

**Association of secondary education and marital status in People Living with HIV/AIDS (PLHA) patients at antiretroviral (ART) centre in Western Rajasthan**

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**Abstract**

**Introduction-**HIV infection continuously major public health problem throughout world so there need to study the secondary education and marital status of patients who come to ART centers.

**Aim & Objectives:** To study the secondary education and marital status in People Living with HIV/AIDS (PLHA) patients at antiretroviral (ART) centre in Western Rajasthan.

**Methodology-** In present study 786 patients enrolled in institute record system during the study period recorded in master cards and an ART register. They were followed for a period of two year with relevant investigations.

**Results-**In our study 786 patients enrolled, there was male predominance (57.41%) along with (57.38%)

illiterate. The significant age group of PLHA patients were 31-45 years (50.38%). Maximum patients were married (76.72%) and (0.64%) patients enrolled live in relationship.

**Conclusion-** Illiterate male at their reproductive age group were more prone to develop HIV infection. Married women were also got chance to acquire HIV infection from their husband. Proper primary and secondary education to patients with their spouse is mandatory.

**Keywords:** Antiretroviral therapy (ART), ART centre, highly active antiretroviral therapy (HAART), marital status, People Living with HIV/AIDS (PLHA), secondary education.

## **Introduction**

HIV continues to be a major global public health issue. In 2015, an estimated 36.7 million people were living with HIV (2.1 million people became newly infected with HIV). HIV prevalence rate estimated 0.8% for the age of 15-49 years globally. Vast majority of patients belongs to lower socio-economic countries. As per of June 2016, 18.2 million people were accessing antiretroviral therapy. In 2015, around 46% PLHA patients were on ART therapy. In which 77% pregnant women on ART therapy to prevent the vertical transmission.<sup>(1)</sup>

Since the start of the epidemic, an estimated 78 million people have become infected with HIV and 35 million people have died of AIDS-related illnesses.<sup>(1)</sup> An estimated 25.5 million PLHA patients in Sub Saharan African.<sup>(1)</sup> In nine Southern African countries, seroprevalence data indicate that >10 % of adult population age 15-49 years is HIV infected. In addition, among high risk individuals who were live in urban areas of sub Saharan Africa, Seroprevalence is now >50 % in some places.

Heterosexual exposure is the primary mode of HIV transmission in sub Saharan Africa.<sup>(2)</sup> In end of 2015, Asia and the Pacific countries had PLHA patients around 5.1 millions. In this region of the world, HIV prevalence is highest in Southeast Asian countries. Among countries in Asia only Thailand has an adult seroprevalence rate of > 1%. However, The population of many Asian nations are so large (especially India and China) that even low infection and seroprevalence rates result in large numbers of people were living with HIV.<sup>(3)</sup> In 2015, HIV prevalence in India was an estimated 0.3% & 2.1 millions of PLHA patients.<sup>(3)</sup> HIV positive population of Rajasthan contributes to the 5% of India's total HIV load with more than 5 thousand

new infection in the year 2015, as reported by NACO. In the same year, an estimated 1,30,000 people died from AIDS-related illnesses. Among the states / Uts in 2015 Manipur has shown the highest estimated adult HIV prevalence of 1.15% followed by Mizoram (0.8%), Nagaland (0.78%), Andhra Pradesh and Telangana (0.66%) were beside these state Maharashtra, Chandigarh, Tripura, Tamilnadu have shown estimated adult HIV prevalence > 0.26, while Odisha, Bihar, Sikkim, Delhi, Rajasthan & West Bengal have shown an estimated adults HIV prevalence in the range of 0.21-0.25 % other state/Uts have level of adult HIV prevalence below 0.20 %.<sup>(4)</sup>

In 2015 adult HIV prevalence was estimated at 0.30 % among male and 0.22 % female. Adult HIV prevalence at national level has continue its steady decline from an estimate peak of 0.38 % in 2001-03 through 0.34% in 2007 and 0.28% in 2012 to 0.26% in 2015.<sup>(4)</sup>

HIV is rapidly spreading to rural and urban area by migrant workers & truck drivers which affect as a link between high risk group to general population. Various study suggest that 5-10% of truck drivers are infected with HIV.<sup>(5)</sup>

## **Material And Methods**

**Study Location:** The study was conducted in ART PLUS Centre that were attached to the department of Internal Medicine, Dr. S.N. Medical College & Mathura Das Mathur Hospital, which is a tertiary centre based hospital in Western part of Rajasthan. This institute provides health services to population residing in Jodhpur and neighbouring (desert part) districts e.g. Barmer, Jaisalmer, Jalore, Pali, Sirohi, Nagaur.

**Study Design:** It was retrospective Observational study.

**Study size:** All patients were enrolled in institute record system during the study period from April 2015

to March 2017. ART registration done along with parameters recorded in master cards. Patients attended the ART clinic each month, at which time their parameter status was entered on the master card and they took ART drugs for next month.

