

A STUDY TO ASSESS THE KNOWLEDGE AND ATTITUDE REGARDING OCCUPATIONAL EXPOSURE AND POST EXPOSURE PROPHYLAXIS (PEP) FOR HIV AMONG NURSING STAFF IN A TERTIARY CARE HOSPITAL

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Abstract

Background: Human immunodeficiency virus (HIV) is a major global public health problem. Health-care workers (HCWs) are persons working in health-care setting. Nurses form the major part of various cadres of health care workers (HCWs). Post exposure prophylaxis (PEP) for HIV is the only way to reduce risk of HIV after potential exposure to blood and body fluids in health care settings. The present study was conducted to assess the knowledge and attitude regarding occupational exposure and post exposure prophylaxis (PEP) for HIV among nursing staff. **Materials and Methods:** This hospital based cross sectional study was carried out in Anil Neerukonda Hospital, Visakhapatnam. All the nursing staff fulfilling the selection criteria were included in this study. Sample size included 130 nurses. The nurses who studied either GNM and B.Sc.(N)course and who were available at the time of data collection were included. **Results and Conclusion:** Mean age was 20.62 +/- 1.23 years ranging from 18 years to 25 years. Majority were in the age of 21 years (36.8%) and 20 years (30.4%). Males were 26.4% and females were 73.6%. Regarding HIV and AIDS, 78.4 percent of nurses had fair knowledge and 20.8 percent had poor knowledge. Regarding occupational exposure, 64.6 percent of nurses had fair knowledge and 32.3 percent had poor knowledge. Regarding post-exposure prophylaxis, 68.4% of nurses had fair knowledge and 30.8 percent had poor knowledge. The nurses had a positive attitude toward occupational exposure and post-exposure prophylaxis.

INTRODUCTION

Human immunodeficiency virus (HIV) is a major global public health problem. Health-care workers (HCWs) are persons working in health-care setting.^[1] Nurses form the major part of various cadres of health care workers (HCWs).^[2] Their profession demands a frontline caring role bringing them in close contact with patients' blood and other body fluids which put them at risk of occupational exposure to HIV/AIDS and other blood related infections. Post exposure prophylaxis (PEP) for HIV is the only way to reduce risk of HIV after potential exposure to blood and body fluids in health care settings.^[3-6] The present study was conducted to assess the knowledge and attitude regarding occupational exposure and

exposure prophylaxis (PEP) for HIV among nursing staff.

Justification of the study: The present topic was unexplored in my region. Extensive questionnaire was used in this study to obtain more information which was lacking in other publications. By doing this study, I was able to find the nurses who are unaware of this topic, and we gave proper training to them for better patient care.

MATERIALS AND METHODS

This hospital based cross sectional study was carried out in Anil Neerukonda Hospital, Visakhapatnam. All the nursing staff fulfilling the selection criteria were included in this study. Sample size included 130

nurses. Study period was from January 2022 to February 2022. The nurses who studied either GNM and B.Sc.(N)course and who were available at the time of data collection were included. Nurses who were not willing to participate were excluded. Permission was obtained from the ethical committee of NRI Institute of Medical Sciences, Medical & Nursing Superintendents of NRI Institute of Medical Sciences. Consent was obtained from the study subjects. Data entry was done using M.S. Excel and statistically analysed using Statistical package for social sciences (SPSS Version 16) for M.S Windows. Descriptive statistical analysis was carried out to explore the distribution of several categorical and quantitative variables. Categorical variables were summarized with n (%), while quantitative variables were summarized by mean \pm S.D. All results were presented in tabular form and are also shown graphically using pie diagram.

RESULTS

Mean age was 20.62 + 1.23 years ranging from 18 years to 25 years. Majority were in the age of 21 years (36.8%) and 20 years (30.4%). Males were 26.4% and females were 73.6%.

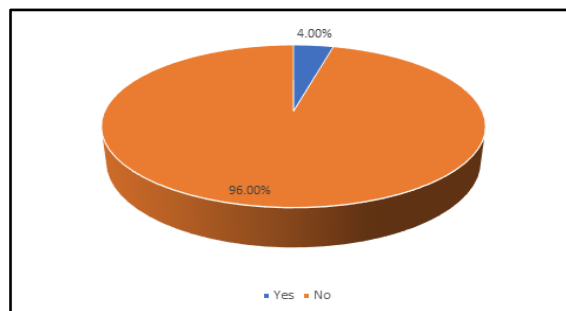


Figure 1: Distribution of study subjects based on History of occupational exposure to HIV

Table 1: Distribution of study subjects based on Religion

Religion	Frequency		Percent	
	Hindu	90		72%
	Christian	32		25.6%
	Others	3		2.4%
	Total	125		100.0%

Majority were Hindus (72%) followed by Christians (25.6%).

