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A study to assess the knowledge about post exposure prophylaxis of HIV infection among IV year B.Sc. nursing students studying in government college of Nursing, Kurnool, Andhra Pradesh, India

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Abstract

Back Ground: PEP stands for post-exposure prophylaxis. It means taking antiretroviral medicines (ART) after being potentially exposed to HIV to prevent becoming infected. PEP must be started within 72 hours after a recent possible exposure to HIV, as early we start PEP that better the result will be.

Objectives: The study was planned to assess the knowledge of students regarding post exposure prophylaxis of HIV and to prepare an information booklet on Post exposure prophylaxis to educate IV year B.Sc. nursing students.

Material and Methods: In the present study descriptive research design was used and it was planned to conduct in Government College of nursing, Kurnool, AP, India. Population was IV year B.Sc. nursing students studying in Government College of nursing, Kurnool. Convenient sampling technique was used to choose the sample. Data were collected from 25 students studying IV year B.Sc. nursing by using structured questionnaire.

Result: The findings of the study reveal that 14.6 % and 38.6% of the IV year B.Sc. nursing students have inadequate knowledge about HIV infection and PEP respectively, where as 85.3% and 61.3% of the students have adequate knowledge about HIV infection and PEP respectively; which clearly states that rate of Students knowledge about PEP is low than the knowledge about HIV infection.

Keywords: Post exposure prophylaxis, HIV infection

1. Introduction

Human Immunodeficiency virus causes an incurable infection that leads ultimately to a terminal disease called Acquired Immunodeficiency Syndrome AIDS which is a global problem. Incidence is difficult to workout but the fact remains that disease is alarmingly increasing both in the developed and in developing countries. The HIV epidemic emerged in the early 1980s with HIV infection as a highly lethal among frequent recipients of blood product transfusions [1].

The main modes of transmission of HIV are through human body fluids by three major routes;

- Sexual contact (homosexual or heterosexual)
- HIV infected mother to baby through Transplacental route or through breast milk
- Exposure to infected blood or tissue fluids (direct injection with contaminated drugs, needles, syringes, blood or blood products) [2].

PEP stands for post-exposure prophylaxis. It means taking antiretroviral medicines (ART) after being potentially exposed to HIV to prevent becoming infected. PEP must be started within 72 hours after a recent possible exposure to HIV, as early we start PEP that better the result will be [3]. PEP in the form of combination drug therapy is now recommended for health care workers following occupational HIV exposure (exposure to infected blood or tissue fluids). It is an emergency medical response treatment which consists of medication, laboratory test and counseling. This should be started within hours following accidental exposure to the virus. Four weeks of treatment with AZT monotherapy after accidental needle stick exposure to HIV among health care workers decreases the chance of becoming

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infected by more than 80% if PEP is used correctly and consistently [4]. PEP consists two drug regimen: 1) Basic regimen 2) Expanded regimen

Basic regimen: Consists of Zidovudine 600 mg in divided doses/ 300mg BD or 200mg thrice a day for 4 weeks + Lamivudine (3TC) 150 mg twice a day for 4 weeks.

Expanded regimen: Consists of basic regimen + Indinavir 800mg thrice a day or any other protease inhibitors [5].

Prophylaxis decision will be decided after testing exposure code (EC) & HIV status code (HIV SC) of source. The health care provider should be treated for HIV as per the following schedule [6].

- Baseline HIV test: at time of exposure
- Repeat HIV test: at six weeks following exposure
- 2nd repeat HIV test: at twelve weeks following exposure

On all three occasions, health care workers must be provided with a pre-test and post-test counseling. HIV testing should be carried out on three ERS (Elisa/ Rapid/Simple) test kits or antigen preparations.

PEP should be started as early as possible after an exposure preferably within ½ an hour. It has been proved that PEP started after 72 hours of exposure is no use, hence it is not recommended. The optimal course of PEP is not known, but 4 weeks of drug therapy (28days) appears to provide protection against HIV [3].

