Socio-demographic profile of clients enrolled at the ICTC of a teaching institute in Kolhapur, India

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Abstract

Context : HIV/AIDS has evolved to become a challenge and major global threat to public health. All over India, a need-based project with NACO protocols, was established through Integrated Counceling and testing Centre (ICTC), involving a series of interventions for providing cost-effective preventive services through a holistic approach for all segments of the population.

Objectives : 1. To study the sociodemographic profile of clients enrolled in the ICTC. 2. To study the risk behavior pattern of the above clients.

Study design: A cross-sectional (record-based) study. **Setting:** Dr. D.Y.Patil Medical College, Kolhapur, India.

Material and Methods: The study population included 5729 clients enrolled at the ICTC from January 2009 to December 2012.

Results:

3.77 % of the ICTC attendees were HIV seropositive . An overall 85.65 % of the HIV seropositive subjects belonged to the age group 15-49 years. Seroreactive cases were complied year-wise and showed appreciable decrease in seroprevalence from 5.73% in the year 2007 To 1.97 % in the year 2012. Seroprevalence decreased with improvement in education and with improvement in job nature.

Conclusion: Such studies should be carried out in various settings to understand the complex relations of different socio-demographic factors influencing the transmission and control of HIV.

KEYWORDS: seroprevalence, integrated counceling and testing, risk behavior, sociodemographic profile.

Introduction:

The emergence and pandemic spread of the Acquired Immunodeficiency Syndrome (AIDS) has posed the greatest challenge to public health and economy in modern times[2]. India has the third largest number of people living with HIV/AIDS, remaining just behind

South Africa and Nigeria. As per the 2008-09 HIV estimates, there were an estimated 23.9 lakh people currently living with HIV/AIDS in India with an adult prevalence of 0.31 percent . Sixty percent of people living with HIV (PLHIV) were in the six high prevalence states of Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh and Manipur. In 2009, an estimated 2.4 million people (aged 15-49) were living with HIV, slightly lower than the 2.5 million reported in 2001. The reduction of the overall adult prevalence is not only associated with increased HIV programme and service coverage, but also with a more valid estimation process brought about by improvements in surveillance coverage, quality of data, and methods used for estimation[1].

Kolhapur is a district in South India, with a population of 3,874,015 out of which 31.73% is Urban population. The district has a sex ratio of 953 females for every 1000 males, as per 2011 census[19]. Being an important tourist centre in Maharashtra state, it is known as 'Dakshin Kashi' from ancient times. It is a famous religious place due to Mahalaxmi and Jyotiba temples. It offers many picturesque sights for tourists, ranging from forts, hills, dams and scenic natural beauty. It is a centre of art, education, industry, sports, wrestling, food, headwear, footwear and jewellery[20]. Maharashtra is bordered on South by Karnataka and Andhra Pradesh, which are considered high HIV prevalence states[1].

The integrated Counseling and Training Center, (ICTC) is an important referral centre for HIV suspected patients. It furnishes all the medical needs of the HIV patients as per the National AIDS Control Organization (NACO) guidelines[13].This study throws light on the epidemiological profile of HIV positive individuals. This will help to identify the various risk groups and disseminate the priority targeted interventions to reduce HIV transmission in the community. With this background, we undertook the present study.

Material and Methods :

The present study was based on the data from the ICTC functioning in Dr. D.Y. Patil Medical College, in Kolhapur district of Maharashtra State, India, during the period January 2009 to December 2012. The study was approved by the Ethics Committee of the institute. The current study is focused only on the non-pregnant females, males and children who were enrolled in the ICTC.

All the patients enrolled in the ICTC of our hospital were counseled as one to one counseling method by the counselor and informed written consent was taken from the clients. After that, the laboratory technician collected their blood samples. Serum was separated and tested for HIV antibodies in the microbiology laboratory, as per NACO guidelines. HIV was diagnosed by performing Enzyme Linked Immunosorbent Assay (ELISA) by two different antigens and a rapid test as recommended by NACO[10]. The kits used were : 1.COMB AIDS HIV 1 + 2 Immunoblot Test Kit, SPAN DIAGNOSTICS Ltd, Surat, Gujarat, India. 2.PAREEKSHAK TRISPOT, BHAT BIOTECH INDIA (P) Ltd, Bangalore, India. 3.PAREEKSHAK TRILINE, BHAT BIOTECH INDIA (P) Ltd, Bangalore, India. All ICTCs participate in an External Quality Assessment Scheme (EQA). ICTCs send 20% of all positive samples, or all the positive samples if less than five samples are positive, and 5% of all the negative samples collected in the first week of every quarter for cross - checking to the State Reference Laboratory (SRL), once every quarter. In addition, EQAs involve sending of "coded" samples from the reference Laboratories to the ICTCs, twice a year for testing, called as 'Panel Sera'[10].

