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Study of Socio Demographic Profile of HIV Positive Patients Seeking Treatment in Tertiary Care Hospital: A Cross Sectional Study

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ABSTRACT

Objectives: To study the socio demographic and clinical profile of HIV positive patients seeking treatment in tertiary care hospital.

Methods: The present hospital based cross-sectional study was carried out in the ART clinic of Tertiary care Hospital in Central India from February 2018 to October 2018. Total 324 patients above 15 years of age, who were newly diagnosed as HIV positive were included in the study Subjects were interviewed for socio demographic data. Clinical examination was done. Weight and Height were recorded. WHO publication titled "WHO case definitions of HIV, for surveillance and revised clinical staging and immunological classification of HIV-related disease, in adults and children" was used for staging. For confirmation of diagnosis experts opinion from respective specialty was sought. CD 4 count, Sputum for CBNAAT, Sputum for AFB and other relevant investigations eg. USG were obtained from the records.

Results: Most of the study subjects were males in 35 – 49 years age group (52.16%) and 69.75% were hindu. Maximum were currently married (62.35%), educated from 6 th to 10 th standard (50.92%), housewives (20.68%) and from class IV socioeconomic status (44.44%). 25.31% of subjects were migrant. Smokeless tobacco use was common habit, overcrowding was present in 43.21% and commonest route of transmission was heterosexual (94.75%).

Conclusion: Males from economically productive age group of lower socioeconomic status living in overcrowding, mostly tobacco user and heterosexuals were found. There is a need of health education to halt the transmission of disease.

Key words: HIV, sociodemographic, ART, heterosexual

INTRODUCTION

AIDS has evolved from a mysterious illness to a global pandemic which has infected tens of millions people. Promising development have been seen in recent years in global efforts to address the AIDS epidemic, including increased access to effective treatment and prevention programs. However the number of people living with HIV continues to grow,as does the number of deaths due to AIDS . Of particular concern are trends affecting eastern Europe and Central Asia, where the number of people acquiring HIV infection and dying from HIV related causes continue to Increase1.

Globally, number of people living with HIV were 36.9 million in 2017. India has the third largest HIV epidemic in the World. In 2017 ,HIV prevalence among adults (aged 15 – 49 years) was estimated to be 0.2% .Between 2010 and 2017 new infections declined by 27 % and AIDS related deaths more than halved , falling by 56 % .There were 88,000 new HIV infections and 69000 AIDS related deaths in 2017.In 2017 , 79% of the people living with HIV were aware of their status, of whom 56% were on

antiretroviral treatment .1The primary goal of National Aids control program-IV (2012-2017) is to halt and reverse the epidemic in India over the next 5 years by integrating programs for prevention ,care , support and treatment .1

Joint United Nations Program on HIV and AIDS (UNAIDS) report of 2017 reveals that Global scale up of antiretroviral therapy has been the primary contributor to a 48% decline in deaths from AIDS related causes ,from a peak of 1.9 million in 2005 to 1.0 million in 2016 .2

The HIV prevalence is highly concentrated among key populations who engage in unprotected sexual contacts with multiple partners or who are injecting drug users.2

Although there was a 66% decline in new infections from 2000 to 2015, this trend has largely remained in plateau between 2010 and 2015. There has also been a fall in estimated number of AIDS related deaths by 54% largely due to increasing coverage of ART and this together with reductions in new HIV infections has contributed to stabilizing the number of people living with HIV.2

In 2013, WHO issued revised treatment guidelines recommending earlier initiation of antiretroviral therapy, at a CD4 count of </equal to 500 cells / mm^3 .1

The Antiretroviral Therapy (ART) was introduced in 2004 in the later phase of NACP II. Reduction in new infections by 50% was a major achievement of NACP-III. In the current phase of NACP-IV, the focus is on consolidating the gains achieved so far, dealing with emerging vulnerabilities, and balancing between prevention and growing treatment needs. NACP-IV aims at improving integration and mainstreaming HIV care in the general health system.NTG

Research worldwide has linked migration to increase in HIV transmission. There are an estimated 7.2 million migrant workers in India, of whom 0.2 % living with HIV .1

Despite being preventable and curable TB is the leading cause of HIV associated mortality .ART must be offered to all patients with HIV and TB and HIV and MDR –TB irrespective of CD4 count.1The Government of India launched the free Antiretroviral Therapy (ART) initiative on the first of April 2004 .India's ART program is the second largest globally and has been acclaimed as one of the best public health programs providing HIV care services.

