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Original Research Article

Perception and practice of occupational safety measures against HIV infection among health care personnel in a tertiary health care facility of Ganjam district, Southern Odisha, India

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ABSTRACT

Background: Globally, 36.7 million people were living with HIV. The prevalence in India is estimated to be 0.26% and it is in the range of 0.21-0.25% in Odisha. The objectives were to assess the perception on HIV and the preventive practices among the health personnel in a tertiary level health facility of South Odisha.
Methods: This study was hospital based cross-sectional study. Place of study was OPDs, indoor wards, emergency Department of MKCG Medical College, Berhampur, Ganjam, Odisha, India. Study period was from December 2017 to February 2018. Study participants were all the health care workers present during the visit were interviewed using semi structured questionnaire. Sample size were 174 health personnel. Those who didn't give consent for the study were excluded from the study. Statistical tests used were percentage and proportion. Statistical software used-SPSS 16 version.
Results: Out of 174 respondents 67.8% were doctors, 14.9% staff nurses and 17.3% other professionals. Among safety measures, gloves, mask, apron and cap were used by 69%, 11.5%, 13.8% and 5.7% respectively. The patient's HIV status was enquired by 78.9% male health personnel during treatment. 90% female health personnel had come across HIV positive patients during treatment procedure. The knowledge about basic PEP regimen was present in 54.4% male and 80% female health personnel.
Conclusions: The study participants were not aware about all the mode of transmission. There is gap in knowledge and practices of safety gears. Perceptions and practice of doctors were no way better than other health personnel. Knowledge and practice of safety gear should be enforced by the hospital authority to keep its work force safe and healthy.

Keywords: HIV infection, Health care personnel, Occupational safety measures, Perception, Practice

INTRODUCTION

HIV and AIDS is one of the biggest challenges for the mankind. Globally 36.7 million people are living with HIV-with a global HIV prevalence of 0.8% among adults.[1,2] 1 Million people died of HIV-related illnesses worldwide.[3] The HIV prevalence in India is estimated at 0.26% and the prevalence in Odisha is in the range of 0.21-0.25%.[4] According to World Health Organization (WHO) report, the annual proportions of HCWs exposed to blood-borne pathogens was 2.6% for HCV, 5.9% for HBV and 0.5% for HIV, worldwide among which the majority was from developing regions (i.e. 40-65% of HBV and HCV infections in HCWs were attributable to

percutaneous occupational exposure).[5,6] With advancement in medical technology, more and more invasive procedures, places, the health care personnel at risk of blood-borne pathogens like HIV.[7] Almost 2.5% of HIV infections in health-care workers were due to per-cutaneous injuries that resulted in 1000 HIV infections leading to deaths as well as substantial disability. Increased awareness of safe practices to prevent HIV infection results in people being more careful and ultimately decreases infection rates.[8,9] Under the Environment (protection) Act 1986, bio-medical waste management rules, 2016 came into force from 28th March, 2016 superseding bio-medical waste (management and handling) rules, 1998.[10] This will act as a weapon against the ignorance among health care personnel handling the HIV cases in the country and more so in highly endemic districts.

Ganjam is a district of high endemicity of HIV-AIDS due to lack of awareness among the general population and lack of patient compliance in completing antiretroviral treatment course. Among the various "at risk groups" for HIV infection exposure, the category of doctors, nurses and allied health care personnel are also included.[10] Reliable information on the knowledge status on HIV among them in Odisha are scarcely available. Hence, a study on knowledge and preventive practice on HIV exposure was carried out on the health care personnel of MKCG Medical College and Hospital, Berhampur, Odisha, India with objectives to assess the perception of health personnel on HIV transmission in health care setting and their practice of occupational safety measures against HIV infection.

METHODS

The present study was a hospital based cross-sectional study done for a period of 2 months from December 2017 to February 2018. It was performed in various OPDs, wards, emergency of MKCG Medical College, Berhampur, Odisha. The study participants were the health care professionals present in the study place during the study period Only those were present during the visit were included. Those who didn't give consent to participate in the study were excluded. By convenient sampling method, a total of 174 health care personnel was selected and interviewed. The study instrument used for interview was a pre-designed and pre-tested semi structured questionnaire. The statistical data collected was analyzed by using software SPSS 16 version. The various statistical tests used were percentage and proportion.