The data of all the clients enrolled in the ICTC regarding the year of reporting, age, gender, occupation, education, marital status, risk behaviour and the in-referral of the clients was collected from the ICTC registers prescribed by NACO. Data was entered and analyzed using Chi square method of independence with the help of stat calc. software.

Results:

The total number of clients who were provided counseling and testing services during the years 2009-12 were 5729. Among them, 216 (3.77%) were diagnosed to be HIV seropositive. The HIV seropositivity among males was found to be 3.88% and among females it was 4.32%. Seroreactive cases were compiled year-wise and showed appreciable decrease in HIV seroprevalence from 5.73% in 2009, 4.19% in 2010, 2.63% in 2011 to 1.97 in 2012 (Table.1).

Table 2 depicts the socio-demographic profile of HIV seropositive clients. 55 males (48.24%) and 40 females (39.21%) belonged to the age group 31-49 years. 40 males (35.08%) and 50 females (49.0%) were from the age group 15-30 years. Majority of the males (83.33%) and females (76.47%) were married. 96 males (84.31%) and 70 females (68.62%) were illiterate. Only 8.77% of HIV seropositive males and 9.80% of HIV seropositive females had received higher education. Regarding occupation, it was observed that majority of the seropositive males, i.e. 36.82% were agricultural workers, followed by drivers (28.07%). Most of the HIV positive females (41.18%) were housewives.

Table 3: Heterosexual transmission was identified as the major risk behavior among our HIV positive clients i.e. 92 (80.70%) among males and 80 (78.43%) among females. 30 (13.88%) clients did not specify the route of transmission. History of blood transfusion was obtained in a single male and a single female only.

Table 4: Majority of the clients (32.97%) tested for HIV were referred to the ICTC by other departments of our institute. (27.58%) clients had enrolled at the ICTC voluntarily. A total of (23.49%) clients were referred by various private practitioners in Kolhapur. 13.48% clients were referred from NGO. 2.23% clients were referred from the RNTCP department attached to our institute and the STI clinic in our institute referred only 0.24% clients.

Discussion :

In our study the seroprevalence of HIV in clients enrolled at the ICTC was 3.77%. It is lower than the seroprevalence reported by other authors who conducted similar some of the studies, viz. Solabennawar SS et al. (4.9%), South Karnataka (9.6%)[9], West Bengal (17.1%)[6] Gujarat (4.9%)[16], Biswas et al. reported a lower (1.44%) prevalence than ours, in a study in Rajasthan[4]. In different ICTCs in Maharashtra, the HIV prevalence ranges from 1.20% to 17.37% as per CMIS report of NACO[12]. A steady decline in seroprevalence from 5.73% in 2009 to 1.97% in 2012 was noted after compiling our data year wise. A similar decline in seroprevalence was observed in the ICTC clients in Andhra Pradesh, where seroprevalence declined from 10.4%, in 2008, to 6,1% in 2010[8.] The steady decline observed in our study may be attributed to the natural trend of the epidemic[1] as well as the increased awareness about the disease, expanded coverage of testing and availability of Anti Retroviral Treatment.

