

# Awareness about Non-sexual Modes of Human Immunodeficiency Virus Transmission: A Cross-sectional Study from Tamil Nadu, India

Shankar Kanagasabapathy<sup>1</sup>, M Saleem<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Community Medicine, Meenakshi Medical College and Research Institute, Kanchipuram, Tamil Nadu, India, <sup>2</sup>Associate Professor, Institute of Community Medicine, Madurai Medical College, Madurai, Tamil Nadu, India

## Abstract

**Background:** The human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) epidemic appears to have stabilized in most regions of the globe. Even after all these years of multi-pronged health education campaign, there's still a dearth of awareness about certain aspects of HIV and AIDS. Most of the campaigns have targeted the high risk groups, such as the commercial sex workers, homosexuals, intravenous drug users, and truck drivers. In the majority of these campaigns, greater emphasis was given to educate the people on the sexual mode of transmission.

**Objective:** The objective of present study was to assess the current awareness about the non-sexual mode of transmission of HIV infection.

**Materials and Methods:** Present study was conducted in 4 Primary Health Centre areas in Vellore district of Tamil Nadu. A total of 400 adults from rural areas participated in the study. A pretested questionnaire was used to assess their awareness about HIV transmission.

**Results:** Majority of the study population (86%) knew that HIV is transmitted by sexual intercourse. Whereas, only 50% knew that it can be transmitted from an infected mother to child, and only 36% were aware of the transmission by sharing of syringes and needles. A difference in the awareness level was observed among males and females with regards to HIV transmission by certain non-sexual modes. This was found to be statistically significant ( $P < 0.001$ ).

**Conclusion:** In spite of all the efforts of various international, national, and state agencies, for more than two decades, the awareness level is not excellent. The messages regarding the sexual mode of transmission and condom usage for prevention has reached the masses, but the information about the other modes of transmission and prevention has not reached the common man to the extent of the former.

**Key words:** Human immunodeficiency virus, Non-sexual, Prevention, Transmission

## INTRODUCTION

AIDS, the acronym for acquired immune deficiency syndrome is a fatal disease caused by the retro virus known as human immunodeficiency virus (HIV). Two serological types of HIV has been identified and named as HIV-1 and

HIV-2. HIV-1 is more virulent among these two. Once a person is infected with HIV, he or she is infected for life.

The human transmission of the virus has been documented during the 19<sup>th</sup> or the early 20<sup>th</sup> century. Around 75 million people are infected around the world, and around 36 million have died. The most affected region in the world is the sub Saharan Africa, where 1 in every 20 adults is living with HIV infection.<sup>1</sup> Globally, the heterosexual route is the predominant route of transmission of the virus. Other transmission modes include unprotected penetrative sex between men, sharing of needles among intravenous (IV) drug users, and unsafe blood transfusions for injections.

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**Corresponding Author:** Dr. Shankar Kanagasabapathy, Department of Community Medicine, Meenakshi Medical College and Research Institute, Enathur, Kanchipuram - 631 552, Tamil Nadu, India. Phone: +91-9840107761. E-mail: shankarsalem@yahoo.com

In India, HIV infection was first detected in the year 1986.<sup>2</sup> Most of the HIV infections in India occur through heterosexual contact. The rest of the infection occurs among Homosexual (men having sex with men), IV drug users, etc. The epidemic appears to have stabilized in most regions of the globe. However, it continues to increase in some parts of Asia due to high rates of infections. In India, there is a steady decline in the number of AIDS related mortality since 2004, when the free anti-retro viral program was launched in the country.<sup>3</sup>

With the establishment of National Aids Control Organization (NACO) in India, there has been a significant improvement in the country. There has been an overall reduction in the HIV incidence in the country. The prevalence of HIV also varies between different states. Some states in India, including Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, Maharashtra, Nagaland, and Manipur have been reported to have a large number of HIV infected population in India. The AIDS task force in India, under the Indian Council of Medical Research and the National AIDS Committee, fought a multi-pronged campaign to conquer AIDS. As of the year 2009, the prevalence of HIV infection in adults was 0.31%.<sup>3</sup>

Even after all these years of multi-pronged health education campaign, there's still a dearth of awareness about certain aspects of HIV and AIDS. Especially in the rural areas, among the common man, holistic knowledge about HIV has not been disseminated, as most of the campaign has targeted the high risk groups, such as the commercial sex workers, homosexuals, IV drug users, and truck drivers. To quote an example, the India AIDS Initiative, an HIV prevention program which was funded by the gates foundation was implemented in the six states in India where the prevalence was high. This program focused on female sex workers, IV drug users, men who have sex with men, etc. Most of the emphasis was given on the sexual mode of transmission. Hence, the present study was conducted with the aim of assessing the knowledge of a rural adult population on various non-sexual modes of transmission of HIV and its prevention.