Hence, this study is planned to assess the socio-demographic profile in HIV positive patients who attend the Anti-Retroviral Treatment (ART) clinic at tertiary care hospital in central India.

MATERIALS AND METHODS

The present hospital based cross-sectional study was carried out in the ART clinic of Tertiary care Hospital in Central India. Permission from Professor and Head, Dept. of Medicine was taken. Approval from the Institutional Ethics Committee, was sought before commencing the study.

The patients who are newly diagnosed as HIV positive are referred to the ART center where they are registered as pre ART patients. WHO staging is done and CD4 count is estimated. Based on WHO stage and the CD4 count, the patient is assessed for the eligibility for ART. Those who are eligible for ART are given an ART registration number and started on ART. Only the ART naïve, pre ART patients attending the ART Centre were included in the study.

Those who had been started on Anti-Retroviral Therapy, below 15 years of age and did not give consent for the study were excluded from the study.

Before starting the interview, participants were informed about the nature of the study. Confidentiality was assured and maintained. Written informed consent was taken before starting the interview

Daily 2 to 4 new subjects were registered as pre ART patients, at the ART center. For interview and examination of each patient 30 to 45 minutes were required. Subjects were interviewed for socio demographic data. Thorough clinical examination was done. WHO publication titled "WHO case definitions of HIV, for surveillance and revised clinical staging and immunological classification of HIV-related disease, in adults and children" 2007 [4] in which "Presumptive and definitive criteria for recognizing HIV related clinical events in individuals with confirmed HIV infection" are given by WHO, (WHO Clinical staging system) was used for staging of the illness .For confirmation of diagnosis experts opinion from respective specialty was sought. Weight and Height were recorded by standard anthropometric methods .CD 4 count, Sputum for CBNAAT, Sputum for AFB and other relevant investigations eg. USG were obtained from the records.

Pilot study was done on 100 study subjects to test the proforma in study subjects for calculation of the sample size.

Duration of data collection was from February 2018 to October 2018.

Sample size calculation: Sample size was calculated based on the Prevalence of Tuberculosis (p=30%) in the pilot study with absolute precision of 5% and 95% confidence level.

Sample size n = $(1.96)^2pq/L^2$, where p=30% i.e. 0.30, q=70% i.e. 0.70 and L=5% i.e. 0.05. The calculated sample size was n= 322.69.

All the new patients attending the ART centre were included in the study till the required sample size was achieved.

Statistical Analysis -The data was entered and analyzed using Epi Info version 7.1.4.0(2014). Continuous variables were summarized in terms of means and standard deviations. Categorical variables were summarized in terms of frequencies and percentages. Chi square test was used for finding out the association between the various qualitative variables with p value less than 0.05 was considered to be statistically significant.

RESULTS

During the data collection period, a total of 397 patients were enrolled in the ART Centre as pre ART patients. The subjects who met the exclusion criteria were 64 (On ART-44 subjects, Aged less than fifteen years- 19 subjects and 1 who did not give consent). In 9 subjects, the information was incomplete so they were not included. A total of 324 subjects were included in the study.

Table 1 shows the distribution of study subjects according to age and gender. Out of 324 subjects 192 were males and 132 were females.

Maximum number of subjects 69.75% (226) belonged to Hindu religion, followed by 23.15% buddist and 6.17% muslims. Only 3 subjects belonged to other religions i.e. 2 Sikhs and 1 Christian.

Table 2 shows the distribution of study subjects according to their marital status. Maximum number of subjects 62.35% (202) were currently married. We found that significantly more women were widowed as compared to men (Chi square =26.11, df=1 p value <0.001)

Table 3 shows the distribution of study subjects according to their Level of Education and maximum number of subjects i.e. 50.92% (165) were in the educational group of 6^{th} to 10^{th} standard. The proportion of males who were educated, were significantly more than the females. (Chi square=14.91, df =1, p value <0.001).