Table 2: Distribution of study subjects based on Family Income

Family income (per month)	Frequency		Percent	
	< Rs 10000	58		46.4%
	Rs 10000 to 20000	40		32.0%
	Rs 20000 to 30000	16		12.8%
	> 30000	11		8.8%
	Total	125		100.0%

Family income was < Rs 10000 in 46.4% study subjects, Rs 10000 to 20000 in 32% study subjects, Rs 20000 to 30000 in 12.8% study subjects and > 30000 in 8.8% study subjects.

Table 3: Distribution of study subjects based on type of family

Type of family	Frequency		Percent	
	Nuclear Family	99		79.2%
	Joint Family	24		19.2%
	Extended family	2		1.6%
	Total	125		100.0%

Type of family was Nuclear Family in 79.2% study subjects, Joint Family in 19.2% study subjects, Extended family in 1.6% study subjects.

Table 4: Distribution of study subjects based on habitat

Habitat	Frequency		Percent	
	Rural	87		69.6%
	Urban	38		30.4%
	Total	125		100.0%

69.6% belonged to rural and 30.4% belonged to urban habitat.

Table 5: Distribution of study subjects based on source of information

Source of information	Frequency		Percent	
	Print Media	30		24%
	Electronic Media	41		32.8%
	New age media	58		46.4%
	Peer group and social circle	5		4%
	Health professionals	28		22.4%

Source of information was mostly by New age media and Electronic Media.

Table 6: Distribution of study subjects based on knowledge regarding HIV and AIDS

S.No	Knowledge Regarding HIV And Aids	Correct Response	
		n	%
1	HIV stands for	111	88.8
2	HIV Positive means, a person who infected with	100	80
3	HIV is which virus?	72	57.6
4	The test used to screen for HIV	114	91.2
5	Symptoms of terminal stage of HIV	12	9.6
6	AIDS stands for	110	88.8
7	The signs and symptoms of AIDS	93	74.4
8	CD 4 Cells are the components of	60	48
9	The normal CD4 cell count ranges between	45	36
10	The CD 4 cell count at terminal stage of HIV is	10	8
11	The confirmatory test used to diagnose HIV is	117	93.6
12	The drugs used in Highly Active Antiretroviral Therapy (HAART)	78	62.4

		Frequency	Percent
Knowledge Regarding HIV And Aids	Good	1	0.8%
	Fair	102	78.4%
	Poor	27	20.8%
	Total	130	100%

Knowledge regarding HIV & AIDS was fair in majority (78.4%) of study subjects.

Table 7: Distribution of study subjects based on knowledge regarding occupational exposure

S. No	Knowledge Regarding Occupational Exposure	Correct Response	
		n	%
1	The most vulnerable health care workers at risk of occupational exposure	77	61.6
2	Types of occupational exposure	112	89.6
3	Exposure route which has highest average risk of transmitting HIV infection to health care personnel	33	26.4
4	Risk of HIV transmission is more when injury sustained with	21	16.8
5	Body fluid which has highest risk of transmitting HIV	59	47.2
6	Effective disinfectant against HIV	44	35.2
7	Best disinfectant used for management of blood and body fluid spillage	40	32

		Frequency	Percent
Knowledge Regarding Occupational Exposure	Good	4	3.1%
	Fair	84	64.6%
	Poor	42	32.3%
	Total	130	100%

Knowledge regarding occupational exposure was fair in majority (64.6%) of study subjects.

Table 8: Distribution of study subjects based on knowledge regarding Occupational Exposure

S. No	Knowledge Regarding Post Exposure Prophylaxis [PEP]	Correct Response	
		n	%
1	Post exposure prophylaxis [PEP] for HIV refers to prophylactic use of	81	64.8
2	PEP should be started ideally within	11	8.8
3	PEP treatment should no longer be delayed more than	22	17.6
4	Recommended short term duration of PEP regimen	37	29.6
5	Preferred antiretroviral regimen for adults and adolescents (2 drug regimen) recommended by NACO	50	40
6	Follow up HIV testing of exposed person is done at	25	20

		Frequency	Percent
Knowledge Regarding Post Exposure Prophylaxis [PEP]	Good	1	0.8%
	Fair	89	68.4%
	Poor	40	30.8%
	Total	130	100%

Knowledge regarding post exposure prophylaxis was fair in majority (68.4%) of study subjects.

