



Original Article:

Impact of Educational Intervention Measures on Knowledge regarding HIV/ Occupational Exposure and Post Exposure Prophylaxis among Final Year Nursing Students of a Tertiary Care Hospital in Central India

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Citation: Dixit S, Khatri AK, Taneja G, Saroshe S, Baghel SS, Jaiswal S, Soni S, Sengar SS. Impact of Educational Intervention Measures on Knowledge regarding HIV/ Occupational Exposure and Post Exposure Prophylaxis among Final Year Nursing Students of a Tertiary Care Hospital in Central India. *Online J Health Allied Scs.* 2009;8(4):6

URL: <http://www.ojhas.org/issue32/2009-4-6.htm>

Open Access Archives: <http://cogprints.org/view/subjects/OJHAS.html> and <http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: Oct 2, 2009; Accepted: Nov 18, 2009; Published: Apr 30, 2010

Abstract:

Amongst the different Health Care Personnel nurses are at a greater risk of being accidentally exposed to HIV and other Blood Borne Pathogens. The present study was conducted among 50 final year nursing students of a Medical College Hospital to assess the knowledge regarding HIV, occupational exposure and Post Exposure Prophylaxis (PEP) among the students and analyses the impact of educational intervention measures on the issues amongst the study subjects. A Pre-designed and Pre-tested semi-structured questionnaire was used to evaluate the level of knowledge before and after educational intervention sessions. Knowledge regarding risk of transmission of HIV by needle-stick injury and body fluids against which universal precautions were mandatory increased by 72% following the intervention sessions ($\chi^2 = 53.202$, $p < 0.001$). 72% and 36% respondents correctly knew the duration within which to start PEP and the drugs available for PEP, post educational sessions 98% and 96% students were aware of it: the difference being statistically significant ($\chi^2 = 11.294$, $p < 0.001$) and ($\chi^2 = 37.748$, $p < 0.001$) respectively. The mean pre-intervention score was 8.32; mean post-intervention score was 14.40: statistical analysis showed the results to be significant ($t = 13.857$, $p < 0.001$). The study reflects that there is a dearth of knowledge among the study group. Incorporating the concerned issues in the academic curriculum to provide the students with adequate knowledge and information during their formative years is needed.

Key Words: Nurses, Occupational exposure, Post Exposure Prophylaxis

Introduction:

Occupational exposure to Blood or other body fluids presents a small but definite risk of transmission of Human Immunodeficiency Virus (HIV) and other Blood Borne Pathogens.(1,2) Worldwide the first case of documented seroconversion after a

specific occupational exposure to HIV was reported in 1984 (3) and an approximate number of one thousand cases occur each year due to accidental exposure.(4) Among various groups of Health Care Personnel (HCP), nurses have a greater risk of being exposed to needle stick and other occupational injuries. Drexler, H et al in a study reported that approximately half of nursing students have experienced an exposure to Blood and Body fluids during the final two years of study.(5) The present study assesses the knowledge regarding HIV, occupational exposure and Post Exposure Prophylaxis (PEP) among nursing students and analyses the impact of educational intervention measures on the issues amongst the study subjects.

Methodology:

The study was conducted among final year BSc. nursing students of Maharaja Yaswantrao Hospital, Indore which is the biggest public health care setting in the state of Madhya Pradesh, India and is attached to MGM Medical College Indore. Permission was obtained from the Superintendent of the Hospital and the Principal of the Nursing College before initiation of the study. The entire class of 50 students provided consent to participate in the study; which was conducted over a period of three months (October – December 2008). Pre-designed and Pre-tested Semi-structured questionnaire was used to evaluate the existing level of knowledge on HIV, Occupational Exposure and PEP among the study participants. Following the initial assessment an Educational Intervention Programme was conducted among the students using posters, pamphlets, Audio-visual aids and group discussions by four Undergraduate students of the Department of Community Medicine, MGM Medical College, Indore. The intervention sessions focused on HIV epidemiology, risk factors, routes of transmission, chances of occupational exposure, factors associated with exposure, the exposure codes, the protocol for PEP and adequate

and timely use of PEP. Post-interventional assessment was performed among the study participants using the same questionnaire one month after the educational session. A total of 19 questions were included in the questionnaire: each question carried one mark with no negative marking. Pre and post intervention scores were analyzed using SPSS version 17 and appropriate statistical tests applied to detect improvement in the level of knowledge (if any).

