

Knowledge on Post Exposure Prophylaxis of HIV among Nurses in a Hospital of Pokhara

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Abstract

Health care providers are at risk of acquiring human immunodeficiency virus (HIV) infection from occupational exposure, with nurses being the most vulnerable. Post exposure prophylaxis (PEP) of HIV is the only way to reduce risk of HIV after potential exposure. A study was conducted on Nurses Knowledge on PEP of HIV at Gandaki Medical College (GMC), Pokhara to find out the knowledge on PEP of HIV among nurses. Descriptive cross sectional research design was used for the study. Probability stratified systematic random sampling technique was used for sampling and self administered questionnaires was used for data collection with sample size of 90 nurses working in GMC. The data was analyzed using Statistical Package for Social Science (SPSS) version 20 software programme and presented in terms of frequency distribution, percentage, mean and standard deviation. For inferential statistics, chi square test was used at 5% level of significance. The findings of the study revealed that mean age of the respondents was 24.57 with standard deviation 3.43. Out of 90 respondents majority (83.3%) of the respondents were PCL passed and 47.8% of the respondents had adequate knowledge regarding PEP of HIV. The study found no significant association between demographic variables and knowledge level. It can be concluded that the nurses need to improve their level of knowledge on PEP of HIV by participating in different training programs. Health institution should also conduct continue nursing education programme to improve and update knowledge among the employees.

Key words: HIV (Human immunodeficiency Virus), knowledge, nurses, PEP (post exposure prophylaxis), Pokhara

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Introduction

Post-exposure prophylaxis (PEP) is short-term antiretroviral treatment to reduce the likelihood of HIV infection after potential exposure. Globally, there were an estimated 35 million people living with HIV, of whom 13 million were on antiretroviral treatment (ART) at the end of 2013. (WHO, 2014). In Nepal, ART coverage among people with HIV infection eligible for ART is 32 percent (WHO, 2012).

PEP is the use of antiretroviral drugs after a single high-risk event to stop HIV from making copies of itself and spreading through the body. In 1987, CDC recommended the use of “universal precautions,” which became a part of “standard precautions” in 1995, to prevent occupational HIV exposures. Since 1996, occupational post exposure prophylaxis with antiretroviral to prevent infection has been recommended. PEP must be started as soon as possible to be effective and always within 3 days of a possible exposure (CDC, 2015).

It is estimated that worldwide, about 35 million healthcare workers (HCWs) provide services to patients. However, occupational exposure to blood or other body fluids in healthcare facilities constitutes a significant risk of transmission of HIV and other blood borne pathogens to HCWs. HIV/AIDS in particular is a major threat in the workplace. Each day thousands of HCWs around the world suffer accidental occupational exposures during the course of their role of caring for patients. It is further estimated that through occupational exposure, 0.5 percent of HCWs are exposed to HIV annually and this equates to approximately 200-600 HIV infections worldwide (Beyera & Chercos, 2013). ARV drugs have been prescribed for post-exposure prophylaxis following occupational exposure to HIV for health workers since the early 1990s (WHO, 2013).

The findings of the quantitative and qualitative study in south west Ethiopia revealed that the knowledge of health workers about post exposure prophylaxis against HIV is inadequate. Among the total 254 participants, 213 (83.9%) had inadequate knowledge about post exposure prophylaxis of HIV (Tebeje & Hailu, 2010).

A cross-sectional study conducted among nurses in a rural health district in the North West Region of Cameroon revealed that though many (83.8%) had heard about PEP, just 10 (12.5%) had received formal training on PEP for HIV. Only 24 (30%) and 20 (25%) knew the correct drug regimen and duration of treatment respectively. In all, 73.7 percent of the participants had poor knowledge about PEP for HIV (Aminde et. al, 2015). Study done in Chitwan Medical College revealed that out of 65 respondents only 6 percent of respondents had good level of knowledge, 68 percent had fair level of knowledge and 26 percent of respondent had poor level of knowledge regarding PEP (Lamichhane, Aryal & Dhakal, 2012).

As there is increasing rate of HIV infection and health care workers are at higher risk of developing HIV, it is important to have adequate knowledge in nurses so that they could timely manage in case of accidental exposure. Since many studies depicts good percentage of nurses

having low level of knowledge regarding Post Exposure Prophylaxis of HIV, further study, ongoing awareness and training is important to improve the knowledge and practice of nurses. In addition, nominal research have been found in this area so far in researcher's knowledge. Hence, it is necessary to undertake study to examine the existing knowledge on PEP of HIV among nurses.

