Assessment and Comparision of HIV Awareness among Interns of a Private Group of Institutions in Bangalore

Monalisa[1], Aruna CN[2], Padma K Bhat[3], Jayachandra MY[4], Saumya Ojha[1], Manish Kumar[1]

ABSTRACT

Introduction: Human Immunodeficiency Virus (HIV), has become a global havoc to humanity. The first HIV/AIDS case in India was reported in 1986 among sex workers in Chennai. According to National AIDS Control Organization of India, the National adult (15–49 years) HIV prevalence is estimated at 0.26% (0.22%–0.32%) in 2015 with a prevalence of 0.30% among males and 0.22% among females[3]. According to the World Health Organization 2.5% of global HIV cases are due to occupational exposure among health care workers who are exposed directly to this deadly morbid condition. Hence, this study was aimed to assess the knowledge of HIV among health care workers.

Material and methods: The study was carried out among 200 interns (90 Dental, 70 Medical, 40 Nursing) of the respective streams of a private group of institutions in Bangalore using a pretested, self administered questionnaire. Participants, who gave consent and were present on the day of study, were included. Ethical approval was obtained from the Ethical review board of Rajarajeswari Dental College and Hospital, Bangalore. Statistical analysis included Chi-square test to investigate the significance of differences among the study groups ($p<0.05$). Data was analyzed using SPSS ver. 21 software.

Results: Medical interns exhibited good knowledge regarding the modes of transmission of HIV, followed by the Dental and Nursing interns**.**

Conclusion: This study demonstrated that there were deficiencies in the knowledge about HIV and that false beliefs existed among the nurses about the spread of HIV.

Keywords: Dental, HIV/AIDS, Interns, Medical, Nursing

INTRODUCTION

The acquired immunodeficiency syndrome (AIDS) epidemic has had a substantial impact on the health economy of many nations. Since the first AIDS cases were reported in the United States in June 1981, the number of cases and deaths among persons with AIDS increased rapidly during the 1980s followed by substantial declines in new cases and deaths in the late 1990s.[1] The Human Immunodeficiency Virus (HIV) which belongs to the family of retroviruses is the causative agent of AIDS (Acquired Immune Deficiency Syndrome). HIV dismantles the immune system of the body by attacking the T- Helper cells and thus preventing the stimulation of the B cells which produce antibodies. HIV was first identified in India among commercial sex workers in Chennai in 1986. Now, HIV infection is present in all the states and territories of India.[1]

Globally, the number of people living with HIV is estimated to be nearly 36.7 million (including 1.8 million children) as per the 2015 data. Nearly, 40% of new HIV infection was found among the age group of 15-24 years.[2] According to National AIDS Control Organization of India, the prevalence of AIDS in India in 2013 was 0.27, which is down from 0.41 in 2002. 2.3 million Indian people are estimated to be living with HIV/AIDS and estimated adult prevalence of 0.34% (0.25-0.43%).[2] National adult (15–49 years) HIV prevalence is estimated at 0.26% (0.22%–0.32%) in 2015. Adult HIV prevalence is estimated at 0.30% among males and at 0.22% among females.[3] Among the seven high prevalence States, Karnataka ranked fifth for the most number of people living with HIV with 2.5 lakh people living with AIDS in 2011 and a prevalence of 0.45% in 2015.[3,4]

The Health care profession demands a frontline caring role bringing them in close contact with patients' blood and other body fluids. And this puts them at risk of occupational exposure to HIV/AIDS and other blood borne infections. According to the World Health Organization 2.5% of global HIV cases are due to occupational exposure among health care workers. Such accidents are associated with a few, but pose a significant risk to health care professionals' health, career, and families and also to patients under their care.[5,6]

Hence, it is imperative to continue to gauge the level of HIV/AIDS knowledge among the Health care workers at regular intervals so as to provide feedback to health care planners for fine tuning of educational activities. With this background, a study was conducted to assess the level of awareness regarding HIV/AIDS among medical, dental and nursing interns of a private group of institutions in Bangalore.

MATERIAL AND METHODS

A cross sectional study was conducted among the interns of Medical, Dental and Nursing Colleges of a private group of institution in Bangalore. The study was carried out among 200 interns (90 Dental, 70 Medical, 40 Nursing) of the respective streams. The study was aimed to evaluate the awareness of HIV and its comparison among the Medical, Dental and Nursing interns.

