

Assessment of knowledge about post exposure prophylaxis of HIV among medical, nursing and paramedical students in hospital and laboratory practice

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ABSTRACT

Background: India has 2.1 million of people living with HIV, and places in third-largest population of people infected with the HIV after South Africa and Nigeria. It is thus important for health care providers including medical, nursing and paramedical students to have adequate knowledge on PEP for HIV to protect themselves prior to starting their life long career.

Methods: Cross-sectional study was conducted among 200 medical, nursing and paramedical students in Tirunelveli medical college from December 2016 to February 2017. A pre-designed questionnaire was used to collect data. Results were summarized in percentages and presented in tables.

Results: A total of 96 (48%) males and 104 (52%) females responded in the study. Though many (87%) had heard about PEP, just 31 (15.5%) had received formal training on PEP for HIV. Only 81 (40.5%) knew the ideal PEP regimen and 88 (44%) knew the correct drug regimen. The majority 196 (98%) considered PEP was important and significant 178 (89%) considered themselves to be at risk of acquiring HIV at work, with 46 (23%) having experienced an exposure in the past. Of those exposed, only 21 (45.7%) received PEP.

Conclusions: This study shows that knowledge, attitude and practice towards PEP for HIV is inadequate. A formal PEP training centre with proper guidelines is recommended for medical, nursing and paramedical students.

Keywords: HIV, Knowledge, Post exposure prophylaxis (PEP), Students

INTRODUCTION

Post exposure prophylaxis (PEP) refers to the use of short term antiretroviral drugs to reduce the risk of HIV acquisition.¹ Indeed, it may require 3 days from exposure for the virus to be detected in lymph nodes, and up to 5 days in blood.^{2,3} This offers a short window of opportunity during which, HIV acquisition following exposure can be prevented through PEP, which inhibits viral replication and halts the irreversible establishment of the infection.⁴

Whilst most studies on the efficacy of PEP are derived from animal models, retrospective data from prevention of mother-to-child transmission (PMTCT) studies and

occupational exposure support the efficacy in human subjects and also among health care providers in Europe and the U.S.^{1,5,6} Health care providers are at risk of occupational HIV acquisition worldwide with 3/1000 injuries resulting in HIV transmission after percutaneous exposure from an HIV infected patient in health settings.⁷⁻⁹ Several studies have explored knowledge on PEP for HIV among healthcare providers as a whole, nurses, medical doctors, surgical residents, midwifery students, medical interns and dental students.¹⁰⁻¹⁹

WHO recommends PEP use for both occupational and non-occupational exposures and for adults and children.²⁰ Occupational exposure refers to exposure to potential

blood-borne infections (HIV, HBV, HCV) that may occur in health-care settings during performance of job duties. PEP refers to comprehensive medical management to minimise the risk of infection among health-care workers (HCWs) following the potential exposure to blood-borne pathogens (HIV, HBV, HCV). This includes counselling, risk assessment, relevant laboratory investigations based on informed consent of the source and exposed person, first aid and depending on the risk assessment, the provision of anti-retroviral drugs for four weeks, with follow up and support.²¹

Medical, nursing and paramedical students form an integral part of the health care team and are at risk of acquiring HIV or other blood borne pathogens during their hospital placements.²² They are working in health-care setting and they are potentially exposed to infectious materials such as blood, tissue, specific body fluids, medical supplies, equipment, or environmental surfaces contaminated with these substances. They are frequently exposed to occupational hazards through percutaneous injury such as needle stick or cut with sharps, contact with the mucus membrane of eyes or mouth of an infected person, contact with non-intact skin exposed with blood, or other potentially infectious body fluids.²³

The medical, nursing and paramedical students are usually extremely busy and overburdened in a busy and tertiary care hospital. Thus, personal protection may not always remain a priority for them and they may also have constraints of resources for prevention of occupational exposures, such as hand gloves. Thus, they are very vulnerable to infections mediated by blood and blood products.²⁴

India has 2.1 million of people living with HIV, and places in third-largest population of people infected with the HIV after South Africa and Nigeria.²⁵ It is thus important for health care providers including medical, nursing and paramedical students to have adequate knowledge on PEP for HIV to protect themselves prior to starting their lifelong career.²⁶

Providing relevant information on PEP for the students would help to prevent the transmission of HIV, provide epidemiological data, identify unsafe practices, and reduce anxiety, and/or increase staff retention and productivity. However, studies have shown that there is an information gap in the health care setups. For instance, a study done in Governmental Health Institutions in Jimma zone and Jimma City in Ethiopia in 2008 indicated 81.6% of Health Care Workers exposed did not use post-exposure prophylaxis.²⁷

Thus, this study was undertaken to assess knowledge, attitude, and practice about HIV post exposure prophylaxis among the medical, nursing and paramedical students in hospital and laboratory practice in Tirunelveli Medical College Hospital, Tirunelveli.

