

Assessment of Knowledge and Attitude Towards HIV Post-Exposure Prophylaxis Among Health Workers at Jimma University Medical Center, Jimma Town, South West Ethiopia

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Abstract

Background

Health care workers are at risk of acquiring Human Immune Deficiency Virus infections, because of occupational exposure to blood and other body fluids. Post exposure prophylaxis has been associated with an 80% of reduction in the risk of HIV infection among Health Care Workers exposed to Human Immune Deficiency Virus/Acquired Immunodeficiency syndrome on work. Studies addressing knowledge and practice about Post exposure prophylaxis are also lacking in developing countries including Ethiopia. Therefore, this study was aimed to assess knowledge, attitude and practice of health care worker towards post exposure prophylaxis at Jimma university medical center.

Objectives

The main objective of this study was assess knowledge, attitude and practice of health workers about post-exposure prophylaxis in Jimma medical center Jimma town, south west Ethiopia, 2018.

Methods

A cross sectional study design was carried out from February to March, 2018. A total of 338 health workers participated in study from Jimma university medical centers in Jimma town. Data was collected using pre tested self-administered questionnaire. Before analysis the collected data was coded and checked for completeness.

Result

A total of 195 health workers participated in this study. 129 (63.9%) of health care worker had adequate knowledge about Post exposure prophylaxis. 143(73.33%) of them had strong believe as post-exposure prophylaxis can reduce the probability to be infected. Regarding the attitude of most of the respondents, 147 (75.4%), was favorable whereas 48 (24.6%) had unfavorable attitude towards post-exposure prophylaxis.

Conclusion

As a conclusion, significant proportion of study subjects had good knowledge and favorable attitude towards PEP. Therefore, majority of health care worker has no formal training regarding post-exposure prophylaxis for HIV.

Background

The first case of HIV in Ethiopia was reported in 1984, Since then HIV/AIDS has become a major public health concern and leading government of Ethiopia to declare as a major public health emergency in 2002 [1].

HIV is a chronic infection caused by Human Immune Deficiency Virus, type 1 and type 2, which infect human only. The major mode of transmission was sexual contact, but various mode of transmission may be classified as occupational (work setting) and non-occupational (other methods than in work setting). Occupational or work place exposure is when someone work in a health care setting is potentially exposed to material infected with HIV [2-4].

Health care workers are at risk of acquiring infection HIV, because of occupationally exposed to blood and other body fluids. The first case of documented sero conversion was reported in 1984, since then, there has been a great concern about the occupational transmission of blood borne pathogens. Approximately 1000, new cases occur each year worldwide due to accidental exposure. It is estimated that 4.4% (range 0.8% to 18.5%) of all HIV infections amongst HCWs are due to occupational injuries. It is further estimated that at least half of these cases occur in sub-Saharan Africa [5].

The risk for occupational transmission varies with the type, severity of the exposure, source patient stage of disease, length of time of contact, potential port of entry, and presence of more virulent strains of virus. From research findings, the estimated risk for HIV transmission after injury through a needle contaminated with HIV infected blood and after mucous membrane, exposure is 0.3% and 0.1% respectively [6-7].

Post exposure prophylaxis (PEP), is a short term ARV treatment applied to reduce likelihood of HIV infection after potential exposure to HIV either occupational or non-occupationally, within the health sector PEP should be provided as a comprehensive universal precaution package; that reduce staff exposure to infectious hazards at work place. PEP has been associated with 80% reduction in the risk of HIV infection among health care workers exposed on job [7-8].

Before deciding to recommend PEP, the clinician must assess the risk of exposure, as well as other factors such as exposed workers willingness, and ability to take ARV drugs, and after assessment the exposed workers should have to decide/weigh/the possible benefit of PEP in relation to risk of transmission against the potential toxicity of the PEP regimen [9].

HIV is a serious health problem costing the lives of many people including the health care workers. A study done in Yuan province in China, among 33 HCWs revealed that more than half of the HCWs reported that they were not aware of local laws or rules regarding PEP [10]. These exposures estimated to be 200-5000 HIV infections [10-17]. The reason was lack of information about the existence of the PEP service, which accounts 48%. Only 24.2% took PEP medication after exposure, only 1 respondent's finished full course of treatment. Reason for not taking PEP after exposure were not considering PEP as effective, ignorance of risk of potential of infection, lack of knowledge of PEP, lack of opportunity, unavailability of service and fear of side effects of drugs [18-20].

The study conducted in London showed that most of them had heard PEP (93%), but fewer were aware that it reduced the rate of HIV transmission (76%). Only eight percent could name the drug recommended in the guidelines and four percent couldn't name any. Almost one third (29%) did not know with what period PEP should be administered. Majority of respondents (76%) had experienced high risk exposure to potentially infectious materials at some stage in their careers, however about 18% only had sought advice about PEP following exposures [21].

