rural males/females are 28.3%/28.4% respectively and urban males/females are 71.7%/66.8% respectively. Our data are different from the study of Rawat Vinita et al [16] and BMJ [17] recent studies, because in present study, our clinic is designed as tertiary care private clinic with catchment of population having higher affordability as well as during study period larger number of rural patients directed towards free ART centers in government sector. In our study, patient doing different occupations are Business 10.8%, Service 17.2%, Farmer 13.1%, Driver 9.7%, Housewife 26.7%, Student 3% which are similar with previous studies. [13, 18, 16, 19] Housewife percentage is more because they become HIV positive through Heterosexual route by their infected husbands. So in Indian culture awareness of female for HIV/AIDS should be increased to accept the use of condom as a main preventive measure. In our study, around 84% patients acquired infection through Heterosexual route which co similar with other studies. [6, 16] 24.1% male spouse and 55.3% female spouse are HIV positive in our study. Similar observations are found in a study of Shaikh Mohsin et al. [19] Because

of strong HIV-TB association, 25.2% patients in our study have the past history of Tuberculosis which is different from study in Surat [20] in which it is 7.8 and South Kannada [11] in which it is 11.6%. CD4 count of patients <350/mm<sup>3</sup> in our study are 72.54% which shows similar observation of 72% with study done at Surat. [20] In our study, different presenting symptoms are fever 49.3%; cough 21%, oral lesions 8% which are somewhat different in a study of Pushpa Devi et al [21] and Prabhat Jha. [17]

## CONCLUSION

HIV/AIDS is more social problem than medical now a day. In our study, higher HIV infection in married males, housewives, higher migration is need to be assessed if prevention and control are directed to the right persons. Improving sexual communication and negotiation to married couples is also important in prevention aspect. Heterosexual route is still so high. So people can be aware for need of early diagnosis of primary HIV infection to prevent transmission to others especially women who are innocent and mostly acquired infection by this route through their infected husbands. HIV testing should be integrated with screening for other infections like Sexually Transmitted Diseases (STDs) and Tuberculosis (TB). Because increase chances of OIs lead to increase burden on health services. Greater recognition of the burden of undiagnosed HIV/AIDS is needed in all age group especially in adolescent age group which is more in our study. Thus, the study emphasizes on routine or high risk group testing of HIV/AIDS infection and early detection which might improve long term prognosis and reduce transmission. There is restless need to have greater co-operation and collaboration between public and private agencies to control epidemic. Besides of new programme, attention should

also be given to better implementation of current strategies to increase awareness and safe sexual behavior of population. If health professionals do hard work, they will provide a great fight against HIV/AIDS. Lastly, whole world should be lighted with the spark of latest World AIDS Day theme "Getting to Zero" [22]

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