METHODS

It was cross sectional, questionnaire based study. Population of the study was Medical Students, Interns, nursing students and paramedical students. The study was carried out at Tirunelveli Medical College Hospital, Tirunelveli for about 3 months from December 2016 to February 2017.

Inclusion criteria

- Final year MBBS students
- Interns
- Final year nursing students
- Final year DMLT students

Exclusion criteria

Those who were not willing to participate were excluded.

Methodology

Those who fulfilled the study criteria were enrolled after obtaining a written informed consent. The purpose of the study was clearly explained and confidentiality of the participants was ensured. The survey was carried out using a predesigned questionnaire. There were 21 questions in the questionnaire (11 Questions to assess Knowledge, 5 for attitude and 3 for practice). Data were analysed and presented as percentages.

Scoring of knowledge, attitude and practice

All questions, with “Yes” (for correct answers) or “No” (for incorrect answers) response, were prepared to assess the respondents about PEP for HIV

Data analysis

Statistical analysis was done using SPSS version 20 computer software. Results were summarized in frequencies and percentages and presented in tables.

RESULTS

A total of 200 students (50 medical students, 50 interns, 50 nursing students and 50 DMLT students) were assessed regarding their knowledge, attitude and practice about post exposure prophylaxis of HIV using a predesigned questionnaire. Among the study participants, 96 (48%) were males and 104 (52%) were females.

Overall study participants

- Majority, 174 (87%), of the participants of the study had heard about PEP of HIV.
- Textbooks, 118 (59%) were the major source of knowledge.
- Those who had formal training was 31 (15.5%).

Knowledge about PEP of HIV

- 153 (76.5%) knew when to initiate PEP for HIV
- 81(40.5%) and 88 (44%) knew ideal HIV-PEP regimen and drugs used in PEP respectively.
- 134 (67%) of the study participants knew the duration of PEP.

Attitude about PEP for HIV

- Majority, 196 (98%) and 191 (95.5%), agreed on the importance of PEP for HIV and the availability of PEP guidelines in their work place.
- 153 (76.5%) of them had strong belief that HIV-PEP can reduce the probability to be infected
- 104 (52%) of the respondents agree that PEP prevents further infection.

Table 1: Sources of knowledge.

Questions	Frequency, n (%)				
	MBBS Student	Intern	Nursing student	DMLT Student	
Heard about PEP	50 (100%)	50 (100%)	40 (80%)	34 (68%)	
Source of knowledge	Newspaper	2 (4%)			
	Textbooks	41 (82%)	44 (88%)	23 (46%)	
	Journal	2 (4%)			
	Television	5 (10%)			
	Ward rounds		6 (12%)	17 (34%)	24 (48%)
	PEP training				
Can't remember			10 (20%)	16 (32%)	
Number of persons who had training on PEP	4 (8%)	23 (46%)	2 (4%)	2 (4%)	

Table 2: Attitude about PEP for HIV.

Questions	Frequency, n (%)			
	MBBS student	Intern	Nursing student	DMLT Student
PEP is important	49 (98%)	49 (98%)	50 (100%)	48 (96%)
PEP training is important for creating awareness in work areas	47 (94%)	49 (98%)	49 (98%)	50 (100%)
PEP guideline in work areas	44 (88%)	49 (98%)	49 (98%)	49 (98%)
PEP reduces likelihood of being HIV positive	36 (72%)	42 (84%)	39 (78%)	36 (72%)
PEP prevents further infection	28 (56%)	28 (56%)	28 (56%)	20 (40%)

Exposure and practices regarding PEP for HIV

- 178 (89%) considered themselves to be at risk of HIV acquisition at their work place.
- 46 (23%) had exposed to HIV risky conditions at work place occupational exposure (Figure 1).
- Among the exposed, 21 (45.6%) of the study participants had taken PEP (Figure 2).

Comparing the different study groups

Knowledge about PEP of HIV

While comparing the knowledge of PEP in different study groups (Figure 3), there is a statistical difference between the groups (P value = 0.001). Among all the participants, interns had better knowledge about PEP of HIV followed by MBBS student, nursing student and DMLT student. There was no statistical difference among study groups in knowledge about HIV PEP regimen (P value = 0.095).

