



**ORIGINAL RESEARCH PAPER**

**Community Medicine**

**SOCIO-DEMOGRAPHIC PROFILE OF AIDS CASES 'ON ART'-A STUDY IN ART CENTRE OF A TERTIARY CARE HOSPITAL OF ODISHA**

**KEY WORDS:** ART, AIDS, SES, Occupation & Education.

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**ABSTRACT**

AIDS has assumed a dangerous socio-economic problem in India. Since the beginning of this dreaded disease, around 75 million people have already been infected with it & 36 million have died of AIDS related illness. India being a developing country faces a huge challenge in managing this pandemic. The present study was undertaken at ART centre of S.C.B. Medical College & Hospital, Cuttack during the period 01-09-2014 to 31-08-2015 to study the socio-demographic profile of AIDS patients coming for ART therapy during the above period.

**Objective:-** To study the socio-demographic profile of AIDS cases 'on ART' registered at ART centre.

**Material & Methodology:-**

**Study design:-** Observational study.

**Study period:-** 01-09-2014 to 31-08-2015. (Data collection period 01.01.2015 to 30.06.2015)

**Place of study:-** ART centre, S.C.B. Medical College & Hospital, Cuttack.

All the new 'on ART' cases registered during the above period at ART centre, S.C.B. Medical College & Hospital, Cuttack were included in this study.

During this period of six months a total of 380 new cases attended the ART centre, of which 256 were put under ART. Relevant data as per study objective were collected from 256 ART attendees with the help of a pre-designed & pre tested schedule.

**Results:-**

- Maximum cases were in the age group 26-45 years i.e 180(70%).
- The mean age of attendees was 33.49 years.
- Out of 256 study subjects 141 (55%) were male, 111 (43.4%) female & rest 4 (1.6%) were trans genders.
- Caste wise distribution of study subjects revealed that 105(41%) belong to general caste followed by OBC(38.3%), SC(17.2%) & ST(3.5%).
- Exploring the marital status it was observed that maximum i.e 71.9% widow & 0.4% was in live-in relationship.
- Maximum belong to nuclear family, i.e, 96%.
- Majority of study subjects were unemployed, i.e, 120(52.9%).
- 56.3% of study subjects belonged to upper lower SES, followed by 20.3% to lower SES.
- 43.8% of study subjects has educational level of secondary school, followed by 38.6% primary school & 6.8% were illiterate.
- Maximum of cases came from rural area i.e 83%.

**Discussion:-** Maximum ART attendees were in the age group of 26-45 years. This being the productive age group, might have a negative impact on their income & other resource generating activities. The number of male cases were more as compared to the female cases, the poor health seeking practices of females may be a factor for above representation. The extent of unemployment among the attendees i.e 52.9% may be a disturbing factor. The occupation of migrant labourers & driver is one of the most important predisposing factor for HIV transmission.

**INTRODUCTION:-**

HIV pandemic is gradually stabilizing in majority of low & middle income countries like Asian countries. Since the beginning of this pandemic around 75 million people have already been infected with HIV & 36 million have died of AIDS related illness. There were an estimated 35.3 million people living with HIV in 2012. The annual number of new infections have shown a declining trend from 3 million in 2001 to 2.3 million in 2012. Infection among the women has shown a stable picture for last several years. New infections in children have declined by 52% since 2001. AIDS related deaths have also fallen by 30% since the peak in the year 2005<sup>1</sup>. Extensive awareness, improved care seeking practices, minimization of risk factors & timely institution of antiretroviral therapy contributes synergistically towards this declining trend.

India is the country with second largest population of HIV infected individuals. The reported AIDS cases among the age group 15 to 24 years is 35% of all cases indicating a vulnerability of younger population to the epidemic. India has demonstrated an overall reduction of 57% in estimated annual new HIV infections among adult population. The decline of HIV infection among female sex workers is from 5.06% in 2007 to 2.67% in 2011. Injecting drug users is identified to be the major vulnerable group fueling the

epidemic.<sup>13</sup> In addition long distance truck drivers also show high level of vulnerability. However wide access to ART has lead to 29% reduction in estimated annual AIDS related deaths between 2007 & 2011.<sup>2</sup>

In the present study an attempt has been made to spell out the socio-demographic profile of attendees at the ART clinic with the following objectives:-

**Objectives:**

- To study the socio-demographic profile of AIDS cases on ART registered at ART centre.
- To find out any association between important socio-demographic factors.