Table 4 shows the distribution of study subjects according to their occupation. Maximum numbers of study subjects i.e. 20.68% (67) were Housewives, followed by 18.52% (60) who belonged to the category of skilled or semiskilled workers.

According to Modified B G Prasad's classification (CPI=309 March 2019)[5], maximum number of

Table 1 Distribution of study subjects according to age and gender

Age group (yrs)†	Males (%)	Females(%)	Total(%)
15-24	11 (5.73)	13 (9.85)	24 (7.41)
25-34	41 (21.35)	41 (31.06)	82 (25.31)
35-49	105 (54.69)	64 (48.48)	169 (52.16)
50+	35 (18.23)	14 (10.61)	49 (15.12)
Total	192 (100)	132 (100)	324 (100)

†Age groups as per, Operational guidelines for ICTC, NACO.

Table 2 Distribution of study subjects according to marital status

Marital Status †	Males (%)	Females(%)	Total(%)
Never married	28 (14.58)	7 (5.3)	35 (10.8)
Married	133 (69.27)	69 (52.27)	202 (62.35)
Divorced	4 (2.08)	3 (2.27)	7 (2.16)
Separated	7 (3.65)	9 (6.82)	16 (4.94)
Widowed	18 (9.38)	42 (31.82)	60 (18.52)
Live in relation	2 (1.04)	2 (1.52)	4 (1.23)
Total	192 (100)	132 (100)	324 (100)

†Groups as per Census of India except 'Live in relationship'

Table 3 Distribution of study subjects according to level of education

Education	Males (%)	Females(%)	Total(%)
Illiterate	12 (6.25)	27 (20.45)	39 (12.04)
Till 5th standard	43 (22.4)	16 (12.12)	59 (18.21)
6^{th} to 10^{th} standard	108 (56.25)	57 (43.18)	165 (50.92)
11th to graduation	28 (14.58)	30 (22.73)	58 (17.9)
Post-graduation	1 (0.52)	2 (1.52)	3 (0.93)
Total	192 (100)	132 (100)	324 (100)

Table 4: Distribution of study subjects according to occupation (n=324)

Occupation	Subjects (%)
Homemaker/ Housewife	67 (20.68)
Skilled Semiskilled worker	60 (18.52)
Laborer Agricultural & Non Agricultural	54 (16.67)
Service Govt/ Private	52 (16.05)
Petty business/Small shop	26 (8.02)
Unemployed	17 (5.25)
Truck driver	13 (4.01)
Local Transport worker	12 (3.7)
Domestic servant	10 (3.09)
Student	6 (1.85)
Others (Retired 4, Hotel staff 2, CSW 1)	7 (2.16)

Table 5 Distribution of study subjects according to Route of transmission of HIV

Transmission*	Males(%)	Females(%)	Total(%)
Heterosexual	179 (93.23)	128 (96.96)	307 (94.75)
Homo/Bisexual	8 (4.17)	0 (0)	8 (2.46)
Not specified/ Unknown	1 (0.52)	2 (1.52)	3 (0.93)
Parent to child	3 (1.56)	0 (0)	3 (0.93)
Through blood and blood products	1 (0.52)	2 (1.52)	3 (0.93)
Total	192 (100)	132 (100)	324 (100)

* As per Operational Guidelines for Integrated Counseling and Testing Centers, NACO 2007[18].

study subjects 44.44% (144) belonged to Class IV, followed by 27.16% (88) who belonged to Class III, followed by 16.05% (52) who belonged to Class V.

82 i.e.25.31% were migrants. Majority of the study subjects i.e. 64.81% (210) belonged to Nuclear family, while 35.19% (114) belonged to Joint family. Oout of 324 subjects, 'Smokeless tobacco use' was the most common habit, 54.93% (178/324). We found that overcrowding was present in 43.21% (140) study subjects.

Table 5 shows the distribution of the study subjects according to the Route of Transmission of HIV and in majority of the subjects the route of transmission was Heterosexual i.e. 94.75% (307).

