

doi: <http://dx.doi.org/10.18203/2319-2003.ijbcp20150393>**Research Article****Assessment of attitude and practice toward post-exposure prophylaxis for HIV among healthcare workers at a tertiary care hospital**Punya Suvarna¹, G. Shivaprakash^{1*}, L. C. Pallavi²¹Department of Pharmacology,
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commercial use, distribution,
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medium, provided the original
work is properly cited.**ABSTRACT****Background:** Prevention and control of AIDS are now a major problem as there is no vaccine or effective-curative treatment for this disease. Health care workers (HCWs) are at increased risk for HIV infection. There were inadequate studies about post-exposure prophylaxis (PEP) of HIV among HCWs in southern India. Hence, we are conducting this study to assess the attitude and practice of PEP toward HIV among HCWs.**Methods:** The cross-sectional study was done among HCWs (doctors, surgeons, nurses, and dentists). Pre-tested questionnaire was given and requested to fill it after explaining the purpose of the study. About 65% and above correct answers was considered as adequate response. Values expressed as mean, proportions and analyzed by SPSS version 17.**Results:** Overall 6 (66%) of the total 9 questions in attitude were answered satisfactorily, and thus can be said to have good attitude regarding PEP in HIV. Only 16 people (10%) of the participants had taken PEP regimen. Among those who took PEP, the responses for the questions about the time of initiation of regimen, completion of prescribed duration of therapy and checking of HIV status after completion of regimen were unsatisfactory. Among the professions, surgeons were exposed more compared to other professions.**Conclusion:** Overall attitude toward PEP was positive among all the HCWs. The practice of PEP was not satisfactory even after exposure to risks. Informing HCWs about completing treatment course and post-treatment testing is important to prevent HIV transmission. Awareness of PEP should be improved among health professionals, by regular training meetings and introducing the guidelines of the safe practices in the academic syllabus of all the professions.**Keywords:** Post-exposure prophylaxis, Attitude, Practice, Profession**INTRODUCTION**

Post-exposure prophylaxis (PEP) refers to the comprehensive management given to minimize the risk of infection following potential exposure to blood-borne pathogens (HIV, hepatitis B virus, hepatitis C virus). This includes counseling, risk assessment, relevant laboratory investigations based on informed consent of the source and exposed person, first aid and depending on the risk assessment the provision of short-term (4 weeks) of antiretroviral drugs, with follow-up and support.¹ India is estimated to have the third highest number of estimated people living with HIV/AIDS, after South Africa and Nigeria.²

Health care workers (HCWs) are at a great risk to get infected as an occupational hazard. They are at risk of blood-borne

infection transmission through exposure of a percutaneous injury (e.g., needle stick or cut with a sharp instrument), contact with the mucus membranes of the eye or mouth of an infected person, contact with non-intact skin (particularly when the exposed skin is chapped, abraded, or afflicted with dermatitis), or contact with blood or other potentially infectious body fluids.³

Prevention and control of AIDS are now a major problem as there is no vaccine or effective-curative treatment for this disease. So it is necessary for every HCWs to have a positive attitude and good practice to deal on accidental exposure. This will reduce the spread of the disease and reduce apprehension among them. There were inadequate studies about PEP of HIV among HCWs in southern India. Hence, we are conducting this study with the aim to assess the attitude and practice of PEP for HIV among HCWs.

METHODS

Study design

The cross-sectional study was carried out in tertiary care teaching hospitals, i.e., KMC Hospital, Attavar, Government Wenlock Hospital and Manipal College of Dental Sciences (MCOCS), Mangalore.

Study population

Health care professionals (doctors, surgeons, nurses, and dentists) of KMC Hospital, Attavar, Government Wenlock Hospital and MCOCS, Mangalore. All the health care professionals who were willing to participate in the study and who had given informed consent were enrolled for the study. Medical students, interns, student nurses, 1st year post-graduates, and maintenance staff were excluded from the study.