The total number of females tested i.e. 2359 was less than the total number of males tested (3370) for HIV seroprevalence. The national data based on information collected from sentinel surveillance sites states that women are less likely to visit testing centers if they are older, have high parity, are illiterate or are poor[18]. Programs for increasing the attendance of females in the ICTC should be carried out. In our study, the positivity rate in females was (4.32%), while in males it was 3.38%.HIV/AIDS in India is undergoing feminization because females are increasingly getting infected which is indicated by the increasing prevalence in females,[16] Biswas et al have also reported that as compared to males (1.12%), the relative seropositivity was higher among the females (2.64%).[4] Prevalence of HIV was highest among the sexually active age groups i.e. 35.08% males and 49.09% females aged 15-30 years and 48.24% males and 39.21% females in the age group 31-49 years. There is significant relation between age-group and prevalence of HIV in males as well as females ($P < 0.05$). Some other authors also reported similar finding in various studies conducted in India[6,9.] Whereas, in a study conducted in Thailand, men between 20-49 years and women less that 16 years were significantly associated with HIV prevalence[7]. The adults who migrate on account of employment, have to stay away from their families and are at a higher risk of acquiring HIV infection. This is so because they are inclined to buy sex and may not have access to information, condoms or supportive services involving safe sex. This finding suggests that preventive strategies have to be more focused among these age groups. A large percentage of HIV positive males and females (76.47%) were married. There is significant relationship between marital status and prevalence of HIV ($P < 0.05$). The prevalence is quite high among the married population. So there is a potential risk among this group, of transmitting the infection to their partners. Higher percentage of HIV positivity in married persons than those who were single or divorced or widow was also reported in a study in Hassan, south India[5], i.e. 72.8% men and 63.07% women were married. Bhandarkar et al found 77.1% positivity in married men and 68.2% positivity in married women in Karimnagar[3]. Most of the females disclosed that they were unable to negotiate for safe sex with infected partner due to fear of harassment and extramarital affairs of husbands in the male dominated culture of India. An inverse relationship with HIV seropositivity was noted with literacy, and this is found to be statistically significant ($P < 0.05$). 38.60% males and 68.62% females were found illiterate. HIV positivity decreased with increased educational status from primary school, secondary school to college and above. Among those who had received higher education above college, only 8.77% males and 9.80% females were HIV seropositive. Similar findings were noted by other authors [4,6,9]. With this context, it can be interpreted that education offers awareness about the alarming situation of HIV in the society. With regard to occupation, a noteworthy finding in our study was the higher incidence of positivity (41.18%) among housewives. Significant relationship between occupational status and HIV prevalence was noted ($P< 0.05$). Kumar et al and Joardar et al reported similar findings for housewives[9,6]. This is alarming, since housewives can increase the risk of transmission to the next generation. 36.82% males and 27.45% females were agricultural workers. This finding is similar to Kommula et al, who found HIV positivity in 39.8% of male and 26.3% o female agricultural workers[8]. This may be attributed to the illiteracy which is generally prevalent among them. Sensitization of the agricultural workers regarding HIV may facilitate early detection of cases. In our study, 28.07% of HIV positive males were drivers. Our finding

correlates with a study in Maulana Azad Medical College[15], which reports 22.2% drivers being HIV positive. Drivers have to travel away from their families for long periods and are likely to indulge in unsafe sexual practices. So there is a need to counsel this group of population intensively.

Route of transmission and prevalence of HIV are highly associated (P< 0.05). Unprotected heterosexual contact has been highlighted as the commonest mode of transmission of HIV in the present study, as compared to other groups. 80.70% males and 78.43% females revealed heterosexual route of transmission. This finding correlated with Kommula et al who reported 86.1% males and 79.6% females to have heterosexual route as the commonest mode of transmission. Transmission by other modes like homosexual transmission, blood transfusion, vertical transmission and intravenous drug abuse were low and these findings correlated with a similar study in Andhra Pradesh[8]. 13.88% of our clients did not specify the route of transmission due to the fear of discrimination and social stigma which still prevails in the society. Another study has stated that higher number of females (90.9%) did not specify the route of transmission[9] In our study only a single male and a single female gave history of previous blood transfusion transmission through blood transfusion, once a concern in many countries has been nearly eliminated in developed countries by the routine screening of blood donors[18.] A low rate seen in our study is because, in our region, screening for HIV before transfusion has been made mandatory for many years. A single HIV positive case gave History of Injection Drug Use (IDU). IDU plays a critical role in HIV epidemic in various regions, particularly Asia and Southern Europe. HIV prevalence among IDUs rose to 40% within 1 to 2 years after the first positive HIV test result. This was true for Manipur and North-East India where intravenous Drug abuse is common. However, well-monitored HIV prevention strategies like use of disposable needles outreach to IDUs, peer education programs and social network interventions have reduced the transmission among IDUs in developing countries.[18] It is not easy to judge the route of infection retrospectively by history only. However, it can be interpreted that people with high risk behavior need to be educated consistently, regarding all levels of prevention of the disease.

On analyzing the sources of referral of clients enrolled in the ICTC as seen in Table 4, we noted that majority of the clients (32.7%) were referred by various clinical departments of our teaching institute. 27.49% clients attended the ICTC voluntarily and 23.40%, were referred by private practitioners from Kolhapur. Referrals from RNTCP (Revised National Tuberculosis Control Program) i.e. 2.23% and STI (Sexually Transmitted Infections) clinics i.e. 0.24%, were poor. It is seen that sources of referral are associated with HIV prevalence (P<0.05). In another study, 55.1% of subjects came on their own without being referred by someone else[8]. Clients can be motivated to visit the ICTC by increasing awareness among the people by the combined efforts of health care personnel, NGO (Non Government Organization) and media. The HIV / RNTCP coordinated activity existing in our institution needs to be further motivated. Contribution from the STI Clinic can be improved by more effective joint efforts among the departments.