**Inclusion Criteria**

1. All patients those who were on antiretroviral therapy
2. ≥15 years to 75 years

**Exclusion Criteria**

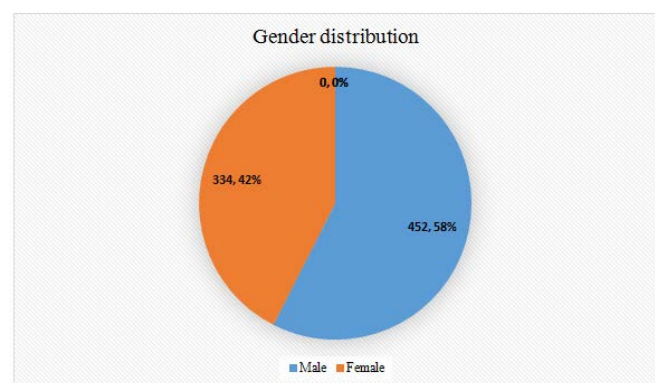
1. Patient not on antiretroviral therapy
2. Age less than 14 years
3. Pregnant women

**Tools:**The study protocol would approved by the institutional ethical committee. Patients epidemiological and demographical profile included age, gender, education, socioeconomic status, marital status along with hematological profile, CD4 count, ART treatment and various health parameter, was recorded in master cards and ART register.

**Statistical analysis:** Collected data were analysed with appropriate statistical tests.

**Observations And Results**

Out of 786 patients, male patients were 452 (57.41%) and female patients were 334 (42.49%). Male to female ratio 1.35:1. This correlation was statically significant (p Value 0.00001)

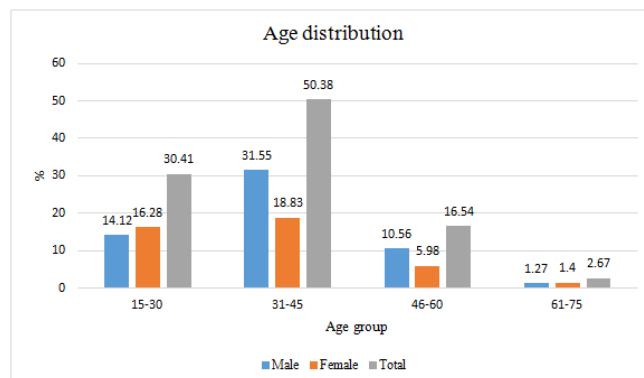


The distribution of patients according to the age showed that the maximum number of patients 396

(50.38%) were in the age group of 31-45 years followed by the age group 16-30 years. This correlation was statically not significant.

Table 1

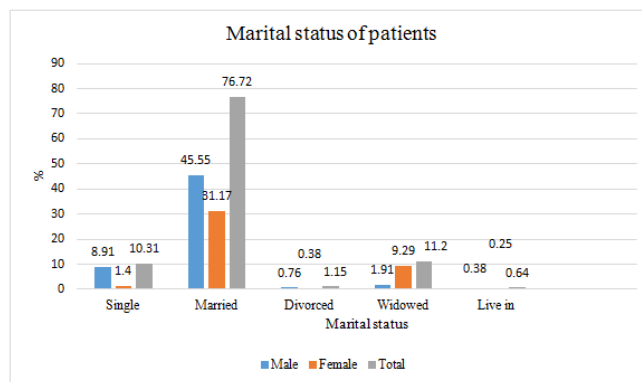
Age (in years)	Male	Female	Total	p value
15-30	111 (14.12%)	128 (16.28%)	239 (30.41%)	0
31-45	248 (31.55%)	148 (18.83%)	396 (50.38%)	
46-60	83 (10.56%)	47 (5.98%)	130 (16.54%)	
61-75	10 (1.27%)	11 (1.40%)	21 (2.67%)	
Total	452 (57.41%)	334 (42.49%)	786 (100%)	



Out of 786 patients, 451 (57.38%) were illiterate while 335(42.62%) were literate. Among literates, maximum number of patients i.e. 213 (27.10%) were educated primary school level. Only 32 (4%) patients educated college and above shown Table No.2. This correlation was not significant.

Table 2

Education	Male	Female	Total	P value
Illiterate	201 (25.57%)	250 (31.81%)	451 (57.38%)	0
Primary school	152 (19.34%)	61 (7.76%)	213 (27.10%)	
Secondary school	75 (9.54%)	15 (1.91%)	90 (11.45%)	
College & Above	24 (3.05%)	8 (1.02%)	32 (4.07%)	
Total	452 (57.41%)	334 (42.49%)	786 (100%)	

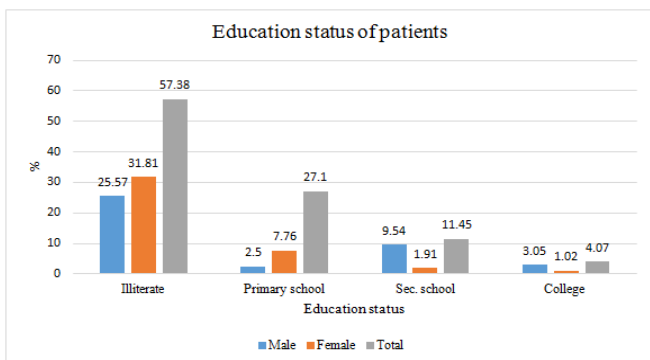


**Discussion**

The disease of the present era increasing its dimensions all over the world, thought to be incurable, only a iceberg of which is visible was chosen the subject of present study.