Sample size and data collection

The sample size was calculated assuming 50% of healthcare professionals are aware of post-exposure prophylaxis for HIV. Taking 85% power and 95% confidence level the sample size was found to be 170. Equal number of health care professionals, from each group, was asked to fill out the questionnaire.

The study was approved by the Institutional Ethics Committee of Kasturba Medical College, Mangalore. After the approval from Ethics Committee, permission was obtained from the concerned authorities of the hospital for data collection. Pre-tested semi-structured questionnaire was given to the health care professionals and requested to fill the questionnaire after explaining the purpose of the study and after obtaining written informed consent.

Scoring of attitude and practice

Questions, open and close ended type, were prepared to assess the attitude and practice of respondents about PEP for HIV. A nine-item questionnaire was used to assess participant's attitude toward PEP for HIV and those who scored 65% and above were considered as having good attitude. To assess the practices followed by the participants, eight questions were asked, and those who answered 65% of the questions correctly were considered to be satisfactorily practicing PEP for HIV.

Statistical analysis

Data were entered in Microsoft Office Excel worksheet and analyzed using statistical software SPSS version 17.0. Descriptive statistics such as mean, proportions, and standard deviation was used for expressing the results. For qualitative

data, Chi-square test was used and $p < 0.05$ was considered as statistically significant.

RESULTS

Among the respondents, females were more compared to males and many HCW belonged to younger age group between 20 and 30 years. Most of them had work experience of more than 3 years, and majority belonged to Hindu community. Most of them had a master's degree education, and total number of participants was equally distributed among different professions of doctors, surgeons, dentists, and nurses (Table 1).

Table 1: Sociodemographic characteristics of HCW.

Variables	N (%)	p
Age		
20-30	113 (67)	0.00*
31-40	37 (22)	
41-50	13 (8)	
50-100	5 (3)	
Sex		
Male	70 (41)	0.02*
Female	100 (59)	
Work experience		
Less 6 months	11 (8)	0.00*
6 months to 1-year	20 (15)	
1-3 years	46 (35)	
≥3 years	56 (42)	
Marital status		
Married	78 (46)	0.31
Single	91 (54)	
Religion		
Hindu	116 (69)	0.00*
Christian	42 (25)	
Muslim	6 (4)	
Others	5 (3)	
Profession		
Medical doctors	42 (25)	NS
Surgeons	42 (25)	
Nurse	42 (25)	
Dentist	43 (25)	
Education		
Masters	81 (48)	0.009*
Bachelors	51 (30)	
Diploma	33 (19)	
Certificate	4 (2)	
Super specialty	1 (0.6)	

Values are expressed as percentages. Chi-square test applied to test the value of significance, $p \leq 0.05$ considered as significant, HCW: Health care workers

Majority believed in PEP requirement and its effectiveness in reducing the HIV spread. Most HCWs felt that its intake would not damage their image in society, agreed to take the regimen following sharp injuries which is common among them and to assess their HIV status after the completion of the regimen intake. For the question regarding its administration to all HCWs irrespective of exposure risk, there was a mixed response. Twenty-eight percent want it to be taken, 55% do not agree for its routine administration and 16% were not sure. Most of them felt the requirement of counseling along with the drug regimen, government sponsorship for the treatment and 76% wished to attend the regular training meetings regarding preventive measures. Overall more than six question items were answered satisfactorily and thus can be said to have good attitude regarding PEP in HIV. Seventy-six percent of medical doctors, 68% of surgeons, 50% of dentists, and 29% of nurses do not recommend general prophylactic regimen without risk (Table 2).

Thirty-one percent of the HCWs were exposed to the HIV risks, 56% were not exposed and 13% don't remember. Only 16 people who required that is, 10% of the total HCWs have taken PEP regimen. Among the 16, 5 were medical doctors, 7 were surgeons, and 4 were nurses. None of the participated dentists had taken the PEP. Among those who took PEP regimen only 6 of them have taken it within 2 hrs of exposure. Only 10 of the 16 HCWs had completed the

regimen, and all the 10 have tested the HIV status after the completion of the course. Among the professions, surgeons were exposed more compared to other professions and all HCWs wear protective clothing most of the time, except for nurses as only 43% wear protective clothing during handling of blood and body fluids (Table 3).