## MATERIALS AND METHODS

The present study was done as a cross-sectional study in Vellore district in Tamil Nadu. The district has a land area of around 6000 km<sup>2</sup>, bordering the state of Andhra Pradesh on one side. As per the 2011 census, the population was 3928106. The revenue district of Vellore is further sub divided into two health unit divisions for administrative purposes. The two Health Unit Divisions are Vellore and Tirupattur. The Vellore Health Unit division consists of

10 rural blocks consisting of 35 primary health centers. The present study was done in 4 randomly chosen primary health center areas in Vellore Health Unit division.

An informed consent was obtained from each individual who was willing to participate in the study. Those who did not consent to take part in the study were not included. A female interviewer was present when the questionnaire was administered to a female respondent. A total of 400 individuals participated in this study.

The study questionnaire was designed to elicit certain basic information regarding HIV/AIDS, with emphasis on modes of transmission and prevention. The questionnaire was pretested, and necessary modifications were done before administering on the study population. The data was tabulated and analyzed using SPSS version 17.0.

## RESULTS

The total of 400 adults were enrolled in the present study. There were 220 males and 180 females in the study population. The mean age of the study population was 46, with a minimum age of 23 and a maximum age of 65. When the education status of the subjects was taken into consideration, 60 subjects were illiterate, 284 have gone to some formal school, and 56 have completed college education (Figure 1).

The next important question was about their knowledge regarding the various modes of transmission of the disease. The participants were assessed about their awareness regarding the various modes in which HIV can be transmitted from one individual to another. A majority of them (86%) knew that HIV can be transmitted by sexual intercourse. Around 60% of them also knew that the infection can be transmitted as a result of a blood transfusion (Table 1).

When the respondents were questioned about the different modes of prevention of HIV, the majority of them (88%)

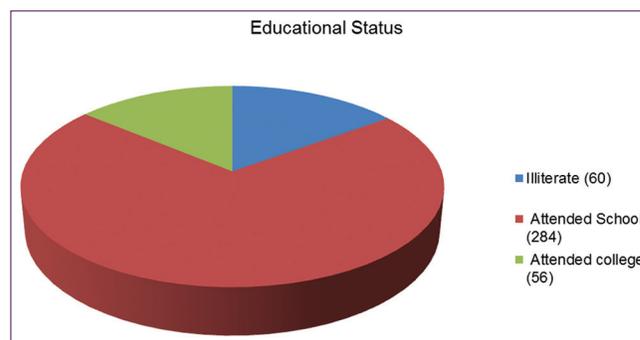


Figure 1: The educational status of the study population

knew that safe sex, i.e. using a condom has a protective effect. The knowledge about the other mode of prevention is given in Table 2.

When the individuals were asked about the source from which they obtained information regarding HIV transmission, majority respondents opined that they received most of their understanding about HIV/AIDS from the mass media. Other sources of information were friends, teachers, and health workers (Figure 2).

The next important question is, whether there is any sex difference with regard to the knowledge or awareness about the transmission of HIV. The present study found out that there is not much of a difference in the level of awareness regarding the heterosexual mode of transmission among men and women. However, there was a wide difference between males and females in the knowledge about HIV transmission by homosexual route, and by way of sharing needles or syringes. This difference was found to be statistically significant (Table 3).

The present study also highlights the prevalence of some common misconceptions regarding the transmission of HIV. Among the respondents, nearly 43% of them thought that HIV can be spread by sharing or eating from the same plate, and another 26% of the respondents were of the impression that HIV can be spread from one person to another while hugging each other.

## DISCUSSION

The present study was done in a sample of the adult population residing in selected primary health center areas of Vellore district in the state of Tamil Nadu. All the respondents had come from a rural background, and

the majority of them had at least school education. It was observed that though most of them had knowledge regarding the sexual mode of transmission of HIV, the awareness about the various non-sexual mode of transmission of HIV was significantly less, in spite of the fact that billions of rupees have been spent on HIV prevention and care in India in the last few decades.