Table 9: Distribution of study subjects based on Attitude scale

S. No	Statements	SA		A		U		D		SD	
		n	%	n	%	n	%	n	%	n	%
1	Most people who have AIDS deserve what they get.	24	18.5	31	23.8	27	20.8	7	5.4	41	31.5
2	People who get AIDS through blood transfusion are more deserving of treatment than people who get AIDS through sexual promiscuity.	33	25.4	44	33.8	16	12.3	14	10.8	23	17.7

3	I think that people who are IV drug users deserve to get AIDS.	26	20	37	28.5	23	17.7	18	13.8	26	20
4	If I assigned to a patient with AIDS, I would worry about putting my family and friends at risk of contracting disease.	52	40	31	23.8	17	13.1	15	11.5	14	10.8
5	I am worried about getting AIDS from social contact with someone.	16	12.3	20	15.4	22	16.9	26	20	46	35.4
6	If people know that I take care of HIV/AIDS patients, they will stigmatise me.	44	33.8	39	30	27	20.8	5	3.8	5	3.8
7	I think that patients with AIDS have the right to the same quality of care as any other patients.	59	43.4	32	24.6	14	10.8	14	10.8	11	8.5
8	Patients who are HIV positive should not be put in rooms with other patients.	39	30	30	23.1	31	23.8	10	7.7	20	15.4
9	It is especially important to work with patients with AIDS in a caring manner.	46	35.4	51	39.2	12	9.2	12	9.2	9	6.9
10	I would like to do something to make life easier for people with AIDS.	40	30.8	32	24.6	24	18.5	13	10	8	6.2
11	I would do everything I could to give the best possible care to patients with AIDS	51	39.2	45	34.6	11	8.5	9	6.9	9	6.9
12	I would leave nursing if I had to care for AIDS patients.	22	16.9	16	12.3	20	15.4	10	7.7	62	47.7
13	I prefer not to care for a patient with AIDS.	13	10	19	14.6	10	7.7	13	10	75	57.7
14	All inpatients should be tested for HIV.	54	41.5	26	20	26	20	9	6.9	15	11.5
15	I think we should take universal precautions when caring each and every patient.	80	61.5	21	16.2	12	9.2	11	8.5	6	4.6
16	Self-protection is more important than confidentiality of HIV status of the patient.	65	50	36	27.7	10	7.7	14	10.8	5	3.8
17	HIV positive nurses should resign the job.	43	33.1	21	16.2	16	12.3	15	11.5	35	26.9
18	All nurses should be tested for HIV.	61	46.9	22	16.9	16	12.3	20	15.4	11	8.5
19	Personal protective equipment [PPE] ensures 100 % protection from occupational exposure.	51	39.2	41	31.5	22	16.9	11	8.5	5	3.8
20	Needle stick injury doesn't spread HIV infection.	20	15.4	15	11.5	23	17.7	30	23.1	42	32.3
21	I am confident that I can protect my skin at work.	49	37.7	46	35.4	15	11.5	9	6.9	11	8.5
22	Reuse of disposable PPE makes me feel less protected.	52	40	31	23.8	24	18.5	15	11.5	8	6.2
23	I think that post exposure prophylaxis [PEP] is important.	54	41.5	42	32.3	17	13.1	10	7.7	7	5.4
24	I believe that training of PEP is important for behavioural change.	40	30.8	45	34.6	25	19.2	10	7.7	10	7.7
25	There should be PEP guidelines in work areas.	53	40.8	33	25.4	30	23.1	9	6.9	5	3.8
26	I believe that PEP reduces likelihood of being HIV positive.	36	27.7	34	26.2	31	23.8	20	15.4	9	6.9
27	PEP provides 100% protection from contracting with HIV infection.	21	16.2	56	43.1	34	26.2	11	8.5	8	6.2
28	I think PEP is not required if source is HIV negative.	32	24.4	21	16.2	29	22.3	17	13.1	31	23.8

Overall attitude of the nurses was positive regarding occupational exposure & post exposure prophylaxis.

DISCUSSION

In the present study, majority were females and mean age of the study subjects was 20.62 + 1.23 years. In Aminde LN et al,^[2] most (66.3%) of the participants were females. The mean age was 34±8 years (range: 21–55 years), with majority (43.8%) of participants aged between 20 to 30 years. In Tshering K et al,^[7] 56.6% were females. Mean age of the participant was 28.26±5 years (range: 22–42 years), with majority (44.1%) of them between 26–30 years. Most (67.4%) of the nurses had maximum qualification of Diploma in general nursing. In Mathewos B et al,^[8] 119 (61%) were males and 76 (39%) were females.

In the present study, majority were Hindus. In Aminde LN et al,^[2] Seventy-one (88.8%) of them were Christians.

