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**Research Article**

# Knowledge, attitude and practice towards HIV post-exposure prophylaxis of health professionals of Gimbi town in Ethiopia: a cross-sectional study

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## ABSTRACT

**Background:** According to World Health Organization (WHO) estimation, about 2.5% of all human immunodeficiency virus (HIV) cases among health workers worldwide are due to the result of exposures to risky conditions. Post exposure prophylaxis (PEP) treatment has been shown to reduce the risk of HIV infection significantly if administered shortly following exposure. However, it has been shown that there is knowledge gap, lower degree of utilization and limited acceptance rate of the method by health care workers (HCWs) in resource limited settings. Therefore, this study aimed at assessing the knowledge, attitude and practice of HIV PEP use among health care workers of Gimbi hospital and Gimbi health center in Ethiopia.
**Methods:** Facility based descriptive cross-sectional study was undertaken from February, 1 - 30, 2013. Pretested structured questionnaires were used for data collection. SPSS version 20.0 was used to analysis data. Chi-square ($X^2$) was employed to assess association between knowledge, attitude and practice of PEP following HIV.
**Results:** In this study, all of the study subjects heard about HIV PEP. More than half of them (54.2%) could correctly identify the drugs used for HIV PEP. While, 60 (83.3%) of the study subjects had positive attitude toward PEP use. Half of the study subjects had ever been exposed to HIV risk condition of whom only 6 (16.7%) had ever used PEP. No association had been obtained among knowledge, attitude and practice of the study subjects.
**Conclusion:** In this study very low rate of PEP utilization up on exposure to HIV risk conditions was seen even though the significant proportion of these professionals had adequate knowledge and positive attitude toward PEP. Much work had to be done by policy makers to increase the uptake of the method by health care workers to mitigate the rising epidemic of HIV/AIDS in the country.

**Keywords:** PEP, Health care workers, Gimbi, Ethiopia

## INTRODUCTION

The HIV/AIDS epidemic is one of the major public health threats especially in sub-Sahara countries. Globally, about 35.3 million people were living with HIV in 2012 which is an increase from previous years as more people are receiving the life-saving antiretroviral therapy. The prevalence of HIV/AIDS continues to increase and it is expected that over 90 million people will ultimately be infected in Africa alone. On the other hand, there were 2.3 million new HIV infections and 1.6 million AIDS deaths in 2012 globally.[1]

One of the best strategies to halt this fustily growing epidemic of HIV/AIDS is antiretroviral therapy (ART). Since its introduction, HIV transmission rate has dramatically decreased in different situations like mother to child transmission, the sexual transmission of HIV through genitals and as pre-or post-exposure prophylaxis

for uninfected people exposed to HIV.[2-5] This is evidenced by data obtained from animal's studies[6,7] and a case control study of post exposure prophylaxis following needle stick injury in health care settings.[8] According to the centers for diseases control and prevention (CDC), individuals who took zidovudine monotherapy following occupational exposure were less likely to acquire HIV as compared to those who did not take medication.[8,9]

Therefore, providing relevant information on PEP for the health care professionals would help to prevent the transmission of HIV, identify unsafe practices, and reduce anxiety.[10] However, different studies indicated that there is an information gap in the health care set ups. For instance study done in London indicated that 93% of junior doctors had heard of PEP but fewer were aware that it reduced the rate of HIV transmission.[11] A study in Kenya also showed among those who were knowledgeable, only 45% sought HIV PEP. The main reason for not seeking PEP among this group was lack of sufficient information (35%) followed by fear of the process and what could follow (28%).[12] Similarly, the finding reported from south west Ethiopia showed that 83.9% of participants had an inadequate knowledge about PEP of HIV and 81.6% of those exposed did not use PEP.[10] Moreover, there is a lack of published work in the study area (Ghimbi, Ethiopia).

Therefore, the present work is aimed at assessing the knowledge, attitude and practice of HIV PEP use among health care workers in Gimbi hospital and Gimbi health center in Ethiopia.