The study was conducted in the year 2015, for the duration of 2-3 months. Ethical Clearance was obtained from the ethical review board of Raja Rajeswari Dental College and Hospital, Bangalore. The study participants were drawn using a convenient sampling method, which included interns from the Medical, Dental and Nursing Colleges of a private group of Institutions of Bangalore. Permission from the respective authorities of

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these colleges was obtained prior to the study. The inclusion criteria for the study were participants who were present on the day of study and who gave written informed consent, those who were not present or did not give consent were excluded.

A pretested and self administered, closed ended questionnaire consisting of 35 questions was administered to elicit information regarding demography, source of information regarding HIV/AIDS, knowledge on mode of spread of HIV, ways of protection against HIV, chances of contracting other diseases from an HIV infected patient, post exposure prophylaxis and right to refuse treatment to an HIV/AIDS patient. Each participant was given 15 minutes to read, understand and answer the questions.

Statistical analysis included Chi-square test to investigate the significance of differences among the study groups. Data was analyzed using SPSS ver 21 software.

RESULTS

Out of total 200 participants, 90 students were from the Dental, 70 from Medical and 40 from Nursing stream. Among all the participants, majority had heard about HIV/AIDS at the age of 12 years. All the participants responded unanimously to being aware of the ways to protect oneself against HIV**.** All (100%) the study participants were of the opinion that there is a cure for HIV/AIDS and there are special groups which are at risk of contracting HIV more than others.

Among the Medical and Dental interns, none of the participants were willing to be tested for HIV, while all (100%) the Nursing interns wanted to get tested for HIV.

Except the nursing interns, all the participants were of the opinion that health care personnel act as a medium of HIV transmission and they would take additional protective measures while attending an HIV positive patient since they are at high risk of contracting blood borne viral diseases.

Among the study participants, all (100%) the Dental and Nursing interns were of the opinion that Health Care Workers are at risk of contracting HIV infection more than any other viral diseases in the work place, while Medical interns had the contradictory opinion**.** The Dental (100%) and Nursing (100%) interns were of the opinion that they are at risk of contracting other diseases from an HIV patient, like TB, while all (100%) the Medical interns had difference in opinion on this regard**.** All the participants were aware of Post Exposure Prophylaxis**.** It was noted that 84% of Medical, 86% of Dental interns knew the difference between HIV and AIDS while only 56% of the Nursing interns claimed to know the difference. The Dental and Medical interns believed that Post Exposure Prophylaxis reduces the risk of HIV transmission if taken immediately. The Nursing interns were of the opinion that even an immediate post exposure prophylaxis does not reduce the risk of HIV**.** Among the study participants, Dental (25%) interns were of the opinion that Health care professionals should have the right to refuse treatment to HIV patient, while the Medical (100%) and the Nursing (87%) interns had a differing opinion on this regard. All the participants (100%) believed that their knowledge regarding the transmission of HIV was adequate.

Medical interns exhibited good knowledge regarding the modes of transmission of HIV, followed by the Dental and Nursing interns**.** Data regarding these variables have been elicited in the figures 1 and 2.

DISCUSSION

In India, the Health Care Professional courses includes attending the patients in the out patients departments and wards. It is during the tenure of internship that all the undergraduates of Dental, Medical and Nursing streams are exposed to the maximum number of patients and are subjected to implement their theoretical knowledge into practical service. This requires proper infection control measures to avoid occupational exposure of blood borne diseases that have been advocated by CDC in this regard. In spite of these measures, Health Care Professionals are being exposed to certain harmful diseases during their practice. This study was conducted to assess and compare the knowledge of Dental, Medical and Nursing interns of a private group of institutions in Bangalore regarding HIV/AIDS.

The results of the study revealed several startling facts regarding the knowledge and attitude of the interns towards HIV/AIDS. It was found out that the Medical, Dental and Nursing