Data and Methods

A descriptive cross sectional study design was used to find out the knowledge on post exposure prophylaxis of HIV among the nurses working in Gandaki Medical College (GMC). Gandaki Medical College is a tertiary level hospital located at Prithvi Chowk- Pokhara ward no 9. All the registered nurses working in Gandaki Medical College was the study population irrespective of their professional qualification. A total of 90 samples were selected for study. Sample size was 90 which was calculated by using the formula i.e. $4pq/l^2$, where, prevalence of knowledge related to PEP of HIV conducted in Chitwan Medical College was 6 percent (0.06) at 5 percent level of significance. Sampling method used was multistage sampling method. First of all GMC was chosen purposively, as this is a tertiary level hospital where many nurses are working in general and critical wards and the patient flow rate is high. Second step was stratified sampling technique where qualification was assumed as strata and four strata were made i.e. ANM, SN, BN, B.Sc Nursing. Then from each strata using systematic sampling technique, samples were selected at k^{th} interval proportionately. Sample was selected proportionately from each strata out of 160 nurses working in GMC. i.e. BN were selected at the interval of 2, B.sc at the interval of 1, PCL at the interval of 2 and ANM at the interval of 2.

Structured self administered questionnaire was developed by the researcher herself after extensive literature review. Validity of test instruments was maintained by reviewing literature, consulted with supervisors, subject matter experts and colleagues. Pretesting was in 10 percent of total sample size in different setting who meets the study criteria and were excluded from the study sample. No any modification was needed.

Data was collected after getting formal written permission letter from administration of GMC. Purpose and objectives of the study was clearly explained. Written consent was taken from each participant. Respondents were clearly explained about their freedom to withdraw from the study whenever they want to. Data was collected by using self administered questionnaire. Assurance was given for confidentiality and anonymity of the participants. Findings of the study were used for research purpose only. The data collection time period was of 2weeks.

The collected data were checked, reviewed and organized for the accuracy and completeness. Editing and coding of data was done. All the collected data was entered into Statistical package for Social Sciences (SPSS) version 20 and analyzed by using descriptive statistics in term of frequency, percentage, mean and standard deviation. Data were depicted by frequency table. For

inferential analysis, chi-square test was used to assess the association between knowledge on PEP of HIV among nurses and independent variables at 5 percent level of significance.

Results and Discussion

Table 1

Background Characteristics of Respondents

(n=90)

Characteristics	Frequency	Percentage
Age in years		
20-24 years	60	66.7
25-29 years	22	24.4
30-34 years	6	6.7
35 years and more	2	2.2
Mean \pm SD	24.57 \pm 3.431	
Qualification		
ANM	9	10.0
PCL	75	83.3
BSC	2	2.2
PBBN	4	4.4
Working Areas		
Critical area	45	50.0
General ward	45	50
Working experience		
1 year and less	28	31.1
2-3 years	35	38.9
4-5 years	11	12.2
6 years and more	16	17.8
Had taken care of patient with HIV		
Yes	76	84.4
No	14	15.6

Source: Field Survey 2016

Table 1 shows that more than half (66.7%) of the respondents were from the age group 20-24 years. The mean age was 24.57 and standard deviation was 3. Majority (83.3%) were PCL passed, equal no of participants are from critical care unit and from general departments. i.e. 50 percent, 38.9 percent of the respondents had working experience of 2-3 years. None of the respondents 100.0 percent has received training on HIV and related to HIV. Maximum respondents (84.4%) had taken care of patient with HIV.

Table 2

Knowledge of Post Exposure Prophylaxis

(n=90)

Characteristics	Frequency	Percentage
Meaning of PEP for HIV		
Medical help given to prevent occupational transmission of HIV before exposure.	16	7.8
Medical help given to clients after the transmission of HIV.	5	5.6
Medical help given to prevent the occupational transmission of HIV after exposure.	63	70.0
Psychological support given HIV positive people.	6	6.7
Time for PEP initiation		
When the source patient is at high risk for HIV	19	21.1
When the patient is known to be HIV positive.	31	34.4
When the HIV status of the source is unknown	9	10.0
For any needle stick injury in the work place	31	34.4
Preferable time to take PEP		
Within an hour	39	43.3
Within 6 hours of exposure	10	11.1
Within 12 hours of exposure	18	20.0
Within 72 hours of exposure	23	25.6
Maximum delay to take PEP		
12 hours	9	10.0
24 hours	21	23.3
48 hours	13	14.4
72 hours	47	52.2
Duration to take PEP		
7 days	37	41.1
14 days	12	13.3
28 days	39	43.3
40 days	2	2.2