In the present study, 4% nurses were exposed to HIV previously and took Post exposure prophylaxis. Mathewos and colleagues in a study in Gondar found that 33.8% of their participants declared a previous occupational exposure,^[8] while another study in the Abuja Teaching Hospital in Nigeria found that 30.9% of their participants had past exposure. Much lower rates of exposures have been reported in Italy.^[9]

In the present study, 78.4% nurses had fair knowledge and 20.8% had poor knowledge regarding HIV and AIDS.

In the present study, 64.6% nurses had fair knowledge and 32.3% had poor knowledge regarding

occupational exposure. In Gebreslase T et al.^[10] During their daily activities, health professionals were most likely to come into contact with blood. 82.5 percent, 74.9 percent, 49.1 percent, and 42.7 percent, respectively, were exposed to blood, non-blood body fluid, needle stick injury, and mucocutaneous. Among the 84 needle stick injuries, 69 (82.1%) had 1-3 injuries in their lifetime, 13 (15.47%) had 4-6 injuries in their lifetime, and two (2.3%) had 7-10 injuries in their lifetime. According to the respondents' exposure history from the previous year, 48 (28.07 percent) of them had at least one needle stick injury.

In the present study, 68.4% nurses had fair knowledge and 30.8% had poor knowledge regarding post exposure prophylaxis. In Tesfaye G et al,^[11] 33 (45.8) had inadequate knowledge about PEP. In Aminde LN et al.^[2] Over two-thirds (73.7%) of the study participants had limited knowledge of PEP for HIV. The majority of the participants (83.8 percent) had heard of HIV post-exposure prophylaxis. Only eight nurses (10%) knew what percentage of needle pricks result in HIV transmission. Only twenty-four (30.0 percent) participants correctly identified the ideal PEP drug regimen. In Tshering K et al.^[7] One hundred and thirteen (51.1%) of our respondents had heard of PEP for HIV prevention. The majority of our respondents (77.8%) were unable to identify PEP indications, and more than half (60.6%) were unaware of proper first-aid procedures in the event of a needle stick injury. Sixty-four participants (29%) knew PEP should be started within one hour of exposure, and 23.5 percent knew it should be considered up to 72 hours after exposure. Thirty (13.6%), thirty-nine (17.6%), and seventeen (7.7%) participants, respectively, knew the correct duration of PEP, the effectiveness of PEP, and hospital policy on PEP. Regarding post-exposure prophylaxis, 4.5 percent of nurses had good knowledge, 15.4 percent had average knowledge, and 80.1 percent had poor knowledge.

In Gebreslase T et al,^[10] 98 (57.3%) of those polled said they knew a lot about a lot of things. PEP was known by 71 (41.5%) people with fair knowledge and 2 (1.2%) people with poor knowledge. According to a study conducted in Zimbabwe, 65 percent of respondents scored less than 50 percent on knowledge questions, which is considered poor knowledge.^[12] Such disparities could be attributed to participant demographic characteristics such as qualification, years of experience, and formal training received.

In the present study, attitude of the nurses was positive regarding occupational exposure & post exposure prophylaxis. In Mathewos B et al.^[8] The vast majority of respondents, 192 (98.5%) and 172 (88.2%), agreed on the importance of PEP for HIV and the availability of PEP guidelines in the hospital or at work. The majority of respondents (75.4%) had a positive attitude toward PEP for HIV, while 48 (24.6%) had a negative attitude. In Tesfaye G et al,^[11] 80% of nurses had positive attitude towards PEP use.

In Tshering K et al,^[7] PEP for HIV was viewed favourably by 92.3 percent of those polled. The majority of our participants (74.7%) thought reporting needle stick injuries was important, and 95% agreed that practising PEP could reduce the risk of contracting HIV through occupational exposure. In Aminde LN et al.^[2] The majority of nurses (85 percent) believed they were at risk of contracting HIV at work, with 54 (67.5 percent) admitting to having been exposed to HIV in the past.

CONCLUSION

Regarding HIV and AIDS, 78.4 percent of nurses had fair knowledge and 20.8 percent had poor knowledge. Regarding occupational exposure, 64.6 percent of nurses had fair knowledge and 32.3 percent had poor knowledge. Regarding post-exposure prophylaxis, 68.4% of nurses had fair knowledge and 30.8 percent had poor knowledge. The nurses had a positive attitude toward occupational exposure and post-exposure prophylaxis.

Recommendations

- A large-scale study assessing knowledge and attitudes about occupational exposure and HIV post-exposure prophylaxis could be conducted in various hospitals and institutes.
- A descriptive study could be conducted to assess student nurses' knowledge and practice regarding the importance of universal precautions in bloodborne pathogen prevention.

Limitations

- Small sample size
- Tool used for the data collection was not standardized. It was self-designed by the investigator.

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