DISCUSSION

This study assessed the attitude and practice of PEP against HIV among doctors, surgeons, dentists, and nurses who routinely interact with patients in Mangalore, located in the state of Karnataka, India.

The obtained satisfactory responses to attitude could be attributed to the fact that most of the HCWs belong to teaching faculty and are constantly updated with changing guidelines. The majority of participants believed in PEP requirement and its effectiveness in reducing the HIV spread. This is similar to the beliefs among HCWs in Ethiopia (98.5%).⁴ For the question regarding its administration to all HCWs irrespective of exposure risk, there was a mixed response that was similar to the Ethiopian study; 15.4% agree, 72.8% disagree while 11.8% were not sure. Among the different groups, 76% of medical doctors, 68% of surgeons, 50% of dentists and 29% of nurses do not recommend general prophylactic regimen without

Table 2: Attitude of HCW about HIV-PEP.

Question	Response	Overall n (%)	Medicine n (%)	Surgeon n (%)	Dentists n (%)	Nurse n (%)
1. Is PEP regimen necessary?	Yes	158 (95)	41 (100)	41 (100)	41 (98)	35 (83)
	No	3 (2)			1 (2)	3 (7)
	Not sure	5 (3)				4 (10)
2. Is there a need for counseling along with PEP regimen?	Yes	158 (96)	41 (100)	39 (98)	40 (95)	38 (91)
	No	7 (4)		1 (2)	2 (5)	4 (10)
3. Do you believe PEP regimen reduces likelihood of being HIV positive?	Yes	132 (81)	37 (93)	37 (93)	38 (91)	20 (49)
	No	8 (5)	3 (8)	3 (8)	1 (2)	4 (10)
	Not sure	23 (14)			3 (7)	17 (42)
4. Would you take PEP regimen for any type of sharp injuries?	Agree	82 (50)	17 (42)	18 (45)	25 (60)	22 (52)
	Disagree	50 (30)	19 (46)	19 (48)	8 (19)	4 (10)
	Not sure	33 (20)	5 (12)	3 (8)	9 (21)	16 (38)
5. Do you think all healthcare workers should be administered prophylactic regimen, irrespective of risk exposure?	Yes	47 (28)	4 (10)	6 (15)	16 (38)	21 (50)
	No	92 (55)	31 (76)	28 (68)	21 (50)	12 (29)
	Not sure	27 (16)	6 (15)	7 (17)	5 (12)	9 (21)
6. Do you think the government should provide PEP regimen at all PHCs, free of cost?	Yes	158 (96)	41 (100)	40 (98)	41 (98)	36 (88)
	No	7 (4)		1 (2)	1 (2)	5 (12)
7. Would taking PEP regimen damage your image in the community?	Yes	12 (7)	1 (2)	2 (5)	3 (7)	6 (15)
	No	151 (92)	39 (95)	39 (95)	38 (93)	35 (85)
8. Would you attend regular meetings held to train health care workers regarding HIV preventive measures?	Yes	124 (76)	34 (83)	26 (63)	39 (95)	25 (61)
	No	40 (24)	7 (17)	15 (37)	2 (5)	16 (39)
9. Would you assess your HIV status after completion of the PEP regimen?	Yes	161 (98)	41 (98)	40 (100)	40 (100)	40 (95)
	No	3 (2)	1 (2)			2 (5)

Values are expressed as N: Number and percentages in parenthesis, PEP: Post-exposure prophylaxis, HCW: Health care workers

Table 3: Practice of PEP among HCW.