In the present study the male and female ratio was 1.35 : 1 ( 452 male & 334 female ). A survey was carried out by Kumawat S et al (6) observed a ratio of 1.37:1 male and female (173 male &126 female) and Nayak UB et al (7) observed male to female ratio of 2.09:1 (67.64% male and 32.35% female). Other studies by Singh AP et al (8) observed male to female ratio 2.79:1 (81 male and 29 female patients). In similar other studies like Joge US et al (9) who reported 68.04 %male and 31.96% female attendees at an ART Centre from a rural tertiary centre of Maharashtra. Not only Rajasthan but all over in India the male group is more infective than female. The result of the above different study is similar to that of present study. The observation is alarming and clear cut showed that the female act as a reservoir of infection.

The present study maximum number of patients were in age group 31-45 year, n= 396 (50.38%) while 16-30 years age group ranked 2<sup>nd</sup>, n= 239 (30.41%). In a study done by Mandal et. Al (10), 81.16% of cases were in age group of 20-40 years. Similar observation was made by Kumawat S et.al (6) who observed majority of (82.66%) patients in adult (15-49) age group. which is sexually



In table no 3 among the total patients studied, 603 (76.72%) were married and living with their spouse followed by 88 (11.20%) widowed, 81 (10.31%) single, 9 (1.15%) divorced, live in relationship 5 (0.64%). This correlation was not significant.

Table 3

Marital status	Male	Female	Total	P value
Single	70 (8.91%)	11 (1.40%)	81 (10.31%)	0
Married	358 (45.55%)	245 (31.17%)	603 (76.72%)	
Divorce	6 (0.76%)	3 (0.38%)	9 (1.15%)	
Widowed	15 (1.91%)	73 (9.29%)	88 (11.20%)	
Live in	3 (0.38%)	2 (0.25%)	5 (0.64%)	
Total	452 (57.41%)	334 (42.49%)	786 (100%)	

active and productive age group. This is nearly similar to the national level statistics in which NACO<sup>(11)</sup> has reported that, 86% of the cases were in the adult age group. Similar higher prevalence in this age group was observed in previous studies conducted in India.

In the present study out of 786 patients, 452 (57.38%) illiterate while 335 (42.62%) were literate. Among literate maximum number of patients 213 (27.10%) were educated upto primary education. Study by Kumawat S et.al<sup>(6)</sup> observed 55.33% patients were literate and 44.66% were illiterate. Among literates maximum number of patients 106(35.33%) were educated up to primary school. Study by Nayak UB et.al<sup>(7)</sup> observed out of 102 patients, 83 (81.37%) were literate while 19 (18.62%) were illiterate. These findings were different from study conducted by Joshi H.S et al<sup>(12)</sup> and Joge US et al<sup>(9)</sup> as majority of patients in these studies were illiterate. As majority of patients in our study group were either illiterate or educated up to primary school level only. Thus, it may be inferred that higher educational levels offered some protection against HIV.

With regard to marital status the present study show that majority were married 603 (76.72%) patients living with their spouse followed by 88 (11.20%) widowed. Similar results were observed by Kumawat S et.al<sup>(6)</sup> with regard to marital status majority of patients were married (78%), in the study group widow (11.33%) outnumbered unmarried (10%) patients. Study by Nayak UB et al<sup>(7)</sup> Observed majority of patients were married (75.49%). High number of married persons having HIV/AIDS was also reported by Jayarama et al<sup>(13)</sup> (70.3%). Almost all widows gave history of death of their spouse due to HIV/AIDS.

## Conclusion

Illiterate male at their reproductive age were more prone to get HIV infection. Married women were found to be more vulnerable to acquire HIV infection from their husbands. HIV negative spouse should be the target group for priority targeted intervention to reduce the chance of HIV transmission. This will also reduce the chance of female seropositivity as well as mother to child transmission of HIV. Combination of behavioral risk factors and unawareness is responsible for rapid spread of HIV/ AIDS. People with high-risk behavior and the spouses of affected patients need to be educated for primary and secondary education.

ART programmes need to consider try to site new ART clinics in better locations, set up outreach clinic or look into ways of financially supporting patients to clinics and ensure that the address recorded for the patient is correct in order to facilitate contact tracing if this become necessary.

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