Conclusion :

The seroprevalence of HIV in the ICTC attendees has decreased steadily from 5.73% in 2009 to 1.97% in 2012, indicating the successful counseling and implementation of ICTC services in our teaching institute. In our study, the housewives and clients from the reproductive age group depicted higher seropositivity. They should be counseled and made aware of the risk of parent to child transmission. The disease burden in this age group reflects on the country's health and economy as well as loss of youth for the nation. Literacy should be increased. IEC activities (Information, Education and Communication) should be intensified. ICTC attendance can be increased by motivating the clients through involvement of media, religious heads and allowing some free time for clients to attend the ICTC sessions from office hours. HIV seropositive clients should be referred to ART (Anti Retroviral Treatment) Centre and should be followed carefully.

Limitations :

The current study is subject to certain limitations since it was conducted in a district hospital. Hence, the results are based on the reporting and data collection by the personnel employed in the ICTC. Information regarding certain variables such as substance abuse, economic status and religion, HIV2 status are not available. Limitations also included of asking question by counselor while collecting the data using oral questionnaire method. It is possible that the data reported here could be biased due to social stigma faced by the clients in the community.

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Table 1 :

Year	Male Tested	Male Positive(%)	Female Tested	Female positive (%)	Total tested	Total Positive (%)
2009	955	56(5.86)	843	47(5.58)	1798	103(5.73)
2010	822	24(2.91)	348	25(7.18)	1170	49(4.19)
2011	807	20(2.48)	636	18(2.83)	1443	38(2.63)
2012	786	14(1.78)	532	12(2.26)	1318	26(1.97)
Total	**3370**	**114(3.38)**	**2359**	**102(4.32)**	**5729**	**216(3.77)**

Table 1 : Year and sex wise distribution of clients tested and diagnosed HIV positive.

Table: 2

Variables		Male (%) N=114	P Value	Female (%) N=102	P Value
Age	0-14	4(3.50)	P< 0.05	5(4.90)	P< 0.05
	15-30	40(35.08)		50(49.01)	
	31-49	55(48.24)		40(39.21)	
	50 and above	15(13.15)		7(6.86)	
Martial Status	Single	10(8.77)	P< 0.05	9(8.82)	P< 0.05
	Married	95(83.33)		78(76.47	
	Divorced	2(1.75)		1(0.98)	
	Widow / widower	7 (6.14)		14(13.72)	
Education	Illiterate	44(38.60)	P< 0.05	70(68.62)	P< 0.05
	Primary	29(25.43)		18(17.64)	
	Secondary	31(27.19)		4(3.92)	
	College & above	10(8.77)		10(9.80)	
Occupation	Unskilled	20(17.54)		18(17.64)	

	Semiskilled/ Petty Business	12(10.53)		8(7.84)	
	Salaried	6(5.26)		3(2.94)	
	Driver	32(28.07)		0	
	Agricultural workers	42(36.82)	P< 0.05	28(27.45)	P< 0.05
	Students	2(1.75)		3(2.94)	
	Housewife	0		42(41.18)	

Table 2 : Socio-demographic profile of HIV positive clients

Table : 3

Route of transmission	**Male N= 114**	**Female N=102**	**Total N= 216**	**P Value**
Heterisexual	92(80.70)	80(78.43)	172(79.63)	
Homosexual	2(1.75)	0	2(0.92)	
Blood transfusion	1(0.88)	1(0.98)	2(0.92)	
Infected syringes / needles	1(0.88)	0	1(0.46)	P <0.05
Parent to child	4(3.50)	5(4.90)	9(4.16)	
Not specified	14(12.28)	16(15.68)	30(13.88)	

Table 3 : Pattern of risk behavior among HIV positive clients

Table : 4

Source of referral of clients	**Total Tested N = 5729 (%)**	**P Value**
NGO	772(13.48)	
RNTCP	128(2.23)	
Various clinical depts. Of our institute	1889(32.97)	
Private practitioners in Kop	1346(23.49)	P < 0.05
Client initiated	1580(27.58)	
STI clinic	14(0.24)	

Table 4: Source of referral of clients for integrated counseling and testing centre