Results:

All the participants were female, in the age group of 19-20 years. Everyone in the study group was aware that HIV is a virus. The participants were asked to expand some commonly used abbreviations like HIV, AIDS (Acquired Immunodeficiency Syndrome), ART (Anti Retroviral Therapy), Prevention of Parent to Child Transmission (PPTCT), O.I (Opportunistic Infection) and PEP. The increase in awareness for HIV following educational intervention was 24%, which was statistically significant ($\chi^2 = 6.25, p = 0.012$), for O.I the awareness level increased by 64% ($\chi^2 = 44.71, p < 0.001$) and a 28% increase was observed for PEP ($\chi^2 = 9.265, p = 0.003$). 90% of the participants knew of the routes of transmission of HIV, 56% about the most common route of transmission while 14% (7) were aware of the route with the maximum risk of transmission, post intervention this increased to 70% (35 students became aware) ($\chi^2 = 32.184, p < 0.001$). 12% participants had

information of at least three O.I occurring in AIDS patients during the pre-intervention assessment, post intervention a 64% increased awareness was noted ($\chi^2 = 41.558, p < 0.001$). 60% of the study subjects became aware about the window period for HIV post educational sessions ($\chi^2 = 36.232, p < 0.001$). 32 (64%) respondents knew that occupational injury with damage to skin carried the greatest risk of transmission of the virus; following the intervention 42 (84%) were aware of the fact ($\chi^2 = 4.21, p = 0.04$). In the pre intervention analysis 23 students reported that amount of blood loss following exposure, viral load of the patient and use of PEP affected the chances of getting infected following exposure, post intervention 27 responded correctly. Knowledge regarding risk of transmission of HIV by needle-stick injury and body fluids against which universal precautions were mandatory increased by 72% following the intervention sessions ($\chi^2 = 53.202, p < 0.001$). 17 (34%) and 32 (64%) students had information about body fluids against which universal precautions were not necessary prior to and following the intervention sessions ($\chi^2 = 9.004, p = 0.003$). Pre intervention 36 (72%) respondents correctly knew the duration within which to start PEP and 18 (36%) knew about the drugs available for PEP, post educational sessions 49 (98%) and 48 (96%) students had correct information on the two issues. The difference was statistically significant ($\chi^2 = 11.294, p < 0.001$) and ($\chi^2 = 37.748, p < 0.001$) respectively. (Table 1)

Table 1: Analysis of study results before and after educational intervention (n=50)

Study variable	Pre-intervention correct response	Post – intervention correct response	Increased awareness	p value
Full form of HIV	12	24	24%	0.012
Full form of AIDS	44	48	08%	0.269
Full form of ART	15	23	16%	0.099
Full form of PPTCT	00	03	06%	0.241
Full form of O.I.	02	34	64%	<0.001
Full form of PEP	31	45	28%	0.002
Routes of transmission	45	48	06%	0.433
Most common route of transmission	28	36	16%	0.145
Route of transmission with maximum possible risk	07	35	56%	<0.001
O.I occurring in AIDS (at least three)	06	38	64%	<0.001
Window period in HIV	12	42	60%	<0.001
Maximum risk of HIV transmission following occupational exposure	32	42	10%	0.04
Factors determining risk of HIV transmission following occupational exposure	23	27	08%	0.549
Risk of HIV transmission following needle stick injury	03	39	72%	<0.001
Body fluids against which Universal Precaution is mandatory	03	39	72%	<0.001
Body fluids against which Universal Precaution is not mandatory	17	32	50%	0.003
Duration within which PEP is to be started	36	49	26%	<0.001
Drugs available for PEP	18	48	60%	<0.001

The mean pre-intervention score was 8.32 (S.D= 2.65, Range= 12) while the mean post intervention score was 14.40 (S.D= 2.52, Range= 10), a 73% increase in the mean scoring. Paired t test was applied to the mean scores pre and post intervention and the difference was found to be statistically significant (t= 13.857, p< 0.001).

Discussion:

The study results clearly show a lack of proper information and knowledge on the concerned issues among the study participants. A study by Avachat S et al (6) conducted among nursing students reported that only 44% of the students were aware of infectious body fluids, 37% had no information on the factors affecting the chances of getting infected and just 2% of the third year students correctly knew the duration of PEP. A study at AIIMS conducted among doctors of private hospitals stated that 62.8% of the participants were unaware of PEP measures to be undertaken following occupational exposure.

(7) Imran Ahmed et al in their study among pharmacy students revealed that almost 80% of the participating students were unaware of the use of PEP following accidental occupational exposure and only 18.5% had awareness regarding O.I.(8) The above findings from across the health care fraternity imply immediate formulation of policies wherein HCP are imparted adequate training regarding PEP and occupational exposure, with special emphasis on hands on training to the health workers. Incorporating these particular issues in the academic curriculum of the medical, nursing and pharmacy students is important so that they imbibe adequate and proper knowledge during their formative years. To ensure easy accessibility to proper information charts and posters depicting the PEP guidelines should be hung in every ward, Out Patient Departments, Operation Theatres and nursing stations in both public and private hospitals; also guidelines should be framed wherein early and essential reporting of accidental occupation-

al exposures amongst staff in health care settings is made mandatory so that appropriate measures can be undertaken at the earliest.

Acknowledgements:

The authors would like to thank the Superintendent Maharaja Yashwantrao Hospital, Principal Nursing College for granting permission for the study and all the nursing students for participating in the study.

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