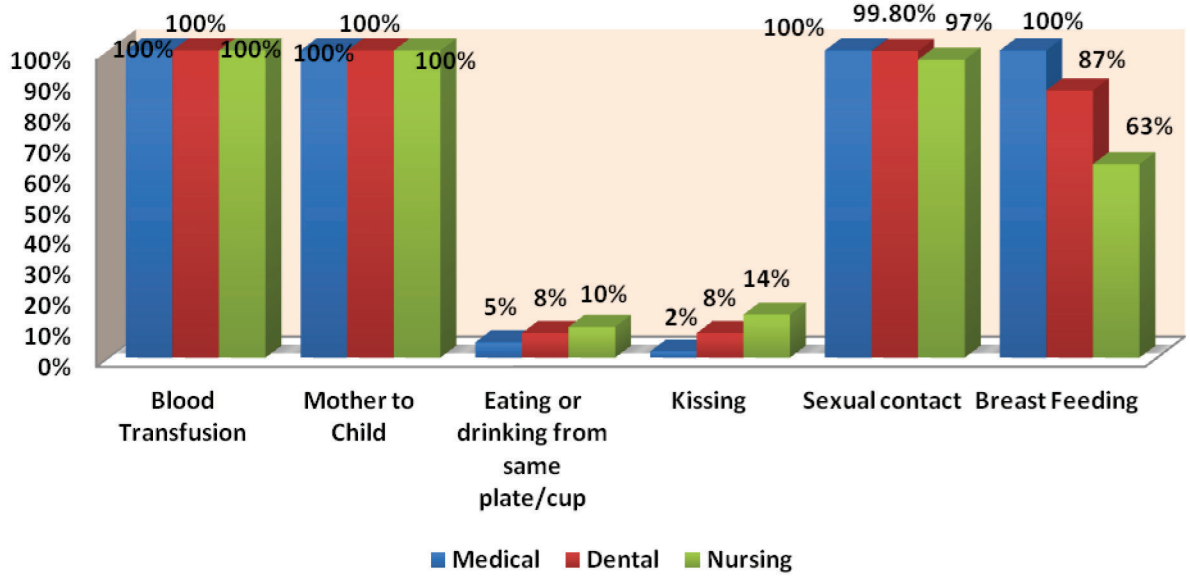

Figure-1: Responses to modes of HIV Transmission

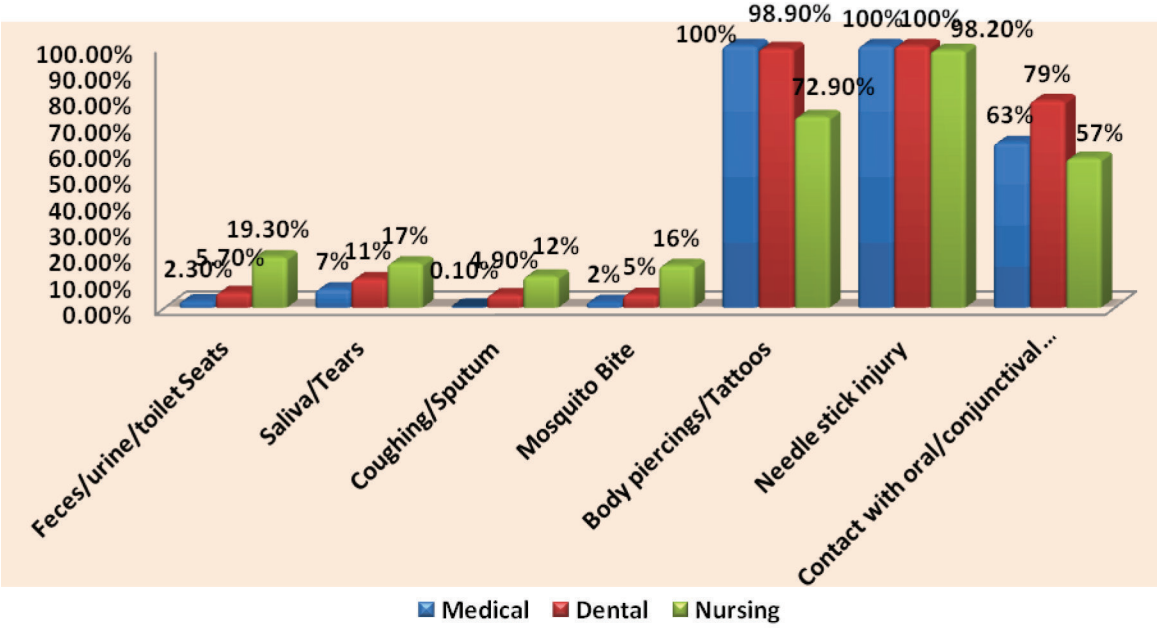

Figure-2: Responses to Modes of HIV Transmission

interns showed moderate knowledge with respect to modes of HIV transmission. A similar findings was reported in studies conducted by Patil et al[7] on Dental students, Sadeghi M et al[8] among Iranian dental students, Ryalat et al[9] among Jordanian dental students, Verma RK et al[10] on MBBS students in Malaysia and Taher E and Abdelhai R[11] on nursing students in Egypt.