**Methodology:-**

The ART centre was set up in S.C.B. Medical College & Hospital, Cuttack on 2nd April 2008. This centre is utilized to initiate treatment, carryout follow-up to manage the cases & complications of AIDS patients. This centre caters to a population of 10 million coming from Cuttack & its adjacent districts. The ART centre is equipped with an OPD, dispensing room, counselling room & one testing room.

This observational study was carried out with the help of a

predesigned & pretested schedule as per NACO guidelines.

**Selection of study subjects:-**

All the new AIDS cases on ART registered at this ART centre during the period from 01-01-2015 to 30-06-2015 were considered from the present study.

**Exclusion criteria:-**

All the HIV positive cases having CD4 cells count more than 350 cells/cubic mm. (except clinical staging 3 & 4) and all pre ART cases were excluded from the study.

Out of 380 new cases registered at ART centre during 6 month period, 256 were put under ART who were included in the present study after obtaining their informed written consent.

**DATA Collection:-**

With the help of the pre designed & pre tested schedule, necessary information were collected from the study subjects keeping in view the study objectives.

**DATA Analysis:-**

After cleaning of the collected data, the analysis was done with the help of SPSS version 21 & Microsoft excel 2007. The results of the analysis were interpreted in the perspective of study objectives.

**Observation:-**

The pertinent findings of the present study were tabulated, analysed & presented in the following paragraphs.

**Table No.1 Age & Sex wise distribution of cases(n=256)**

Sl.No	Age in years	Male	Female	TG	Total	Percentage
1.	2 - 5	6	4	0	10	3.9
2.	6- 10	3	4	0	7	2.7
3.	11 -19	5	5	0	10	3.9
4.	20 – 35	52	64	2	118	46
5.	36 – 60	74	34	02	110	42.9
6.	>60	1	0	0	1	0.39
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100%</b>
		1(55 %)	(43.4%)	(1.6%)		

Among the males maximum i.e 52.5% were in the age group of 36-60 years where as among females maximum were in the age group 20-35 years. Overall age preponderance was between 20-35 years. The percentage of paediatric AIDS cases on ART was 6.6% where as the same among the adolescents was 4%. Thus children & adolescent contributes more than 10% of the total cases.

**Table No.2 Distribution of cases according to the place of residence(n=256)**

Sl.No	Place of residence	Male	Female	TG	Total	Percentage
1.	Rural	120	91	01	212	82.8
2.	Urban	21	20	03	44	17.1
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100</b>

The above table depicts that 212(82.8%) study subjects were from rural area as compared to 44(17.1%) from urban area.

**Table No.3 Type of family of cases:-(n=256)**

Sl.No	Type of family	Male	Female	TG	Total	Percentage
1.	Nuclear	134	108	04	246	96
2.	Joint	07	03	0	10	04
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100</b>

Coming to the type of family maximum i.e 246(96%) belong to nuclear family & rest 10(4%) to joint family.

**Table No.4 Caste wise distribution of cases(n=256)**

Sl.No	Caste	Male	Female	TG	Total	Percentage
1.	General	61	43	01	105	41

2.	OBC	50	46	02	98	38
3.	SC	24	19	01	44	17
4.	ST	06	03	0	09	04
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100</b>

Exploring the caste wise distribution of study subjects it was revealed that maximum belong to general caste i.e 105(41%) closely followed by 98(38%) belonging to OBC. 44(17%) study subjects belong to schedule caste & 9(4%) to schedule tribe.

**Table No.5 Educational status of cases(n=256)**

Sl.No	Educational status	Male	Female	TG	Total	Percentage
1.	Illiterate	07	09	01	17	6.6
2.	Primary school	47	46	03	96	37.5
3.	Secondary school	64	45	0	109	42.5
4.	College & above	18	09	0	27	10.5
5.	Anganwadi	04	02	0	06	2.3
6.	No schooling	01	0	0	01	0.3
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100</b>

Out of 256 study subjects majority i.e 109(42.5%) had educational status upto secondary school followed by 96(37.5%) primary education & 27(10.5%) had the status of college level education. 17(6.6%) study subjects were illiterate.