Question	Response	Overall n (%)	Medicine n (%)	Surgeon n (%)	Dentists n (%)	Nurse n (%)
1. Have you ever been exposed to HIV risks?	Yes	51 (31)	12 (29)	20 (49)	7 (18)	12 (29)
	No	91 (56)	22 (52)	17 (42)	26 (67)	26 (10)
	Don't remember	22 (13)	8 (19)	4 (10)	6 (15)	4 (10)
2. If Yes, how many times in the past 6 months?	Once	24 (44)	4 (40)	12 (55)		
	2-5	21 (39)	5 (50)	7 (32)		
	6-15	6 (11)	1 (10)	2 (9)		
	≥16	1 (2)				
3. Do you wear protective clothing when handling blood or body fluids?	Never	2 (1)		1 (2)		1 (2)
	Sometimes	43 (26)	8 (19)	7 (17)	5 (12)	23 (55)
	Always	121 (73)	34 (81)	32 (78)	37 (88)	18 (43)
4. Have you ever taken PEP regimen in your lifetime?	Yes	16 (10)	5 (13)	7 (18)		4 (10)
	No	147 (90)	36 (88)	34 (83)	42 (100)	35 (90)
5. If yes, how many times have you taken PEP regimen?	Once	16 (10)	5 (13)	7 (18)		4 (10)
	Twice					
	Thrice≥4 times					
6. Did you check your HIV status after completion of PEP regimen?	Yes	10 (6)	4 (10)	6 (15)		0
	No	2 (5)	1 (2)	1 (2)		
7. Within what time did you start taking PEP regimen after exposure?	<2 hrs	6 (4)	4 (10)	2 (5)		
	After 2 hrs but <6 hrs	5 (4)	1 (2)	4 (10)		
	After 6 hrs but <72hrs	1 (1)		1 (2)		
	After 72 hr	0		0		
8. Did you complete the prescribed duration of PEP regimen?	Yes	10 (5)	4 (10)	6 (15)		0
	No	2 (1)	1 (8)	1 (1)		

Values are expressed as N: Number and percentages in parenthesis, PEP: Post-exposure prophylaxis, HCW: Health care workers

risk exposure.⁴ Majority of them felt the requirement of counseling along with the drug regimen and 76% wished to attend the regular training meetings regarding preventive measures. Overall more than 6 question items were answered satisfactorily, and hence can be said to have a positive attitude regarding PEP against HIV.

In our study, 31% of the population have been exposed to HIV risks. It is similar to the exposures in Ethiopia (33.8%)⁴ and Nigeria (33%), but much lower as compared to studies carried out in Jimma (68.5%).^{5,6} In Ethiopia, 74.2% of the exposed population took PEP regimen with 46.9% taking it within 2 hrs of exposure and 79.6% completing the treatment; while in Nigeria, 23.1% took PEP regimen and all of them completing the course.^{4,5} In the study conducted in Gujarat, it was observed that 56.8% initiated treatment within 2 hrs and 94% completed the treatment.⁷ Only sixteen people who warranted treatment have taken PEP on exposure to HIV risks in our study. Seventy-three percent of our study population took personal protective measures at all times while handling blood or body fluids which is much better compared to interns in West Bengal study who wear gloves only 62.4% of the times.⁸ However, the results are better in West Bengal study compared to the nurses population in our study as only 43% wear it during handling of blood and body fluids. Only six of them started treatment at the right

time, ten completing the entire course and all of them have checked their HIV status at the end of the course. None of the nurses has taken regimen completely and checked the HIV status in the follow-up. Very few HCWs responded to practice question items as exposed risks that warranted PEP regimen was only 16. Nevertheless, the practice of PEP against HIV was inadequate as the score was <65% for question items for initiation time of PEP, completion of course, followup test. This can be improved by educative programs such as seminars and workshops regarding the safe practices of PEP.

CONCLUSION

Overall, the attitude toward PEP was positive among all the HCWs. The practice of PEP among the HCWs was not satisfactory even after exposure to risks. Informing HCWs about completing treatment course and post-treatment testing is important to prevent HIV transmission. Awareness of PEP should be improved among health professionals, by regular training meetings and introducing the guidelines of the safe practices in syllabus of all the professions.

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