Knowledge Attitude and Awareness toward People Living with HIV/AIDS among Engineering College Students of Pondicherry, India

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Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: The human immunodeficiency virus (HIV) is a great global public health problem caused by a retrovirus that infects cells of the human immune system, destroying or impairing their function. In the early stages of infection, the person has no symptoms. HIV can be transmitted through unprotected sexual intercourse, transfusion of contaminated blood, through contaminated needles and between a mother and her infant. In 2017, globally, 36.9 million people are living with HIV and 940000 people died from HIV related causes. The total number of people living with HIV in India is estimated at 21.40 lakhs people in 2017.

Materials and Methods: A cross-sectional study was done among college students from engineering colleges in Pondicherry from April 2018 to September 2018. The selection of study subjects was done using simple random sampling. After getting informed consent from the individuals a pre-tested, semi-structured questionnaire was administered. Data were entered on
and analysed using Microsoft Excel spreadsheets. Descriptive statistics were used and results were expressed as proportions.

**Results:** The majority of the students, about 92.4% had heard about HIV/AIDS, about 92.4% of the participants were aware that HIV can spread through body fluids such as blood, sexual contact, urine. More than half 52.7% of students are aware that migrant workers, lorry drivers, commercial sex workers are high-risk groups for HIV/AIDS. 68.8% of students don’t know their HIV status. 65.2% were not willing to isolate HIV infected people from society.

**Conclusion:** There is an immediate need for more health education and awareness campaign among students about HIV/AIDS. The Ministry of Education found better methods to deliver the necessary information about HIV/AIDS through the Internet, social media and mobile applications, information hotlines, pamphlets and printed educational materials.

**Keywords:** Knowledge; awareness; HIV/AIDS.

1. **INTRODUCTION**

The human immunodeficiency virus (HIV) is a global public health problem and the disease is caused by a retrovirus that infects cells of the human immune system, destroying or impairing their function. Research indicates that HIV originated in west-central Africa during the early twentieth century [1]. AIDS was first recognized by the Centers for Disease Control and Prevention in 1981 [2]. In the early stages of infection, the person has no symptoms. However, as the infection progresses, the immune system becomes weaker, and the person becomes more susceptible to opportunistic infections. A person with HIV infection has AIDS when a person's immune system is too weak to fight against common infections and opportunistic infections [3], or the number of immune system cells (CD4) in the blood of an HIV positive person drops below a certain level [4].

The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS). It takes 10-15 years to develop AIDS syndrome, this syndrome represents the late clinical stage of infection with the HIV, which most often results in progressive damages to the immune and other organ systems, including the CNS [5]. This means that a person who carries the HIV is prone to many different illnesses leads to stage AIDS (third stage) and may die from diseases that are harmless to healthy people. Early diagnosis and treatment with an antiretroviral drug will suppress the virus and increase patient survival [6].

HIV is transmitted through unprotected sexual intercourse (anal or vaginal) [7], transfusion of contaminated blood, through contaminated needles (either due to sharing or iatrogenic) and between a mother and her infant during pregnancy, childbirth, and breastfeeding [8]. Individuals cannot become infected through ordinary day-to-day contacts such as kissing, hugging, shaking hands, or sharing personal objects, food or water [9].

In 2017, globally, 36.9 million people are living with HIV, 940000 died from HIV related causes [10]. The total number of people living with HIV in India is estimated at 21.40 lakhs HIV patients in 2017. It estimates a prevalence of 0.22% in the total population of 1.3 billion, India is estimated to have around 87.58 thousand new HIV infections in 2017 [11]. Young people (15-24 years old) are of international concern in the HIV/AIDS epidemic and are labelled “at-risk” groups [12]. Young women are especially vulnerable to HIV, 2.1 million adolescents were living with HIV in 2016 [13]. According to a UN report, this region is facing a “hidden epidemic” of HIV among adolescents. Prevalence is particularly high in large cities like Mumbai, Hanoi, Jakarta, Bangkok, Chiang Mai, and other urban areas [14]. This study was conducted to assess the knowledge of HIV among engineering college students and their attitude toward people living with HIV.

2. **MATERIALS AND METHODS**

A cross-sectional study conducted among 224 engineering college students of Pondicherry. The study period was from April 2018 to September 2018 (6 months). Persons above or equal to 18 years of age were included in the study. Considering 85% as prevalence from the previous study [15], 95% confidence interval with
5% absolute error and 10% non response rate, the sample size was calculated using the formula, \( N = 4pq/L \) [2]. The sample size has arrived at 224.

In Pondicherry, a totally of 16 engineering colleges, out of the 16 colleges, 6 colleges were selected by a simple random sampling method (lottery method). From that college using a simple random sampling method, each participant was individually approached. After getting permission from colleges and informed consent from the individuals and a pre-tested, semi-structured questionnaire was used for collecting information regarding HIV, a questionnaire prepared and validated based on modes of spread, modes by which they do not spread, prevention, attitude toward PLHA. The questionnaire had four sections. Section A dealt with the socio-demographic profile, section B had questions about knowledge, and section C had awareness and section D about the attitude towards AIDS patient. Data were entered on and analysed using Microsoft Excel spreadsheets. Descriptive statistics were used and results were expressed as proportions.