A survey conducted in India to assess level of PEP guidelines awareness among 70 health care workers reveal that 20% of respondents were aware time risk of transmission, about one third identified all high risk exposures correctly, (78%) of them correctly stated initial steps, washing of the site with water and soap. Sixty-four percent correctly stated PEP should be initiated within one hour of injury. Name knew axially which drugs to be taken, 42% were aware of the use of one drug (ZDV) only. Only 6% knew correct duration of PEP [22].

Another survey done in China on Yunnan province on 33 HCWs shows that, 52% consider themselves as high risk, 10% believes that occupational exposures was unavoidable, while 15% believes risk was minimized by using care full following of universal precaution. Working in surgery department, gynaecology department, Emergency room was considered by respondents to confer highest risk for occupational exposure. Fifty percent reported occupational exposure. Four of respondent even not take HIV screening test after exposure.

Study conducted in Serbia showed that, among the 230 health care professionals, 164 (74%) agreed that all inpatients should be tested for HIV. The majority of health care workers (84.2%) agreed that their personal protection was more important than the confidentiality of patient's HIV/AIDS status. Twenty-three subjects (10%) agreed that health care workers should be offered the option to be excused from care for an HIV/AIDS patient and 22 professionals (9.9%) thought that HIV-positive status was the individual's own fault. Ninety-six subjects (43%) agreed with restricting HIV-positive health care workers from practicing medicine.

Nurses and laboratory technicians agreed with this statement more frequently than doctors and dentists. Sixty-five respondents (29%) protected themselves regularly, using appropriate barriers (gloves, glasses and mask). There was no significant difference between the groups. If the HIV status of a patient was known, 133 respondents (85%) would use additional protection. Nurses and laboratory technicians used additional personal protection more frequently than doctors and dentists.

Most participants, 193 (87%) had not been informed about guidelines for protection against HIV, and protocols of post exposition prophylaxis or such protocols did not exist at their workplaces. Twenty-five professionals (11%) received education about HIV and AIDS in the last year and 81 (36.5%) within the last five years. There was no significant difference between the groups in education about HIV and AIDS. The majority of medical personnel (77%) expressed a need to be further educated about HIV and AIDS. Thirty-seven per cent of respondents had previously been tested for HIV status, with no significant difference between the groups [23].

Study conducted in Daresalam, Tanzania on 316 HCWs showed 53.8% of respondents exposed to injuries. Out of exposed only 41 had taken PEP. About one third knew initial steps to be followed after exposure. The mean time to start PEP was 13.5hours. Approximately 40% failed to use PEP for full length of time prescribed. The main reason for shorter duration was adverse effects associated with ARV Drugs [24].

Study done on assessment of knowledge and awareness of PEP in Nigeria among 186 family physicians shows that. Ninety eight percent of respondents were aware of concepts of PEP. Eighty two percent had aware of existing PEP protocols in their work facilities. One hundred fifty eight (91.3%) reported that they were aware at risk of accruing HIV from work place. Sixty nine percent had history of needle stick injury. Only 21% of those had injury had received PEP around half (51.4%) correctly identified risk of transmission after NSI to be around three in thousands injures. Majority (81.7%) and 88.5% identified mucocutaneous exposure and percutaneous exposures were high risk.

Combination of cohort and cross sectional survey done in Kenya, at Kenyatta national hospital showed that, majority of suffered from occupational exposure the cohort study was females (65.5%). Majority of those who suffered were Nurses (54%). Doctors (24%), Lab staff (11.5%) and support staff (10.5%).

Method and Materials

Study Area and Period

Jimma university medical center is the new name given to the former Jimma specialized hospital one of the oldest public hospitals in the country. It was established in 1930 E.C by Italian invaders for the service of their soldiers, but knows give service for the public found in the southwest Ethiopia for more than 10million people geographically, it is located in 352km southwest of Addis Ababa. The study will conduct from February 15 to June, 2018.

Study Design

A cross-sectional study design was employed.

Sample Size and Sampling Technique

The sample size was determined by using single proportion formula;

Sampling Technique and Procedure

The total sample size was distributed proportionally allocated among different health professionals involved in this Study and the study subjects were selected using simple random sampling technique.

Data Collection Instrument and Procedures

A questionnaire having the common Sociodemographic characteristics and questions that can assess the levels of their knowledge and, attitude towards PEP for HIV will be prepared in this study. The questionnaires was pretested prior to data collection on about 10% on another Health center in the other worked and correction will be done accordingly.

Data Quality Assurance

The data was cleaned before analysis and pre-test was done at Agaro general hospital. In addition training was given for data collectors.