## METHODS

The study was conducted from February 1-30, 2013 among health care workers of Ghimbi hospital which is located at 441 km to the west of Addis Ababa; the capital city of the country. A descriptive cross sectional study was undertaken among all health care workers of this hospital who are engaged in direct patient care and were voluntary to participant. Accordingly, 72 volunteers had been included and data was collected using pretested structured and self-administered questionnaires. In this study the following terms were operationally defined.

Adequate knowledge: When respondents correctly answer ≥75% of the knowledge questions.

Exposure to HIV risk condition**:** HWs exposure to HIV risk condition such as blood, patients/ clients body fluids, needle pricks/sharps injury at work place.

Positive attitude: Those respondents who able to answer ≥60% of total attitude questions.

Post exposure prophylaxis: is an emergency medical response that can be used to protect individuals exposed to HIV.

Practice: Using PEP when they have been exposed to HIV risk condition.

### *Data processing and analysis*

The collected data was checked for completeness and consistency, and was analyzed using SPSS version 20.0. For the presence and absence of association among the knowledge, attitude and practice of the respondents about PEP, chi-square(x2) was performed and considered to be significant if $p<0.05$. The result was presented using tables & graphs.

### *Ethical consideration*

Ethical clearance was secured from Wollega University, pharmacy department. Then informed consent was obtained from study subjects before the actual study began.

## RESULTS

In this study the response rate was as high as 92.3%. Out of a total of 72 study subjects, 41 (56.9%) were female and 31 (43.1%) were male and 43 (59.7%) of the respondents fall between 25-34 years, and majority of them 56 (77.8%) were hospital workers. All study subjects had ever heard about HIV PEP. More than half of the subjects knew the correct drugs, initiation time and duration of PEP treatment as shown on Table 1 below. Similarly, majority (70.8%) of the study subjects believed that the benefit of using PEP outweighs its risk. Comparing among the professions 6 (85.7%) of Doctors could identify the drugs used for PEP, followed by nurses 28 (62.2), while none of the midwives could identify the drugs.

**Table 1: Response of study subjects for selected knowledge and attitude questions, Gimbi, Ethiopia, Feb 2013.**

| Variables | Category | Response rate |
|---|---|---|
| Ever heard about HIV PEP | Yes | 72 (100) |
| | No | 0 (0) |
| Drugs used for PEP | First line HAART | 39 (54.2) |
| | ZDV only | 33 (45.8) |
| Initiation time for PEP | Within 2 hrs of exposure | 40 (55.6) |
| | >2 hrs of exposure | 32 (44.4) |
| The duration of PEP treatment | 28 days | 49 (68.1) |
| | <or> 28 days | 23 (31.9) |
| PEP reduces likelihood of HIV infection | Yes | 61 (84.7) |
| The benefit of PEP outweigh their risk | No | 11 (15.3) |
| | Yes | 51 (70.8) |
| | No | 21 (29.2) |

***Knowledge of the study subjects about HIV PEP***

As depicted on Figure 1, over all 39 (51.2%) of the subjects had adequate knowledge about HIV PEP. Specifically, 7/9/ (77.8%) laboratory workers, 27/45 (6%) nurses, 4/7 (57.1%) medical doctors, ¼ (25%) health officers and 0/7 midwives had adequate knowledge about HIV PEP.

***Attitude of study subjects towards HIV PEP***

In this study 60 (83.3%) of the study subjects had positive attitude towards PEP use. Regarding attitude among the professions, all the laboratory workers 9 (100%), All the midwives 7 (100%) and all health officers 4 (100%) have positive attitude whereas 36 (80%) of nurses and 4 (57.1%) of medical doctors had so. See Figure 2 for better illustration.

***HIV PEP utilization of the study subjects on exposure***

As shown in Table 2, half of the study subjects had ever been exposed to HIV risk condition. However, only 6 (16.7%) among those exposed to HIV risk condition had taken PEP. Surprisingly, none of the laboratory workers and midwives has used the PEP treatment following exposure (Table 2).