The number of participants who knew the difference between HIV and AIDS in this study was in accordance to the study conducted by Cynthia AS et al[5] on medical and non medical undergraduates and Ruchi S et al[12] on health care students in Haryana. All the interns who participated in this study were aware that HIV spreads through blood transfusion. A similar finding was reported by Cynthia AS et al[5] where 94% medical undergraduates were in affirmation. The study participants demonstrated good knowledge of Vertical transmission of HIV (from mother to child). This finding concurred with the findings of Cynthia AS et al[5], Ruchi S et al[12] and John AR et al[13] where around 95% of the medical undergraduates were of the similar opinion.

There exist several misconceptions regarding HIV infection and its etiology which arise from different sources, from simple ignorance and misunderstandings to misinformation propagated by individuals and groups. HIV cannot spread through casual contact with an HIV infected individual. One cannot be infected by eating with an HIV infected person from the same plate/cup, kissing, using the same toilet, cough/sputum or Saliva/tears of an HIV patient, or from mosquito bites. In the present study it was found that around 5%-8% of Medical and Dental, and 15-20% of the Nursing interns were in agreement with spread of HIV by the above mentioned modes which was in concordance to the study conducted by Achappa B et al[2] and Kermode M et al[14], who found that a very large population of nurses had the misconception that HIV is transmitted by the above mentioned modes. This indicated a huge gap in knowledge on the transmission of HIV and on the dire need for training of nurses in this regard. A study conducted by Patil et al[7] on Dental undergraduates revealed that majority of them feared the risk of HIV transmission through saliva and aerosols.

HIV has been isolated from breast milk, implicating breast-feeding as a means of transmission. In the present study, all the Medical interns responded in affirmation to breast feeding as an etiology to HIV, while 87% of Dental and only 63% of Nursing interns agreed to the same. A study conducted by Cynthia AS et al[5] revealed that 77% medical undergraduates were of the similar opinion. Another study conducted by Kermode et al[14] on Health Care Workers in Rural India, revealed that 25% of the Health Care Workers were unaware that HIV could be transmitted through breast feeding. By increasing the knowledge of perinatal transmission from mother to child via breast feeding among nurses, the quality of the patient care can be substantially increased and appropriate advice to the mothers and also the good health of the babies can be ensured.

Infectivity estimates for body fluids like blood, semen, pre-seminal fluids, rectal and vaginal fluids are larger than for other modes of HIV transmission. In the present study, almost all the Medical, Dental and Nursing interns correctly answered that HIV could spread by sexual contact. This finding corroborated with the findings of Cynthia AS et al[5] where 94% medical undergraduates were of the same opinion. Other studies done by Patil et al[7], Ruchi S et al[12] and Kermode et al[14] also present similar results.

The acute physiological effects of a needlestick injury is the percutaneous exposure to HIV infected blood. Although the overall risk of occupational infection after a needle stick injury with a hollow needle or a needle contaminated with HIV-infected blood is estimated to be 0.3%[15], individual risk is mediated by a range of factors including the prevalence of HIV in the patient population, nature and number of exposure. Almost all the interns of the three streams believe it to be a mode of HIV transmission. Similar results have been described in studies by Mashoto et al[16], Patil et al[7] and Kermode at al[14] on health care workers in rural India. Tattooing and piercing both involve the use of needles to pierce the body, either in the form of an intra-dermal ink injection or a deeper needle penetration

during piercing. Only 72% Nursing interns were of the opinion that tattoo and body piercings cause HIV while all of the Medical and Dental interns answered in affirmation. Kermode at al[14] in his study on health care workers in rural India found that around 74% were of the opinion that tattoos can spread HIV.

Almost all the Dental and Nursing interns were of the opinion that health care workers should be tested against HIV while the Medical interns had a contrary opinion. Almost all the participants believed that there are special groups of people who are susceptible to HIV infection and such people can be identified by their appearance. The participants also felt it is necessary to take extra infection control precautions when caring for patients with HIV. This was in accordance with the studies carried out by Cynthia AS et al[5], Patil et al[7], Kermode et al[14] and Mashoto et al.[16] All the participants advocated the need of testing every patient for HIV/AIDS. A study conducted by Kermode et al[14] revealed that a high proportion of Health care workers felt that all surgical patients should be routinely tested for HIV infection, presumably to identify those patients requiring precautions. This finding was supported by the study conducted by Lal P et al[17] on nursing students.