Data Processing and Analysis

The collected data was coded and checked for completeness. Once data are coded and checked for completeness. Descriptive statistics was done to describe study variables.

Ethical Consideration

Ethical clearance of the proposal was obtained from Jimma University institutional Review Board and support letters will be presented to Jimma medical center hospital for permission to conduct the study.

The purpose of the study will be explained to the respondents and data will be collected after ensuring their willingness to give their response. Participants will be informed that the participation is voluntary. Confidentiality of participants will be maintained at all time.

Results

A total of 195 health workers participated in this study with 98% response rate the remaining health care worker are refused to participate from those 121 (73.3%) were male 132 (67.6%) fall between 18-34 years, majority of them 156 (80.00%) have First Degree holders. 70 (35.89%) of the professionals were from inpatient ward. Almost half of the participants, 109 (55.89%), were Orthodox Christians and 136 (69.74%) were married in marital status. Of the total respondents, 79 (40.56%) were nurses, 21 (10.76%) midwives, 59 (30.25%) physicians, 19 (9.74%) laboratory and 17 (8.7%) were health officers.

Table 1: Socio demographic characteristics of respondent health care workers in Jimma University Medical center in Jimma town, Jimma Zone, June 2018

Socio demographic characteristics	Frequency	Percent
Sex		
Male	121	73.33
Female	74	26.66
Age		
18-25	13	6.6
26-30	49	25.12
31-35	70	35.89
36-40	44	22.56
41-45	16	8.2
46-50	3	1.53
Marital status		
Married	136	69.74
Single	48	24.60
Divorced	8	4.10
Widowed	3	1.53
Religious		
Orthodox	109	55.89
Muslim	73	37.43
Protestant	10	5.12
Catholic	3	1.53

Educational level		
Diploma	23	11.79
Degree	156	80.00
Master degree	16	8.2
Profession		
Medical Doctor.	59	30.25
Laboratory Tech.	19	9.74
Nurse	79	40.51
Health Officer	17	8.71
Midwife	21	10.76
Year of service		
Less than 2	57	29.23
2-4	65	33.33
5-7	37	18.97
8-10	23	11.79
11 and above	13	6.66
Working area		
Adult outpatient department	39	20.00
Adult inpatient department	70	35.89
Emergency department	31	15.89
Pediatric department	23	11.79
MCH	15	7.69
Operation room	17	8.71

Eight questions, with “Yes” (for correct answers) or “No” (for incorrect answers) response, were prepared to assess the knowledge of respondents about PEP for HIV and those respondents who scored greater than or equal to 70% were considered knowledgeable. Based on this more than half 129 (63.9%) the participants had adequate knowledge about PEP for HIV. 143 (73.33%) heard about PEP from formal training. Majority, 95 (48.71%) of the participants of the study answered that PEP is indicated for person who is exposed to HIV risk if the patient is known to be HIV positive. 101 (51.79%) knew when to initiate PEP. One hundred four (53.33%) of the re-spondents knew the maximum acceptable delay to take PEP from the study participants 93 (47.69%) answered that PEP for HIV is efficient, (Table 2)

Table2: Response of Health Care Workers to each question that assess their knowledge about PEP in Jimma University Medical center in Jimma Town, Jimma Zone June, 2018

Knowledge questions	Responses	n	%
Heard about PEP	Yes	143	73.33
	No	52	26.66

When do you think PEP should be indicated?	When the source patient is at high risk for HIV	57	29.23
	When the patient is known to be HIV positive	95	48.71
	When the HIV status of the source is unknown	27	13.84
	For any needle stick injury in the work place	16	8.2
What is the maximum delay to take PEP?	24h	17	8.7
	48hr	62	31.79
	72hr	104	53.33
	12hr	12	6.15
What is the preferable time to take PEP?	Within an hour	101	51.79
	After 6 hour of exposure	29	14.87
	After 12 hour of exposure	14	7.17
	After 72 hour of exposure	51	26.15
What is the Effectiveness of PEP?	100%	41	21.02
	80-100%	93	47.69
	60-70%	42	21.5
	30-50%	12	6.15
	20-30%	7	3.5
What is the length of time to take PEP?	For 28 days	132	67.69
	For 40 days	19	9.74
	For six moths	31	15.89
	For life time	13	6.66
Have you attend any training about PEP?	Yes	67	34.35
	No	128	65.64
Do you know about the PEP guideline?	Yes	45	23.17
	No	150	76.56

Attitude Towards Post Exposure Prophylaxis

A seven item question was used to assess participants' attitude towards PEP for HIV and those who score 70% and above were considered as having good attitude. Majority of the respondent, 176 (90.25%) and 167 (86.64%), agreed on the importance of PEP for HIV and the availability of PEP guidelines in the hospital or in their work place. 143 (73.33%) belief on PEP for HIV to reduces the likelihood of being infected by HIV after being exposed, 122 (62.56%) of them had strong believe that it can reduce the probability to be infected and also of the respondents agreed that PEP prevent further infection. (Table 3).