Health care workers are often described at the front line of battle against HIV/AIDS, because on daily basis they deal directly with people who are ill or dying with disease. The fear of accidental infection with human immune deficiency virus, the causative agent of new fatal communicable disease AIDS exists in all segments of population including those involved in delivery of health care. This fear often influences their behavior towards individuals known to be infected with HIV. Hence it is important to make health care workers aware about Post Exposure Prophylaxis. The present study was aimed to assess knowledge of student nurses about PEP [7].

2. Objectives

- To assess the knowledge of students regarding post exposure prophylaxis of HIV
- To prepare an information booklet on Post exposure prophylaxis

3. Methodology

Descriptive research design was used which is usually carried out for the purpose of providing an accurate portrayal of a group of subjects with specific characteristics [8]. The study was planned to conduct in Government College of nursing, Kurnool, AP, India. Population was IV year B.Sc. nursing students studying in Government College of nursing, Kurnool. Convenient

sampling technique which is a type of non probability sampling technique was used to choose the sample [9].

4. Data collection process

Data were collected among 25 IV year B. Sc nursing students by using structured questionnaire which includes two parts;

Part A: includes demographic data of students like age, education, marital status, h/o exposure to HIV infected client etc.

Part B: consists of data related to knowledge of students regarding questions related to HIV and questions related to PEP of HIV.

Overall questionnaire consists of 30 items which consists of multiple choice questions; first 15 items gathers information about HIV infection knowledge, 16 to 30 items gathers information about Post Exposure Prophylaxis knowledge and the total score was 30, for each correct answer a score of one and for incorrect answer score zero was given.

5. Data Analysis and Interpretation

5.1. Description of demographic variables

S.NO	Demographic Variables	Frequency	Percentage
1.	Age		
	15 – 20 years	2	8%
	20 – 25 years	23	92%
	25 – 30 years	-	-
	Above 30 years	-	-
2.	Religion		
	Hindu	16	64%
	Christian	6	24%
	Muslim	3	12%
	Others	-	-
4.	Marital status		
	Married	1	4%
	Unmarried	24	96%
5.	Clinical exposure to seropositive client		
	Present	23	92%
	Not Present	2	8%

The above table depicts that 2 (8%) students of the sample were aged between 15 to 20 years; 23 (92%) sample were between 20 to 25 years. With regard to the religion 16 (64%) sample were Hindus, 6 (24%) sample were Christians and 3 (12%) sample were Muslims. In view of marital status, majority of the samples i.e. 24 (96%) were unmarried and one sample was married. With regard to the clinical exposure to seropositive clients, majority i.e. 23 (92%) sample had exposure and 2 (8%) sample doesn't have exposure to the seropositive client.

5.2. Description of knowledge regarding HIV infection

Table 1: Questions related to HIV infection

S.NO	Questions Regarding HIV	Frequency	Percentage
1.	HIV		
	Human immuno deficiency virus	25	100%
2.	AIDS		
	Acquired immuno deficiency syndrome	25	100%
3.	AIDS is also called as		
	Ghost disease	4	16%
	Slim disease	21	84 %
4.	First case of HIV in India was found		

	Andhra Pradesh, 1986	1	4%
	Chennai, 1981	24	96%
5.	Modes of transmission of HIV based on severity		
	Un safe sex, blood contact, IV drugs abuse, needle prick, trans placental	12	48%
	Blood transfusion, needle prick, trans placental, unsafe sex	4	16%
	Unsafe sex, trans placental, needle prick, IV drug abuse, blood transfusion	9	36%
6.	AIDS will not transmit through		
	Hugging, Kissing	-	-
	Fomites	-	-
	Shake hand	-	-
	All the above	25	100%
7.	Material source of HIV		
	Blood and body fluids	25	100%
8.	Danger of HIV spread through unsafe sex		
	80-90%	19	76%
	40-70%	6	24%
9.	Which age group is more prone to HIV?		
	Adolescents	25	100%
10.	HIV mainly affects		
	Immune system	25	100%
11.	Cardinal signs of AIDS		
	Weight loss >10%	1	4%
	All the above	24	96%
12.	Window period		
	Between exposure of virus to antibody formation	12	48%
	Between antibody formation to diagnosis	3	12%
	All the above	10	40%
13.	Duration of window period		
	10 weeks	6	24%
	8 weeks	4	16%
	12 weeks	13	52%
	11 weeks	2	8%
14.	Duration of period between HIV to AIDS		
	12 years	4	16%
	7-10 years	20	80%
	25 years	1	4%
15.	World AIDS day		
	December 1 st	25	100%

