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SOCIO-DEMOGRAPHIC PROFILE AND RISK BEHAVIOUR PATTERN IN HIV POSITIVE POPULATION ATTENDING THE INTEGRATED COUNSELLING AND TESTING CENTRE OF A MEDICAL COLLEGE HOSPITAL, BENGALURU

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ABSTRACT: BACKGROUND: HIV infection is growing very fast in India. HIV/AIDS epidemic has devastated many individuals, families and communities. ICTC services have begun as a cost effective intervention in identifying these epidemics. **OBJECTIVES:** To identify the socio-demographic profiles and risk behavior in HIV positive subjects. **STUDY DESIGN:** Cross sectional observational study. **MATERIALS AND METHODS:** The study was conducted among the attendees who tested positive for HIV in the ICTC center of Kempegowda institute of medical sciences and research center, Bengaluru, from February 2013 to January 2014. **RESULTS:** The study included 276 (6.9%) HIV positive subjects among 3958 attendees. 58.3% were males, 40.9% were females and 0.7% was transgender. About 86.1% of HIV positives belonged to age group of 20-49 years. 81.9% of males and 76.9% of females were married. Only 21.8% of HIV positives were from rural areas. 61.4% of males and 50.3% of females were educated. Among males 20.4% were involved in unskilled work followed by 18.6% in business and 14.9% in driving. Whereas, 75.2% were female were housewives. Heterosexual contact was the major route of HIV transmission. **CONCLUSION:** HIV positive patients have started using ICTC services which reflects a change in their attitude towards HIV. Increased HIV prevalence among the females, indicate that the present interventions must be strengthened to control HIV prevalence with a special focus on females.

KEYWORDS: HIV sero-status, ICTC, risk behavior.

INTRODUCTION: HIV infection has established itself into a global epidemic in less than 20 years. According to the UNAIDS and WHO global AIDS epidemic update 2013, approximately 35.3 million people are living with HIV/AIDS worldwide.^[1] As per HIV estimation 2012, the estimated number of people living with HIV/AIDS in India is 20.89 lakhs, with an adult prevalence of 0.27% in 2011.^[2] The distribution and spread of the disease is highly uneven in India.^[3]

National AIDS control organization (NACO) declared six states including Karnataka as high prevalence areas in 2005.^[4] It is estimated that only 10-20% of those infected with HIV know that they are infected, which impedes treatment prevention efforts. Proper understanding of the epidemiology of HIV/AIDS in a particular region with regards to various socio demographic factors, level of awareness and pattern of risk behavior of the population, is necessary for the implementation of cost effective health care delivery systems, because till date, the most effective approach available are awareness generation and life style changes.

Integrated counseling and testing center (ICTC) has become an integral part of HIV prevention programme which provides people with an opportunity to learn and accept their HIV serostatus in a confidential environment.^[5]

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The data generated in the present study from the ICTC may provide important clues in understanding the epidemiology of the disease in this particular region.

MATERIAL AND METHODS: The current study was conducted among the HIV sero-positive attendees of the ICTC of Kempegowda institute of medical sciences and research center, Bengaluru, which is the capital of Karnataka. This institution is a tertiary care center which is situated in the center of the city and very close market place which has a high prevalence of commercial sex workers.

Karnataka is bordered by three states which have well established high HIV prevalence (Maharashtra, Andhra Pradesh and Tamil Nadu). Bengaluru city shares many demographic and economic ties with these neighboring states. There is an extensive migration to and from these states, and major transportation routes connect Bengaluru with them, contributing its vulnerability to the rapid spread of HIV infection.

The study included 276 HIV positive patients among the total 3958 attendees who attended the center from February 2012 to January 2013 either voluntarily or being referred from different departments of the institute. Information about the HIV positive patients was collected from the records maintained at the center.

The variables studied were age, sex, marital status, level of education, occupation, place of residency, and pattern of risk behavior. Ethical clearance was obtained from ethics committee.

Blood sample of these subjects were tested for HIV infection by enzyme linked immunosorbent assay (ELISA) using two different antigens and a rapid test as recommended by NACO.

Data was collected and analyzed using standard statistical methods.

RESULTS: Out of the 3958 attendees 276 were HIV positive i.e. 6.9% were positive. Out of 276(6.9%) positive subjects, 161(58.3%) were males, 113(40.9%) were females and two (0.7%) were transgender.