DISCUSSION

In the present study, out of 324 subjects 59.26% were males and 40.74% were females. It was found that the proportion of the males were more above the age of 35 years, whereas the females were more below the age of 35 years, and this difference was statistically significant. This observation could mean, that due to the functioning routine sentinel surveillance of ANCs, the females are being diagnosed at an earlier age than males. Similar results found in studies carried out by **Balasundaram A et al**[6] ·**Jha A K et al** [7]observed that 66.3% were males and 33.7% were females with the predominant age group being 26-35 years which is the sexually active age group. **Deshpande JD et al** [8]also found that the male patients, 53.4% outnumbered the female patients 46.6%. Majority of the subjects, 80.38% belonged to the age group of 15 to 45 years and **Joge US et al** [9]also found that the male patient's i.e.68.04% outnumbered the female patients (31.96%), in the age group of 20-39 years. The findings of the above studies are similar to our study.

Albuquerque MF et al [10] found that 67.5 % patients belonged to Hindu religion, 27.9% belonged to Christian religion and 4.6 % belonged to Muslim/Parsi religion. **Saha et al** [11] in their study in West Bengal, India found that majority of the study subjects 88.91% belonged to Hindu religion while 11.09% belonged to Muslim religion. **Mehta et al** [12] in their study in Vadodara, found that majority of study subjects 92.6 % belonged to Hindu religion, 6.8% belonged to Muslim religion and 0.6% belonged to Christian religion. **Joge US et al** [8]in their study in Maratha Wada, found that majority of patients 90.01% belonged to Hindu religion followed by Buddha 5.87% and Muslim 4.12%. The differences in the above studies indicate that the religion of the subjects varies, in different parts of the country.

Also in this study it was found that more females were widowed as compared to males. The reason may be that females could be getting infection from their husbands and Husbands should have been infected much before they transmit the infection to their wives. So the disease is in advanced stage in the husbands and they die early leaving their wives widowed. **Balasundaram A et al** [6] and **Jha A K et al** [7]in their study found that 85% and 73.4% were married respectively. **Deshpande JD et al** [8]found 71.38% were married, 16.72% were widowed, while 11.89 % were unmarried. While **Joge US et al** [9]in their study found that 70.53% were married, 20.97% were widowed, 2.5% were Divorced, 2% were Separated while 4% were unmarried. This indicates that the predominant group is the 'Married' group across all regions.

The maximum number of subjects i.e. 50.92% were in the group of 6th to 10th standard, followed by 18.21%, least number of subjects, 0.93% were Post Graduates. **Balasundaram A et al** [6]in their study found that almost half of the participants had received primary education, 47% received up to higher secondary education and 6.2% were uneducated. **Jha A K et al** [7]in their study found that 27.7% were Illiterate, 15.9% were educated up to Primary School, 14.3% were educated up to Middle School, 13.9% were educated up to High School, 18.3% were educated up to Intermediate level. Graduates were 9 % while Post Graduates were 0.8 %. **Deshpande JD et al** [8]in their study found that 26.05% were Illiterate, 20.58 % were educated up to Primary School Level, 46.30 %(144) were educated up to Secondary School Level, while 7.07 % had educational Level of Higher Secondary School and above. **Joge US et al** [9]in their study found that maximum number of subjects 40.58 % were educated up to Secondary School Level. The number of subjects who are highly educated is small in all regions.

Balasundaram A et al [6]in their study in Puducherry, found that, Agriculture workers constituted 76.92% of the subjects while 6.16% were housewife; 16.15% were semi-skilled workers, including drivers, construction workers, maids, shopkeepers, and bidi-leaf rollers, while 0.77% was a skilled worker. **Jha A K et al** [7] in their study in North India found that 34.1% were unemployed, 26.2% were Unskilled workers, 6.7% were semi-skilled workers, 17.9% were Skilled workers, 11.9% belonged to Clerical or Shop owner or Farm owner category 3.2% were Semiprofessionals. None belonged to the Professional category. **Deshpande JD et al** [8] in their study in Maharashtra found that laborers/farmer constituted 55%, housewife 14.2% and drivers 4.8%. Laborers included the agricultural as well as nonagricultural laborers. Similarly **Joge US et al** [9] in Marathawada, found nearly simi-

lar results. These findings indicate that majority of the subjects affected by HIV are either bread earners for the family or as in case of housewives are responsible for the normal functioning of the family unit.