The above table shows that all the sample i.e. 25 (100%) students have correct knowledge about meaning of HIV and AIDS, modes of transmission and material source of HIV, vulnerable age group and system that gets affected with HIV, and about world health day. Majority that is 21 (84%) students know the other name of AIDS but 4 (16%) students does not know. Regarding first case of HIV in India and cardinal signs of AIDS majority i.e. 24 (96%) students know the correct information, only one (4 %) student does not have the knowledge.

Regarding modes of transmission of HIV based on severity 12 (48%) subjects know the correct information where as 13 (52 %) students does not know. Regarding danger of HIV

spread through unsafe sex majority i.e. 19 (76%) have correct knowledge but 6 (24%) have incorrect information. About window period 12 (48%) subjects have correct knowledge whereas 13 (52 %) students have incorrect information; with regard to the duration of window period 13 (52 %) subjects have correct knowledge whereas 12 (48%) students have incorrect information. About period between HIV to AIDS majority i.e. 20 (80%) have correct knowledge where as 5 (20%) students possess incorrect knowledge.

5.3. Percentage distribution of knowledge about HIV infection

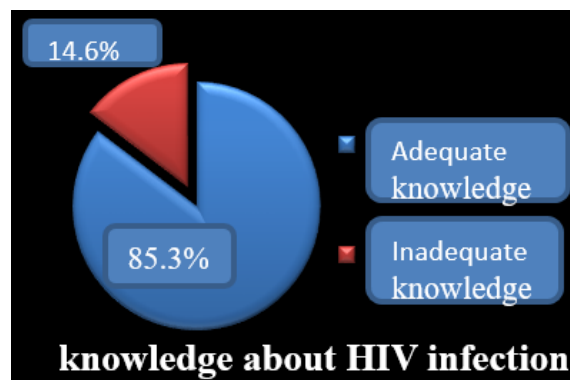


Fig 1: Level of knowledge related to HIV infection

The above figure depicts that majority i.e. 85.3% of the sample have adequate knowledge about HIV infection where as 14.6% still lack knowledge on HIV.

5.4. Description of knowledge regarding Post Exposure Prophylaxis of HIV

Table 2: Questions related to Post Exposure Prophylaxis

S.NO	Questions Related To PEP	Frequency	Percentage
1.	ART means		
	Artificial retroviral therapy	2	8
	Acute retroviral therapy	1	4 %
	Antiretroviral therapy	18	72 %
	Abstract retroviral therapy	4	16 %
2.	PEP means		
	Pre exposure prophylaxis	1	4 %
	Pre exposure prophylaxis	24	96 %
3.	Duration of PEP		
	4 weeks	8	32 %
	2 months	8	32 %
	One week	9	36 %
4.	Time limit of starting of PEP after exposure		
	Within 12 hours	4	46 %
	Within 48 hours	2	8 %
	Within 72 hours	19	76 %
5.	PEP is mainly directed to		
	Health personnale	24	96 %
	Drivers	1	4 %
6.	Rate of HIV by needle prick		
	10 %	14	56 %
	50%	4	16 %
	1 %	7	28 %
7.	First aid immediately after needle prick		
	Squeezing the blood out	12	48 %
	Wash site thoroughly with running water	11	44 %
	Clean the site with bleach	1	4 %
	Run for medical aid	1	4 %
8.	Mode of action of PEP drugs		
	Blocking the multiplication & boosting one's immune system	20	80 %
	Engulfing the virus	1	4 %
	Releasing toxins against the virus	1	4 %
	Creating unfavorable environment to the virus	3	12 %
9.	PEP can prevent the HIV up to		
	50 %	5	20 %
	49 %	2	8 %
	79 %	12	48 %
	25 %	6	24 %
10.	Regimens in PEP		
	Basic regimen	1	4 %
	Expanded regimen	23	92 %
11.	Basic regimen of PEP contains		
	2 NRTI	19	76%
	3 NRTI	3	12%
	2 protease inhibitors	3	12%
12.	Expanded regimen of PEP contains		
	Basic regimen + Protease inhibitor	15	60%
	2 Protease inhibitors	1	4%
	NRTI	5	20%
	1 protease inhibitor	4	16%
13.	Basic regimen meant for		
	EC ₁ SC ₂ EC ₂ SC ₁	19	76%
	EC ₃ SC ₁	1	4%
	EC ₁ SC ₁	2	8%
	EC ₂ SC ₃	3	12 %
14.	Expanded regimen meant for		
	EC ₃ SC ₁	3	12%
	EC ₁ SC ₃	4	16%
	EC ₂ SC ₂ EC ₃ SC ₂	14	56%
	EC ₂ SC ₁	4	16%
15.	Complication of Zidovudine		
	Hepatitis	4	16%
	Anaemia	21	84%