The socio-demographic profile of HIV positive subjects (Table 1) shows that among males, majority of study subjects, 141(87.4%) belonged to the age group of 20-49yrs and among the females majority of study subjects, 96(84.8%) belonged to the age group of 20-49yrs. Only one (0.6%) among males and seven (6.1%) among females were less than 20yrs. Both the transgender subjects belonged to age group of 20-30yrs.

The distribution according to the marital status showed 132(81.9%) were married, 23(14.2%) were single among males. 87(76.9%) were married, only two (1.7%) were single and a significant number 22(19.4%) were widowed among females. Among the transgender subjects one was single while the other had live in relationship.

With regard to the place of residency, 119(73.9%) males belonged to urban population and 42(26.0%) belonged to rural population (division of urban and rural population was based on division by the Karnataka state government). Among females, 93(82.3%) belonged to urban population and 20(17.6%) belonged to rural population. Both the transgender subjects were from urban population.

The educational level of the subjects shows that, among males 34(21.1%) were illiterate (who were unable to read and write i.e. not attended school), 88(54.5%) were educated below or up to

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secondary school i.e., up to class 10 and 39(24.2%) had attended college. Among females 33(29.2%) were illiterate, 60(53.0%) were educated below or up to secondary school and 20(17.6%) had attended college. Both the transgender subjects were educated up to secondary school.

With regard to the occupational status of the subjects (Table 2), majority of males 33(20.4%) were involved in business followed by unskilled work 30 (18.6%), service 29(18.0%) and driving 24(14.9%). In case of females most of the subjects were housewives 85 (75.2%) followed by unskilled work 14 (12.3%).

Among the males 156(96.8%) had multiple sex partners, two (1.2%) were involved in homosexual practice, one (0.6%) had blood transfusion, one (0.6%) was an injecting drug user and the pattern of risk behavior was unknown in one male subject (Table 3).

Whereas among females, 66(58.4%) had multiple partners, one had contracted the infection through mother to child transmission and the pattern of risk behavior was unknown among 46(40.7%). Both the transgender had multiple sex partners.

DISCUSSION: The present study shows that the prevalence of HIV positivity among the ICTC attendees to be 6.9% which is much higher compared to the National figures 0.31% but almost similar (9.6%) to that of another study done by Kumar et al ^[6] in Udupi, Karnataka.

With regard to sex wise distribution of the attendees 58.3% were male, 40.9% were females, which is slightly higher than the National figures of 39% for females. This high prevalence among females is a great cause of concern, as this will lead to increase in the number of HIV positive children born due to maternal transmission of the infection.

There are several factors that can increase women's vulnerability to HIV infection, including early marriage, illiteracy, ignorance about risk factor and gender inequalities. As a consequence, many women are vulnerable to HIV infection even though they do not practice high risk behavior. Reportedly, there has been an increase in HIV infection among females in the recent past.^[7]

According to the study, 86.1% of study population belonged to the age group of 20-49 years (the most sexually active age group). This is in concordance with the National figures (83%) and with that reported by Lal et al (84%). Majority of study subjects (both males and females) were married. A male positive can in turn infect their wives and ultimately the risk of transmission to the child will increase. Significant number of HIV positive females were separated, divorced or widowed. This may be due the discrimination, social stigma and gender bias faced by the Indian females.

With regard to place of residency, HIV positivity was less among the rural population. A similar scenario was observed in the study done by Dandona et al.^[8] In contrast to these data, studies have reported an increased HIV prevalence among the rural population.^[5,9]

Decreased HIV prevalence among rural population in our study may be due to the awareness created among them by IEC campaigns and the Link workers scheme, which addresses HIV prevention and care needs of the high risk and vulnerable groups in rural areas by providing information on HIV, condom promotion and distribution and referrals to counseling, testing and STI services. Decreased HIV prevalence among rural population in our study may also be due to migration of rural population to urban places in search of livelihood.

With regard to level of education, this type of observation may be due to more number of attendees in literate group. This can also be due to the fact that, the knowledge about the sex and sexual behaviour which is imparted in the education system through adolescence education

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programmes, is misinterpreted at the individual level, thus increasing the prevalence rate among them.

As depicted in our study, the subjects having businesses as occupation may get easy money and indulge in some risk behavior which favors HIV transmission. The long distance truck drivers staying away from their families are a highly mobile group in whom multiple sex partners are quite common. So it may be presumed that the population in the study area is vulnerable for a rapid spread of infection due to its geographical location for regional, interstate and international trade with a high number of truck drivers moving through the area.