**Table No.6 Occupational status of cases:-(n=227)**

Sl.No	Occupation	Male	Female	TG	Total	Percentage
1.	Migrant Labourer	68	0	0	68	30
2.	Driver	23	0	0	23	10.1
3.	Unskilled worker	16	0	0	16	7.04
4.	Unemployed	14	102	4	120	52.9
	<b>Total</b>	<b>121</b>	<b>102</b>	<b>4</b>	<b>227</b>	<b>100</b>

On exploration of occupational status of study subjects, it was observed that majority, i.e, 120(52.9%) were unemployed followed by 68(30%) migrant labourers, 23(10.1%) drivers & 16(7.04%) unskilled workers. It was further observed that the extent of unemployment was 100% among the female as well as transgender study subjects.

**Table No.7 Distribution of cases according to monthly income(Modified Kuppuswamy Scale)**

Sl.No	Social class	No of cases	Percentage
1.	Upper(I)	9	3.5
2.	Upper Middle(II)	19	7.4
3.	Lower Middle(III)	32	12.5
4.	Upper Lower(IV)	144	56.3
5.	Lower(V)	52	20.3
	<b>Total</b>	<b>256</b>	<b>100</b>

Maximum study subjects belonged to upper lower socio economic status i.e 56.3% followed by 20.3% belonging to lower SES. Thus 76.3% of the study subjects were from the low socio economic strata.

**Table No.8 Marital status of cases(n=256)**

Sl.No	Marital status	Male	Female	TG	Total	Percentage
1.	Single	27	11	03	41	16.01
2.	Married	113	71	0	184	71.8
3.	Widow	0	29	0	29	11.3
4.	Live-in	01	0	01	02	0.78
	<b>Total</b>	<b>141</b>	<b>111</b>	<b>04</b>	<b>256</b>	<b>100</b>

From among 256 study subjects maximum i.e 184(71.8%) were married followed by 41(16.01%) single & 29(11.3%) widow. Surprisingly 2 number of study subjects were having live-in relation, of which 1 was transgender.

**Table No. 9 Presence of Risk Factors among study subjects(N = 256)**

Sl. No.	Risk Factors	Male	Female	TG	Total	Percentage
01	Heterosexual Promiscuity	0	91	0	91	35.5
02	Commercial Sex Worker	113	0	0	113	44.1
03	Unsafe Blood Transfusion	05	05	0	10	3.9
04	Male having sex with male	01	0	04	05	1.9
05	Parent to child transmission	12	11	0	23	8.9
06	Unsafe Injection	02	0	0	02	0.7
07	Unknown	08	04	0	12	4.6
	Total	141	111	04	256	100

The above table reveals the presence of different risk factors according to sex of the study subject.. Out of 141 males,113(80.1%) had the habit of visiting commercial sex workers. Further, out of 111 female study subjects, 91, i.e 82% had heterosexual promiscuity. From among the 4 TG study subjects, the prevalent risk factor was MSM.

**Table No. 10 Distribution of cases according to WHO Clinical staging(n=256)**

Sl.No	WHO clinical staging	M	F	TG	Total	Percentage
1	Stage1	75	71	4	150	58.5
2	Stage2	11	7	0	18	7
3	Stage3	23	9	0	32	12.5
4	Stage4	12	5	0	17	6.6
5	No clinical staging	20	19	0	39	15.2
6	Total	141	111	4	256	100

According to the WHO clinical staging,150 were in stage1 followed by 32 in stage3,18 in stage2 & 17 in stage4.39(15.2%) of the study subjects did not have any clinical staging.

**Table No. 11 Distribution of cases on ART with TB(n=256)**

Sl.NO	TB	M	F	TG	Total	Percentage
1	Yes	41(29%)	12(11%)	0	53	20.7
2	No	100	99	4	203	79.3
3	Total	141	111	4	256	100

On exploring the TB positivity,53(20.7%) study subjects were also receiving the ATT. The percentage of male study subjects on ATT was higher, that is 29% as compared to female study subjects( 11%).( p , 0.05) None of the transgender study subjects were on ATT.

**Table No. 12 Pattern of contraceptive use among the study subjects (N = 256)**

Sl.No.	Type of contraceptives	Male	Female	TG	Total	Percentage
1	Condoms	65	1	0	66	25.7
2	OC Pills	0	2	0	2	0.7
3	Tubectomy	0	18	0	18	7
4	None	76	90	04	170	66.4
	Total	141	111	04	256	100

Out of 256 study subjects,170 ( 66.4 %) were not using any type of contraceptive. From among rest 86 study subjects using some form of contraceptives, maximum i.e 66 ( 76.7 %) were using condoms.