Source: Field Survey 2016

Table 2 shows that the majority (70%) of the respondents has correct response on meaning of post exposure prophylaxis for HIV, only 34.4 percent of respondents have given correct response on knowledge regarding when PEP should be initiated. This table also depicts knowledge regarding preferable time to take post exposure prophylaxis for HIV in which 43.3 percent gave the correct response and regarding maximum delay to take PEP more than half (52.2%) gave the

correct response. Regarding duration to take PEP, 43.3 percent of the respondents gave correct response. More than half (52.2%) of the respondents has inadequate knowledge regarding PEP of HIV.

Table 3

Association Between Selected Background Characteristics and Knowledge of the Respondents (n=90)

Variables	Inadequate	Adequate	χ^2	p value
Age				
< 25 years	31	27	0.098	0.754
≥ 25 years	16	16		
Working experience				
< 3 years	27	22	0.358	0.550
≥ 3 years	20	21		
Working department				
Critical area	20	25	2.182	0.140
General ward	27	18		

Source: Field Survey 2016

As shown in Table 4, there is no significant association between independent variables and knowledge level of the respondents. This reveals that knowledge regarding PEP of HIV doesn't vary with age, working experience and working department of respondents.

Discussion

The finding revealed that regarding duration to take PEP, 56.7 percent of the respondents didn't know about the duration and 80% of the respondents gave correct response on most common mode of HIV Transmission to health care workers in health care setting. This finding is supported by a study of Owolabi et.al, (2011) which showed that 77.2 percent of the respondents didn't know about the duration to take PEP and 86.1 percent know about the most common mode of HIV transmission to health care workers in health care setting.

Majority of the respondents (70.0%) have correct response on meaning of post exposure prophylaxis for HIV, which is similar to the findings of Agrawal, Saoji & Kasturwar (2013) whose knowledge on meaning of PEP of HIV was 66 percent. More than half (56.7%) of the study participants have given correct response on knowledge regarding first aid immediately after potential exposure (needle stick injury) which is lesser to the finding of the study done by Bairy et.al., (2005) where 98 percent has given correct response. This may be because nurses

over there may have taken information about immediate first aid after potential exposure or needle stick injury.

Regarding when to start PEP for HIV 43.3 percent respondents has given correct answer which is quiet similar to other findings from study conducted by Mathewos et.al., (2013) where 50.8 percent of the total respondents gave correct answer. Finding of the study done by Mathewos et.al., (2013) about when PEP should be initiated was 15.4 percent which is lesser than that of my study where 34.4 percent of the respondents has given correct answer. In same study finding of the length of time to take PEP is 72.8 percent which is lower in my study that is 43.3 percent.

Only 23.3 percent of the respondents had knowledge that 0.3 percent is the risk percentage of getting infection after needle stick injury. This is lesser than study finding of Lamichhane et.al.,(2012) where 46 percent nurses were aware of correct risk of getting infection. With respect to the ideal PEP drug regimen, nearly half 47.8 percent of the participants correctly stated the expanded three drug regimen. This finding is supported by the study of Aminde et.al., (2015) which showed 30.0 percent of the respondents had knowledge regarding PEP of HIV drug regimen. Only less than half of the respondents have correct information because there may not be the continuing nursing education programme on PEP of HIV and nurses are not updated to the knowledge.

This study found that maximum respondents 84.4 percent had taken care of patient with HIV in the past and finding of this study was supported by a similar type of study done on nurses in Cameroon by Aminde et.al., (2015) 67.5 percent of the respondents has exposure to HIV in the past. The finding of this study showed that less than half (47.8%) of the respondents has adequate knowledge regarding PEP of HIV. The knowledge level of this study is lesser than of the study conducted in Chitwan Medical College (CMC) where 68 percent respondents had fair level of knowledge. This may be because of inadequate training and no provision of protocol for PEP of HIV in hospital.

Conclusion

The study concluded that less than half of the respondents had adequate knowledge on PEP of HIV and knowledge level of nurses was not affected by age, work experience and working department. Thus, nurses need to improve their level of knowledge on PEP of HIV by participating in different training programs and in service education related to PEP so that they can manage timely in case of accidental exposure.

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