High number of positivity among the housewives is a matter of concern as it might be an indicator of increased HIV transmission in that particular area.

With regard to the pattern of risk behavior heterosexual contact was the commonest mode of HIV transmission (both in males and females), which is supported by the findings of other studies.^[5, 10] However, none of the women was working as a commercial sex worker. History of any risk factors was denied by 40.7% of subjects, especially by females. This may be again due to social stigma associated with the risk behavior. Transmissions by other modes were low with no much difference from other reports.^[10]

Transmission through blood transfusions, once a concern in many countries, has been eliminated in developed countries by routine screening of blood donations.^[11] In developing countries transmission through infected blood and blood products has yet to be eliminated. According to the annual report, use of infected blood and blood products accounts for 1% of the risk pattern, this is true with the findings of our study (0.6%).

Injection drug use (IDU) plays a critical role in HIV epidemic in various regions, particularly Asia and Southern Europe. This was true for Manipur and North-East India,^[11] where intravenous drug abuse is common but not for states like Karnataka, as clearly shown by this study (only one fell under this category).

Well documented HIV prevention strategies like needle exchange distribution, outreach to IDUs, peer education programs and social network interventions, that have reduced HIV transmission in developed countries are now being adopted in developing countries also.^[11]

Two transgender were also found positive in the present study. This may be due to the male counselor out reaching the high risk groups.

As the present study was conducted in ICTC of a medical college hospital, the results observed are subject to bias arising from the rate of reporting in the counseling and the testing center.

CONCLUSION: The people of Bengaluru city are highly vulnerable to rapid spread of HIV/AIDS due to its geographic location, rapid growth, more job opportunities and huge population migration from the neighbor high prevalence states. Increased HIV prevalence among the females, indicate that the present interventions must be strengthened to control HIV prevalence with a special focus on females. Intense IEC activities must be carried out to promote behavioral changes to the favorable directions.

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Variables	Male (n=161) (58.3%)	Female (n=113) (40.9%)	Transgender (n=2) (0.7%)
Age (years)			
<20	1(0.6)	7(6.1)	0(0)
20-30	32(19.8)	36(31.8)	2(100)
30-40	58(36.0)	43(38.0)	0(0)
40-50	51(31.6)	17(15.0)	0(0)
>50	19(11.8)	10(8.8)	0(0)
Marital status			
Married	132(81.9)	87(76.9)	0(0)
Single	23(14.2)	2(1.7)	1(50)
Widowed	2(1.2)	22(19.4)	0(0)
Divorcee	4(2.4)	2(1.7)	0(0)
Live in	0(0)	0(0)	1(50)
Place of residency			
Urban	119(73.9)	93(82.3)	2(100)
Rural	42(26.0)	20(17.6)	0(0)
Education			
Illiterate	34(21.1)	33(29.2)	0(0)
Primary school	28(17.3)	23(20.3)	1(50)
Secondary school	60(37.2)	37(32.7)	1(50)
College & above	39(24.2)	20(17.6)	0(0)

Table 1: Socio-demographic profiles of HIV positive subjects

Occupation	Male (n=161) (58.3%)	Female (n=113) (40.9%)	Transgender (n=2) (0.7%)
Unskilled worker	30(18.6)	14(12.3)	0(0)
semiskilled worker	22(13.6)	0(0)	0(0)
Skilled worker	10(6.2)	1(0.8)	0(0)
Business	33(20.4)	6(5.3)	0(0)
Service	29(18.0)	6(5.3)	0(0)
Driver	24(14.9)	0(0)	0(0)
Unemployed	10(6.2)	0(0)	2(100)
Students	3(1.8)	1(0.8)	0(0)
Housewives	0(0)	85(75.2)	0(0)

Table 2: Occupational status of HIV positive subjects

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Risk behavior	Male (n=161) (58.3%)	Female (n=113) (40.9%)	Transgender (n=2) (0.7%)
Heterosexual	156(96.8)	66(58.4)	2(100)
Homosexual	2(1.2)	0(0)	0(0)
Mother to child	0(0)	1(0.8)	0(0)
Blood transfusion	1(0.6)	0(0)	0(0)
Injecting drug use	1(0.6)	0(0)	0(0)
Unknown	1(0.6)	46(40.7)	0(0)

Table 3: Pattern of risk behaviour in HIV positive subjects

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