**Table No.13 Addiction profile of study subjects(n=256)**

Sl. No	Types of addiction	M	F	TG	Total	Percentage
1.	Alcohol	18	0	0	18	7
2.	Smoking	03	0	0	03	1.1

3.	Tobacco chewing	28	01	01	30	11.7
4.	No addiction	92(65.2%)	110(99.1%)	03	205	80
	Total	141	111	04	256	100

Table No.14 reveals the addiction profile of the study subjects. From among 141 males, 92(65.2%) had no addiction & rest 49(37.8%) had some addiction. The commonest form of addiction among males was tobacco chewing, that is, 28(57.1%) followed by alcohol 18( 36.7%) & smoking only 3(6.1%).Similarly the extent of no addiction among females was 99% & that among TG was 75%.

**Table No.14 Presence of risk factor & residential status(n=256)**

Sl.No.	Risk factor	Rural	Urban	Total
1.	Heterosexual promiscuity	75(35.3%)	16( 36.3%)	91(35.5%)
2.	CSW	97(45.7%)	16( 36.3%)	113(44.1%)
3.	Unsafe Blood transfusion	08	02	10(3.9%)
4.	MSM	02	03	05(1.55%)
5.	PTCT	19	04	23(8.98%)
6.	Unsafe injection	01	01	02(0.78%)
7.	Unknown	10	02	12(4.6%)
	Total	212	44	256(100%)

The commonly prevalent risk factor among rural & urban study subjects was visiting to commercial sex workers 45.7% & 36.3% respectively followed by hetero sexual promiscuity 35.3% & 36.3 % respectively.

**Table No.15 Distribution of study subjects according to age & risk factor:- (n=256)**

Sl. No	Risk factor	1-5yr	6-10yr	11-19yr	20-35yr	36-60yr	>60yr	Total
1.	Heterosexual Promiscuity	0	0	02	61	28	0	91(35.5%)
2.	CSW	0	0	0	46	66	1	113(44.1%)
3.	Unsafe BT	0	0	01	04	05	0	10(3.9%)
4.	MSM	0	0	0	03	02	0	05(1.9%)
5.	PTCT	10	07	06	0	0	0	23(8.9%)
6.	Unsafe inj	0	0	0	0	02	0	02(0.7%)
7.	Unknown	0	0	01	04	07	0	12(4.6%)
	Total	10	07	10	118	110	1	256(100%)

The above table depicts the distribution of risk factors according to age group. In the age group 20 to 35 the commonest risk factor was heterosexual promiscuity,i.e 61(51.7%) followed by visiting to commercial sex worker, i.e 46(39%).

In the age group 36 to 60 years a commonly prevalent risk factor was visit to commercial sex worker, i.e 66(60%) followed by heterosexual promiscuity, i.e 28(25.5%).

PTCT was the only risk factor amounting to 10.The unsafe blood transfusion was found to be a risk factor among 10 study subjects, of which 01(10%) in age group 11 to 19 years,4(3.4%) in 20 to 35 years age group and 5(4.5%) in the age group 36 to 60 years.

In case of 12 study subjects(4.7%) there were no known risk factors.

**Table No.16 Distribution of study subjects according to risk factor & marital status(Multiple risk factor possible)(n=256)**

Sl No.	Risk factor	Single	Married	Widow	Live-in	Total
1.	H.S.promiscuity	0	63 (34.2%)	28 (96.6%)	0	91(35.5%)

2.	CSW	10	102	0	1	113(44.1%)
3.	Unsafe BT	02	08	0	0	10(3.9%)
4.	MSM	03	01	0	1	05(1.9%)
5.	PTCT	23	0	0	0	23(8.9%)
6.	Unsafe injection	0	02	0	0	02(0.7%)
7.	Unknown	03	08	1	0	12(4.6%)
	Total	41	184	29	2	256(100%)

The above table reveals the distribution of risk factors according to marital status. Out of 184 married study subjects, 102(55.4%) were having the risk factor of visiting to CSW followed by 63(34.2%) were having heterosexual promiscuity.

Among the singles the commonest risk factor was PTCT i.e 23(56.1%) followed by visit to CSW 10(24.4%).

From among 29 widow study subjects, 28(96.6%) were having heterosexual promiscuity.