3. RESULTS

A total of 224 engineering students participated in this study. Among participants age group between 18-20 were 61 (27.2%), 21-24 were 95 (42.4%), 25 to 29 were 48 (21.4%) and above 30 were 20 (9%). Of the 224 participants, 114 were females (50.9%) and 110 participants (49.1%) were males. Most of them were Hindu 166 (74.1%), Christians 29 (12.9%), Muslims 24 (10.8%) and other 5 (2.2%).

Majority of the students 92.4 % had heard about HIV/AIDS. About, 22.8% of the students felt that there was no difference between HIV and AIDS and 17% of students had no idea about the difference between HIV/AIDS.

About 92.4% of the participants were aware that HIV can be spread through body fluids such as blood, sexual contact, urine, and 7.6% were not aware of the mode of transmission of HIV/AIDS. Among participants, 57.6% knew that HIV is transmitted from mother to child during pregnancy.

About 52.7% of students are aware that migrant workers, lorry drivers, commercial sex workers are high-risk groups of HIV/AIDS, 55.8% said that HIV infection is preventable,13.4% are HIV is not a preventable disease and 30.8% had no idea about the prevention.

About, 68.3% of students are fever, weight loss, chronic cough, chronic diarrhoea, skin problem as the symptoms of the HIV.79.9% of students said that there is the treatment for HIV infection.71% heard about world AIDS day, among them, 46.4% told December 1st is the world AIDS day. 81.3% did not know about toll-free number for HIV/AIDS infection. 68.8% of students did not know their HIV status.

Regarding the attitude towards people living with HIV about 53.1% of the students are willing to sit next to HIV infected persons. 46% of the students were willing to support and help if family members are infected by HIV.51.3% of students preferred separate schools for HIV infected children. 65.2% are not willing to isolate HIV infected people from society.

Among the students, 54.5% of the students were willing to do the HIV test. 54.9% were not willing to share food and drinks.53.6% of the students are the willingness to employ and work with HIV infected persons.

| Table 1. Socio-demographic characteristics of the participants (N = 224) |
|-----------------------------|---------------|--------------|
| Variables                  | N             | Percentage   |
| Gender                     |               |              |
| Male                       | 110           | 49.1         |
| Female                     | 114           | 50.9         |
| Age in Years               |               |              |
| 18-20                      | 61            | 27.2         |
| 21-24                      | 95            | 42.4         |
| 25-29                      | 48            | 21.4         |
| Above 30                   | 20            | 9.0          |
| Religion                   |               |              |
| Hindu                      | 166           | 74.1         |
| Christian                  | 29            | 12.9         |
| Muslim                     | 24            | 10.8         |
| Others                     | 5             | 2.2          |
4. DISCUSSION

In this study majority of the students have heard about HIV/AIDS. A study was done in the state of Andhra Pradesh, India by Chowdary, et al. [16] among engineering college students to find out the awareness of HIV/AIDS showed a slightly lesser result. This result is also higher than the knowledge of university students in Malasiya [17], this shows an effective advertisement for the public health department.

22.8% told that there is no difference between HIV and AIDS and 17% no idea about that, almost similar result was reported in school-going adolescents by Singh A et al to test their awareness regarding HIV/AIDS in Banaskantha district of Gujarat, India reported a lesser knowledge when compared to the present study13. 92.4% of the participants were aware that HIV can be spread through body fluids such as blood, sexual contact, urine, similar reports shows in the study done in Karachi among college students [18].

52.7% of students are aware of the high-risk groups of HIV/AIDS infection, this shows much better awareness, compare to across sectional study done among engineering college students in the state of Andhra Pradesh, India done by Vijaya Krishnan Ganesan reported similar results as the present study [14].

79.9% answered that there is treatment of HIV infection this shows misunderstanding about HIV infection, and 81.3% did not know about the free toll number for HIV/AIDS infection, this is important because now everyone has a smartphone, so the need of advisement about a toll free number and mobile app about HIV/AIDS among college student is very essential. The majority of them did not know their HIV status, which makes the need to program or steps towards addressing this issue.

Regarding the attitude toward people living with HIV, the results of this study, are still discriminatory. The majority of the students were willing to accept and support the HIV patient, but this was not adequate and still, some stigma persists.

5. CONCLUSION

This study showed a general picture of the students’ knowledge, awareness and attitudes towards HIV/AIDs in Pondicherry. Though the engineering college students had good knowledge, many misconceptions need to be addressed. However, the important finding of this study was the negative attitudes towards HIV/AIDS patients. Need for more health education and awareness campaign about HIV/AIDS among college students is more important. The Ministry of Education needs to find better methods to deliver the necessary information through social media sites and mobile applications, information hotlines, pamphlets, and printed educational materials. Such programs should focus more on eliminating or reducing those negative attitudes, which is an important step in the control of HIV/AIDS.

CONSENT

Informed written Consents were obtained from every college students.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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