**Table 2: Practice of PEP after exposure, Gimbi, Ethiopia, Feb 2013.**

| Variables | Category | Professions | | | | | |
|---|---|---|---|---|---|---|---|
| | | Medical doctor N (%) | Laboratory workers N (%) | Nursing N (%) | Health officer N (%) | Midwives N (%) | Total N (%) |
| Ever exposed | Yes | 6 (85.7) | 6 (66.7) | 19 (42.2) | 2 (50) | 3 (42.9) | 36 (50) |
| | No | 1 (14.3) | 3 (33.3) | 26 (57.8) | 2 (50) | 4 (57.1) | 36 (50) |
| Used PEP after exposure | Yes | 1 (16.7) | 0 | 3 (15.8) | 2 (100) | 0 | 6 (16.7) |
| | No | 5 (83.3) | 6 (100) | 16 (84.2) | 0 | 3 (100) | 30 (83.3) |

***Assessment of association among outcome variables***

The study showed that there was no significant association between level of respondent's knowledge and attitude (p>0.2) as well as between knowledge and practice (p> 0.07). It further indicated that practice of HIV PEP was not associated with the attitude of the respondents in this study (p>0.1).

## DISCUSSION

The study was attempted to assess knowledge, attitude and practice of HIV PEP use among health care workers of governmental health institutions of Ghimbi town.

All of the study subjects in this study had ever heard about HIV PEP which was similar with a cross-sectional survey in Nigeria in which 97% of the respondents had heard about PEP. However, the proportion of respondents who could correctly identify the drug regimens used for PEP (54.2%) is higher in this study as compared to the one reported from Nigeria (30.9%).[13] Similarly, it is also much greater than the study done in Mumbai hospital of India , which showed that none knew exactly which drugs were to be used.[14] The present work indicated that 55.6% of respondent had awareness about the correct time for initiation of PEP after exposure which is lower when compared with the study done in India where 64% of study subjects have awareness. Generally, when compared across the profession, the laboratory professionals, nurses and doctors in our study had better knowledge about initiation time for PEP, than their respective counter parts of the study done in India.[15]

Concerning the duration of PEP treatment 68.1% of study subjects knew the correct duration which is much greater than the results of the study done in Mumbai hospital of India, in which only 4 respondents or 6% knew the correct duration of PEP.[14] This study also showed that 6 (85.1%) doctors and 28 (62.2%) of nurses knew the correct duration of PEP treatment which is much larger when compared with the study done in Hospital Sungai Petani of Malaysia which showed only 17% of doctors and 15% of nurses knew the correct duration for PEP treatments.[16]

This study showed that 33 (45.8) had inadequate knowledge about PEP but the study done in south west Ethiopia showed that 83.9% of the subjects had inadequate knowledge about PEP of HIV risk exposure. However, similar to the finding from south west Ethiopia, this study revealed that 30 (83.3%) of those exposed did to HIV risk conditions didn't use post exposure prophylaxis.[10] This highlights the need for organized on job training for health care workers in health facilities of Ethiopia as well as identifying and addressing barriers of non-use if the country's plan of creating zero new HIV infection to be a reality.

Lastly, limitation of the present study is mainly related to the fact that data collection was done using self-administered questionnaires, the completeness and reliability of the information obtained from the respondents might not be assured.

## CONCLUSION

In general, some of the findings of this study are consistent with what had previously been reported. Accordingly, more than half of the health workers had adequate knowledge and positive attitude whereas majority of those exposed to HIV risky conditions didn't use PEP. There is significant interprofessionals' variation regarding the level of knowledge, attitude and practice of HIV PEP showing the importance treating one profession separately from the others for optimal prevention of HIV. Last but not least, much has to be done to further increase the workers' knowledge, attitude and of all to promote the use of HIV PEP through organized intervention programs as well as by ensuring the supply of the medications used for PEP beside the treatment of established infection.

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