**Table No.17 Distribution of study subjects according to risk factor & occupation:-(n=227)**

Sl No.	Risk factor	Migrant Labourer	Driver	Unskilled worker	Unemployed	Total
1.	H.S.P	62 (91.2%)	0	11	18	91 (40%)
2.	CSW	0	22 (95.7%)	4	87	113 (49.7%)
3.	UBT	04	0	0	06	10(4.4%)
4.	MSM	0	0	0	05	05 (2.2%)
5.	PTCT	0	0	0	0	0 (0%)
6.	Unsafe inj	0	01	01	0	02 (0.8%)
7.	Unknown	02	0	0	04	06 (2.6%)
	Total	68	23	16	120	227 (100%)

On exploring the profile of risk factors among different occupational groups, it was observed that out of 68 migrant labourers 62(91.2%) had heterosexual promiscuity. From among the 23 drivers 22(95.7%) had the habit of visiting CSW. Looking at the risk factor of 120 unemployed study subjects, 87(72.5%) were visiting to CSW. Hence it is observed that the overall predominant risk factor was visit to CSW(49.8%) followed by heterosexual promiscuity 91(40.1%).

**DISCUSSION:-**

Most of the ART attendees were married(71.8%). In a similar study by Badiger et al(2010), the percentage of married ART attendees was 58.4%<sup>3</sup>. In another study by Zaheer et al (2003) the same was 77.1%<sup>4</sup>.

In the present study the commonly prevalent risk factor was visiting to CSW(44.1%) followed by heterosexual promiscuity 35.5%. Ajaypal Singh et al in 2013 revealed that the extend of heterosexuality was found to be 96.3%<sup>5</sup> and Tamuro et al (2011) found it to be 100%<sup>6</sup>.

The percentage of study subjects belonging to WHO clinical stage was 68.4%. Whereas Arun K. Jha et al (2014) revealed that the same was 49.6%<sup>7</sup>.

It was observed in the present study that only 20.7% of ART attendees were TB +ve whereas Surendra K. Sharma et al (2014) observed it to be 33.2%<sup>8</sup>.

The present study revealed that 66.4% of ART attendees were

not using any contraceptives which is quite alarming. The extent of use of condom was found to be 25.8%. In a similar study by Baig et al(2012) reported that no use of condom among TG/TS during anal sex<sup>9</sup>. In this study the same is observed.

Addiction and HIV positivity goes together. The present study revealed that 20% of study subjects were having history of substance abuse, whereas Baig et al(2012) found that 45% were drug addicts and 1% injecting drug users<sup>9</sup>. Commonly prevalent risk factors among rural study subjects was visit to CSW(45.7%) as compared to urban study subjects that is heterosexual promiscuity(36.3%) & CSW(36.3%). Solomon et al observed the same in their study highlighting the preponderance of heterosexuality as a common risk factor.

The age group 20-35 years being the most sexually active age group, the commonly seen risk factor was heterosexual promiscuity & CSW.

The current studies revealed that heterosexual promiscuity is commonly seen among widows(96.6%) whereas the same risk factor is prevalent in 34.2% of the married study subject. The closed family structure may have some impact on heterosexual promiscuity. A study by Reynolds SJ et al(2004), it is observed that HIV prevalence is maximum among previously married study subjects(12.12%)<sup>10</sup>.

It is observed from the current study that the occupation of driver is having CSW visit as the commonest risk factor. The same observation has been made by Dandona.R. et al (2006) 4.79%<sup>11</sup>.

The commonest risk factor among migrant labourers was found to be heterosexual promiscuity(91.2%).

In both the situation staying away from family for long period acts as a significant contributing factor for development of such risky habits.

170(66.4%) study subjects were not using any contraceptives which may help in the spread of infection particularly among those having multiple partners.

It is encouraging to note that 205(80%) study subjects did not have any addiction which might have complicated the situation.

53(20.7%) study subjects were also receiving the ATT. The percentage of male study subjects on ATT was higher, that is 29% as compared to female study subjects(11%). (p < 0.05).

**CONCLUSION:-**

The socio-demographic profile of the attendees of the ART clinic gives an insight into various factors contributing to their HIV positivity. Timely intervention of these factors will definitely go a long way in curbing the spread of HIV infection. The present study provides clue for further exploration of compliance to treatment, follow up, development of complications and community based management of such cases. Further factors contributing to non compliance may be spelt out through prospective scientific explorations.

**Conflict of interest:** There is no conflict of interest.

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