The NACO through the National Aids Control Program has been making great strides in the control of HIV/AIDS spread in the country in the last few decades. The different phases of the National Aids Control Program, supported with internal and external funding from various

**Table 1: The awareness of the respondents regarding the transmission of HIV**

Mode of transmission of HIV	Awareness among the respondents (%)
As a result of heterosexual intercourse with an infected person	344 (86)
As a result of homosexual intercourse with an infected person	180 (45)
During blood transfusion by transfusion of infected blood	248 (62)
Sharing of syringes or needles by IV drug users	144 (36)
Mother to child	200 (50)

IV: Intravenous, HIV: Human immunodeficiency virus

**Table 2: The awareness among the respondents regarding the various modes of prevention of HIV**

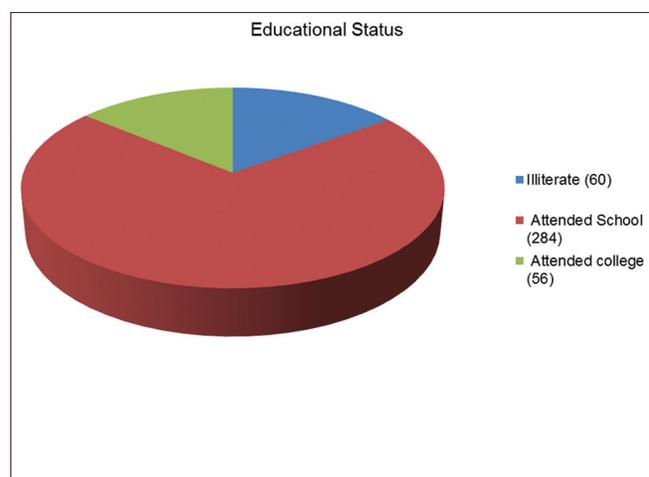
Prevention strategy	Awareness among the respondents
Being faithful to your partner	280 (70)
Using a condom	352 (88)
Safe blood	240 (60)
Not sharing needles or using disposable needles	206 (51.5)

HIV: Human immunodeficiency virus

**Table 3: The sex difference in the level of awareness regarding the modes of transmission of HIV**

Mode of transmission of HIV	Awareness among male respondents (n=220) (%)	Awareness among female respondents (n=180) (%)	$\chi^2/P$ value (df=1)
Heterosexual intercourse with an infected person	190 (86.4)	154 (85.6)	0.054/<0.900
Homosexual intercourse with an infected person	120 (54.5)	60 (33)	17.998/<0.001*
Transfusion of infected blood	148 (67.3)	100 (55.5)	5.769/<0.025*
Sharing of syringes or needles by IV drug users	99 (45)	45 (25)	17.188/<0.001*
Mother to child	105 (47.7)	95 (52.7)	1.010/<0.500

IV: Intravenous, HIV: Human immunodeficiency virus, \*Statistically significant



**Figure 2: The source from which the respondents received information about human immunodeficiency virus transmission**

government and non-governmental agencies, from across the globe, had various Health education campaigns to educate the common man about HIV/AIDS.

Some of the important IEC campaigns were targeted to motivate behavior change among the countrymen. One such example is the red ribbon express, which was an eight coach exhibition on a train, which traveled the length and breadth of the country. They had plenty of halt stations, where the public were allowed to visit the exhibits in the train. From the halt stations, exhibition vans and folk troupes were deployed to carry HIV/AIDS related messages to the rural areas. Apart from this, various multi media campaigns had been conducted. Blood safety campaigns, the establishment of red ribbon clubs in schools and colleges and condom promotion programs were also done. Condoms were available free of cost in most health establishments, and condom vending machines were installed in most public places.

In spite of all these activities at the national and state level, there is a lot to be desired as far as the awareness about HIV/AIDS is concerned, as identified in this study. Other studies also reflect a similar finding. In a study done by Meena *et al.*, the majority of the respondents were aware of the sexual mode of transmission of HIV and that condom usage can prevent the transmission.<sup>4</sup> In a study done by Kotech and Patel, in the slums of Vadodhra in Gujarat, more number of respondents had knowledge of the sexual mode of transmission of HIV than of the other modes of transmission.<sup>5</sup> In another study done by Singh *et al.*, in northern India 79.1% of respondents opined that heterosexual intercourse was the most common mode of transmission.<sup>6</sup>

A study done in a remote location in Jammu and Kashmir shows that the knowledge about HIV transmission and

prevention was very poor.<sup>7</sup> In yet another international study done in Laos, the awareness about the various modes of transmission of HIV/AIDS was significantly high.<sup>8</sup> That study was predominantly conducted among students.

## CONCLUSION

As already discussed, in spite of all these efforts by various international, national and state agencies, for more than two decades, the awareness level is not excellent. The messages regarding the sexual mode of transmission and condom usage for prevention has reached the masses, but the information about the other modes of transmission and prevention has not reached the common man to the extent of the former.

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