Table 3: Attitude of HCWs about PEP in Jimma University medical center in Jimma Town, Jimma Zone; June, 2018

Attitude Question	n	%
Do you think PEP is Important?		
Yes	176	90.25
No	19	9.74
Do you believe PEP is against my religion /traditional beliefs?		
Agree	20	6.15
Disagree	180	92.30
Partially agree	3	1.53
Do you believe PEP reduces likelihood of being HIV positive?		
Yes	143	73.33
No	31	15.89
I am not sure	21	10.76
Do you believe PEP to prevent further infection?		
Agree	122	62.56
Disagree	61	31.28
Partially agree	12	6.15
Do you think there should be PEP guideline in work areas?		
Agree	167	85.64
Disagree	16	8.20
Partially agree	12	6.10
Do you believe that training of PEP is important for a behavioral change?		
Agree	185	94.87
Disagree	10	5.12
Partially agree	-	

Discussion

In health care settings there is an increased risk of HIV transmission to HCWs because of occupational exposure to blood borne infection from needle sticks. Evidence suggests that treatment with antiretroviral drugs soon after occupational exposure to HIV decreases the risk of infection.

The main objective of this study was assessed the knowledge, attitude and practice towards PEP for HIV among HCWs who were directly involved in care of patients in Jimma University medical center.

In this study majority of the health care worker responded correctly to eight question prepared to assess their knowledge about PEP, the study participants have good knowledge. A study conducted in Zimbabwe showed that 65% of the respondents scored less than 50% of the questions regarding knowledge which was regarded as poor knowledge [25].

In this study, among all study participants 73.33% have heard about PEP for HIV. This result was lower When we compare it with other study which was conducted in a tertiary hospital in Nigeria (97%) and Addis Ababa city 83.1% (26.28). This is might be due to difference in period of conduction and training opportunity. In study done in Asella Teaching Hospital among all study participants 87.6% have heard about PEP for HIV this was higher than this study and also a study conducted in Gondar University Hospital that shows 92.8% participants heard about PEP [13]. The difference might be due the time gap and difference in study participants.

The main source of knowledge for participants in our study was from training (39.45%) which was differ from the study done in Cameron This is contrary to the findings of Jharna and colleagues among Nurses in Nepal [26] who's knowledge on PEP was essentially from "self-learning". Owolabi and colleagues in Nigeria [27].

In this study the most common source of information about PEP was training which is similar to the study conducted in Nigeria That the most common sources of respondents' information about PEP are seminar/workshops and ward rounds imply that post-exposure prophylaxis is a topic least discussed and paid attention to even in societies where a lot of AIDS campaign goes on all the time [27].

The present work indicated that 51.8% 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' awareness The difference might be because of the difference on the level of awareness among the different populations. But on other findings from study con-ducted in Mulago Hospital in Uganda with only 22.3% being sure it should be started within an hour of exposure (14, 27). Study conducted in Gondar University Hospital, 50.8% of respondents stated the exact time when to initiate PEP [25].

In this study about 67.69% of the study participants knew the duration of PEP almost similar to study done in Gimbi 68.1% 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 [29].

In this study 179 (91.79%) considered themselves to be at risk of HIV acquisition at their work place. Among all of the respondents, 8.2% were exposed for HIV risky conditions and of these exposed respondents, no one took PEP this indicate that the health care worker are not practicing PEP. Health care workers practicing in poor countries like Ethiopia are more exposed to HIV occupational exposure and less likely to use PEP than those working in developed countries [29].

In the study conduced in Gonder, 66 (33.8%) of the respondents have been exposed for HIV risky conditions. This finding is higher than the result found in a study another study conducted in south India in which 74.5% of respondents were exposed [30]

62.5% The respondent agree that PEP treatment has been shown to reduce the risk of HIV infection by It has abundantly been demonstrated in the literature, that there is poor implementation of PEP among medical doctors and other Health Care Workers across various countries, especially in the developing countries where protective supplies are limited and the rates of HIV infection in the patient population are high [31-37].

Conclusion

In general, the findings of this study revealed the respondent have good knowledge but practice of HCWs towards PEP for HIV is inadequate. Positive attitude towards PEP Therefore, a formal training for all HCWs regarding PEP for HIV should be provided to. Even though many of the HCWs had HIV risky exposure, the number of HCWs that were exposed but did not take the PEP for HIV can be considered as low.

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