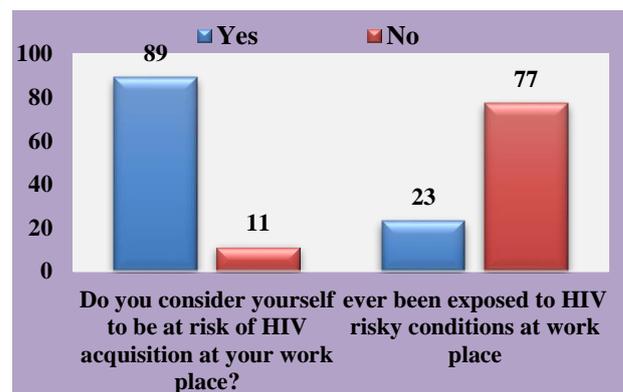


Figure 1: Exposure and practices regarding PEP for HIV.

Attitude about PEP for HIV

Regarding the attitude about PEP for HIV, 12% of MBBS Students disagreed with PEP guideline implementation in

work areas compared to the other study groups (P value = 0.033). There was a poor attitude among DMLT students about PEP for HIV compared to the other groups (Table 2).

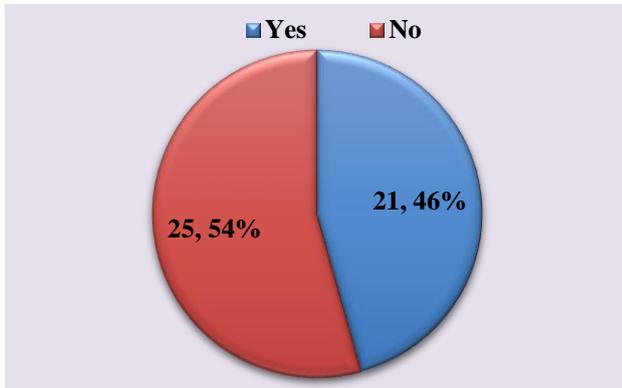


Figure 2: Took PEP after exposure.

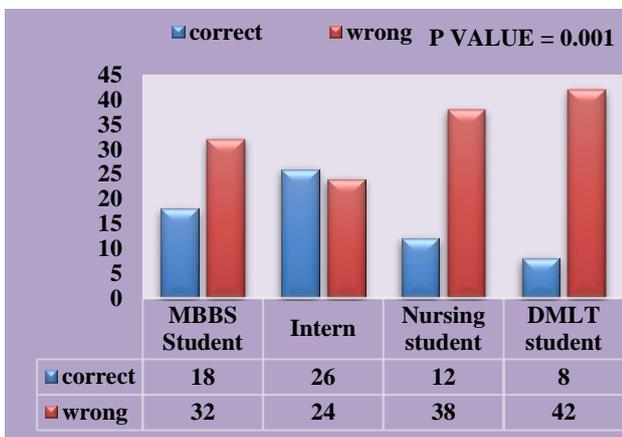


Figure 3: Knowledge about PEP of HIV.

DISCUSSION

This study assessed the knowledge, attitude and practice towards PEP for HIV among medical, nursing and laboratory students who were directly involved in caring patients in Tirunelveli medical college Hospital, Tirunelveli.

According to WHO, “Post-exposure prophylaxis” (PEP) is an emergency short-term antiretroviral treatment to reduce the likelihood of HIV infection after potential exposure, either occupationally or through sexual intercourse. PEP consists of counselling, laboratory tests and or medication. Within the health sector, PEP should be provided as part of a comprehensive universal precaution package that reduces staff exposure to infectious hazards at work. The recommended Standard for PEP entails commencing treatment within 1 hour of potential exposure without exceeding 72 hours’ post-exposure.

The proportion of knowledgeable participants on when to start PEP for HIV is 76.5%. Therefore, if the remaining

23.5% of the respondents exposed for HIV risky conditions, they might take PEP after very long period of time so that they will be important sources of transmitting HIV.

Poor attitude among DMLT students shows the need for HIV-PEP training. PEP treatment has been shown to reduce the risk of HIV infection by 81%.²⁸ It has abundantly been demonstrated in the literature, that there is poor implementation of PEP among medical doctors and other Health Care Workers across various countries, especially in the developing countries where protective supplies are limited and the rates of HIV infection in the patient population are high.²⁹⁻³¹

Out of the exposed, 54.3% of them didn’t take PEP (Figure 2). This is worrisome, because medical, nursing and as paramedical students are expected to know better and as advocates of preventive medicine, should practice what they preach. This fact alerts that the practice of PEP for HIV in the study area needs improvement. The challenge therefore, is to increase the practice of HIV- PEP and the training to recognize and appreciate the risk involved in accidental exposure and to completely embrace standard precaution and HIV-PEP in the workplace.

Limitations

Mutual influence among the students could not be ruled out.

CONCLUSION

The study revealed that the knowledge and practice among medical, nursing and paramedical students about PEP of HIV was inadequate. But the overall attitude towards PEP was positive. Availability of a formal PEP training centre with proper guidelines is recommended to enhance the utilisation of PEP amongst medical, nursing and laboratory students.

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