The findings of the above table depicts that regarding ART meaning 18 (72 %) students have correct knowledge, rest doesn't know; about PEP meaning and group that is meant for PEP 24 (96 %) have correct knowledge, rest doesn't know; about duration of PEP only 8 (32 %) students have correct information; with regard to time limit to start PEP, contents of basic regimen of PEP and group that is meant for basic regimen, 19 (76 %) students have correct information rest of the students does not know; about percentage of HIV spread through needle prick only 7 (28 %) students have correct information; about first aid immediately after needle prick only 11 (44 %) have correct knowledge; about mode of action of PEP drugs majority i.e. 20 (80 %) have correct knowledge; about chance of prevention of HV through PEP 12 (48 %) students have correct knowledge; about regimens present in PEP 23 (92 %) students have correct knowledge; about the contents of expanded regimen 15 (60 %) students have correct knowledge; about group meant for expanded regimen 14 (56 %) students possess correct knowledge and about complication of Zidovudine, majority i.e. 21 (84 %) students have correct knowledge.

5.5. Percentage distribution of Knowledge regarding Post Exposure Prophylaxis

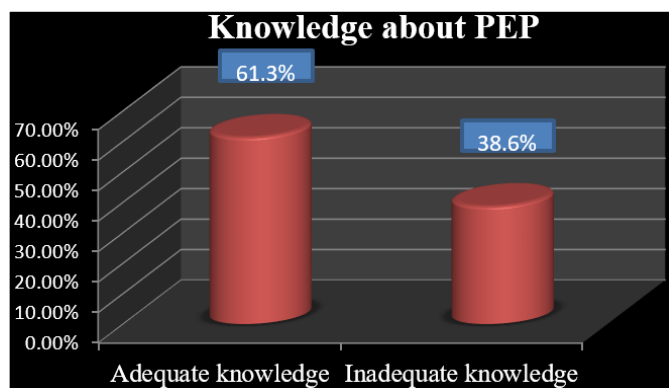


Fig 2: Level of knowledge related to PEP

The above figure depicts that majority i.e. 61.3% of the sample have adequate knowledge about PEP whereas still 38.6% of the students lack knowledge on post exposure prophylaxis.

6. Result & Discussion

The findings of the study reveal that 14.6 % and 38.6% of the students have inadequate knowledge about HIV infection and PEP respectively, whereas 85.3% and 61.3% have adequate knowledge about HIV infection and PEP respectively; which clearly states that rate of Students knowledge about PEP is low than the knowledge about HIV infection.

7. Conclusion

Nursing officers are the one who work round the clock with the clients irrespective of their age, gender, disease and its infectivity. Though the client suffers from HIV / AIDS the medical people including nursing officers is giving care to them in the health care settings. As the findings of the study confirms the low knowledge among IV year B.Sc. nursing students about Post Exposure Prophylaxis, the study recommends:

- Plan for educational sessions to educate medical personnel about HIV and PEP is important to increase the awareness to the nursing officers.
- Larger group can be planned for better generalization
- CNE programs need to be planned at inter collegial level to increase the knowledge about PEP among student nurses.

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