Majority of the participants in our study were of the opinion that there are ways to protect you from HIV infection which was supported by the findings of studies conducted by Ruchi S et al[12] and Cynthia AS et al.[5] Almost all the participants were of the opinion that there are medications available to cure HIV. This was a relatively good indicator of the knowledge of interns as compared to the findings from studies conducted by Cynthia AS et al[5] and Lal P et al[17] where around 80% of the participants were in agreement with this fact. Potential for discrimination against HIV positive patients was suggested by the fact that all the Dental interns were of the opinion that they should have the right to refuse care to HIV patients while the medical and Nursing interns differed with them over this thought. A study conducted by Acahppa B et al[2] revealed that around 15% nurses said that they should have the right to refuse care to HIV patients which was in acceptance with the studies conducted by Kermode et al[14] on Health care workers and Lap P et al[17] on nursing students.

All the participants unanimously answered to know about Post Exposure Prophylaxis and that it can reduce the risk of HIV if taken immediately. HIV PEP is the prescription of one or more antiretroviral drugs to reduce risk of transmission of HIV following a known or possible exposure. Zidovudine has been recommended as the first drug of choice in all PEP regimens. As combination regimens have been proved superior to single drug in reducing the viral load, Lamivudine is recommended as the second agent for PEP because it is active against many Zidovudine resistant HIV strains without substantial increase in toxicity. Hence, Zidovudine and Lamivudine are commonly given as basic regimen. Addition of third drug, i.e. Indinavir or Nelfinavir (expanded regimen) is done for exposures that pose an increased risk for transmission or where resistance to the other drugs for PEP is known or suspected. Indinavir is preferred as third drug because of its increased bioavailability and less toxicity during short term use. In India, these drugs are available free of cost at all ART Centers and Integrated Counseling and Testing Centers.[18] Similar response is reported by Agaba et al[19] in Nigerian family physicians and Chacko and Isaac[20] in medical interns. Significantly lower response was seen in a study by Khan et al[21] in medical staff, Chen et al[22] in junior doctors and Chogle et al[23] in surgical and anesthetic residents.

From the study it was acknowledged that although the interns had a significantly good knowledge regarding HIV/AIDS, which is not a potential indicator of the willingness of the health care professionals to treat HIV patients. Majority of the participants felt that risk of HIV contagion from needle stick injury, saliva, blood and bodily fluids is high and this is the reason of their refrain from treating HIV patients. This worry of occupational exposure may be the reason for them to advocate the right to refuse care to HIV patients. Therefore, there is a need to incorporate problem-based learning that includes small experimental groups or affective component, into the existing education system. Also, incorporating psychological aspects of treating HIV/AIDS patients in the curriculum can be an effective method to improve the attitude of students the stigma of HIV/AIDS and sensitizing them to be sympathetic.

This study was based on a self-administered closed ended questionnaire to assess the knowledge of interns regarding HIV. The validity of information in self-reports may be affected by social desirability and recall bias. Also, due to the researcher's level of imposition, the socially desired behaviours could have been over-estimated or underestimated. Since convenient sampling was done in this study, the degree of extrapolation is limited.

CONCLUSION

HIV/AIDS has alarmingly emerged as an occupational hazard among health care workers worldwide. As an old age adage which says "prevention is better than cure" the health care profession needs to be fully armed to combat this situation and the first step towards its prevention is precaution. During their academic years the health care professionals are taught how to treat patients with different kinds of diseases. It is during their internship that their theoretical knowledge is brought into practice and they are exposed to various life threatening contagious diseases. Therefore having appropriate knowledge is of utmost importance. Keeping this in mind, the following study was conducted to assess and compare the knowledge of HIV/AIDS among interns of a private group of institutions in Bangalore.

From the present study it was found that although the overall knowledge of students about HIV/AIDS was adequate, there were inadequacies in terms of modes of HIV transmission. Though the knowledge was appropriate students' attitude towards the care of HIV positive patients was negative. The results indicate that the Nursing students are not well prepared to treat HIV/AIDS patients and are not sympathetic towards this group of patients when compared to their contemporary specialties. Nursing students must therefore be made aware of and should understand the importance of treating HIV/AIDS patients. This can be achieved by proper education, regarding its ways of transmission, range of systemic and oral manifestations, treatment and monitoring of the condition and making the students more sensitized towards the care of HIV patients.

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