Maximum number of study subjects 44.44% belonged to Class IV. **Balasundaram A et al** [6] in their study in Puducherry, found that, 34% belonged to Class 3 , followed by 33% and23% in Class 2 and 4 respectively; 2% belonged to Class 1, and 8% belonged to Class 5.**Jha A K et al** [7]in their study in in North India, found that majority of patients belonged to Upper Lower social class ,69.8%.**Deshpande JD et al** [8]observed maximum number of study subjects 46.62 % belonged to Class III, followed by 38.92 % who belonged to Class II. **Joge US et al** [9]found that the majority of study subjects, 35.58% were from Class IV followed by 30.59% subjects who belonged to Class V socioeconomic status .The findings of this study are similar to other studies with regard to the fact that only a few of the subjects were from higher socioeconomic classes while majority were from lower socioeconomic classes.In the present study it was found that out of 324 subjects 25.31% were migrants. For migrants we used the definition given by NACO 2010. **Gupta K et al** [13]in their study found that 27% of males were migrants and **Dayama S et al** [14] found that out of 250 study subjects, 58.4% were migrants.

In the present study it was found that 'Smokeless tobacco use' was the most common habit, 54.93%, followed by 'Alcohol use', which was present in 46.30% subjects. This was followed by 'Tobacco Smoking' which was present in 20.06% subjects. **Dayama S et al** [14] found that tobacco chewing habit was present in 24.4%, smoking was present in 7.6% and alcohol use was present in 6.0% .While **Albuquerque MF et al** [10] in Goa found that out of 741 study subjects the use of alcohol by study subjects was 12.82% and tobacco-smoking was 5.12 %. **Balasundaram A et al** [6]in their study in Puducherry, found that, among the subjects, the current use of alcohol was 49.23%, tobacco-smoking was 38.46%, and tobacco chewing was 3.84%. **Chakravarty J et al** [15] in their study in Varanasi found that the current use of alcohol was 18.9% while tobacco-smoking was 20.1 % .However, the proportion of 'Alcohol use' and 'Tobacco smoking' by study subjects is high in our study. This calls for specific interventions to reduce the habits to prevent further morbidities in study subjects.

In the present study it was found that overcrowding was present in 43.21% study subjects. However the percentage of overcrowding was more in the study by **Hiregoudar V et al** [16] in South india, 54.85%.

In the present study it was found that in majority of the subjects the route of transmission was Heterosexual 94.75%. **Hiregoudar V et al** [16] in their study in South India found that for the majority of the study subjects, the probable mode of transmission of HIV was by the heterosexual route (89.1%) followed by unsafe injections (5.2%). **Chakravarty J et al** [15] in their study in Varanasi, found that out of total 1689 study subjects, the route of transmission in the majority was heterosexual 69.1% (1167). **Joge US et al** [9]found that the route of transmission in the majority of subjects was heterosexual 756 (94.39%) patients. Of the remaining2.99% patients gave a history of blood transfusion while in 2.62% patients the route of transmission was unknown. **Kumar S et al** [16] in their study in Chandigarh, found that the predominant route of transmission was heterosexual in 81.7% patients followed by IV/IM injections seen in 4.1% patients, which included IV drug abusers, unsafe injections, occupational exposure/surgical mishaps, etc. The findings of the above studies are similar to our study in that the major route of transmission was heterosexual.

CONCLUSION

Our findings here observed, majority of study subjects were Males and maximum were hindu. Maximum number of study subjects were married and educated upto secondary school. They belonged to age group where males are bread earners and females are responsible for normal functioning of family. Majority were from lower socioeconomic status living in overcrowding and about one fourth were migrants. Alcohol addiction was more common than tobacco. Most common route of transmission of HIV was heterosexuals. There is a need of health education to halt the transmission of disease.

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