After IEC approval, enrolment of the study participants was done from December 2017 to February 2018. Informed consent was obtained prior to data collection from each participant. Data was collected in various OPDs, wards and emergency department from health care personnel who were present during the time of visit. The data on socio-demographic information, knowledge on different aspect of HIV transmission, precaution taken in their working set up, were collected using the pretested questionnaire.

RESULTS

Out of the total 174 study participants, 50.6% were of age group of 30-40 years of which 81.8% were males while 18.2% females. Majority (67.8%) were doctors by profession of which 71.2% were males and 28.8% females. Most of them (31%) worked in operation theatres frequently either as surgeon or as associated staffs and 25.3% were emergency staffs. Almost 47.1% of the study participants had work experience of less than 1 years only and among them 78% were males and 22% were females (Table 1).

Table 1: Socio-demographic characteristics of study population.

Socio-demographic characteristics	Different groups	Male		Female		Total
		No.	%	No.	%	
Age (in years)	<30	8	40	12	60	20
	30-40	72	81.8	16	18.2	88
	40-50	20	52.6	18	47.4	38
	>50	14	50	14	50	28
Occupation	Doctor	84	71.2	34	28.8	118
	Staff Nurses	6	23.1	20	76.9	26
	Others	26	86.7	4	13.3	30
Work place	OPD	16	38.1	26	61.9	42
	Emergency	32	72.7	12	27.3	44
	Ward	20	58.8	14	41.2	34
	OT	30	55.6	24	44.4	54
Work experience	<1 year	64	78	18	22	82
	1-3 year	36	62.1	22	37.9	58
	>3 year	14	41.2	20	58.8	34
Total		114	100	60	100	174

Assessing the different safety measures adopted by the health personnel, most common was gloves (69%). Apron was used by 13.8%, while 11.5% used mask and cap (5.7%) (Figure 1) .

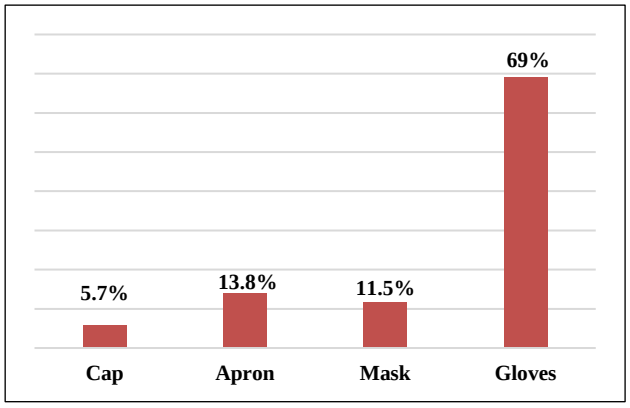

Figure 1: Types of safety measures adopted.

Among the various types of exposure to HIV infection in their working setup, amongst health personnel, 34% told mode of transmission may occur through mucus membrane, 20% told by per cutaneous route and 15% by non-intact skin. However, 31% of them mentioned that infection occurs even by contact with intact skin (Figure 2).

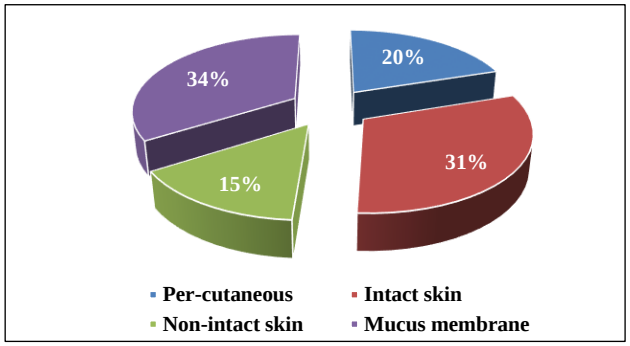

Figure 2: Responses on modes of transmission.

Out of the 65.5% male health personnel, 78.9% enquired about the patient's HIV status. While among the rest 34.5% female health personnel 73.3% were enquiring about patient's HIV status. Of the 114 male respondents, 93% had come across HIV positive patients while among the 60 female respondents 90% had faced HIV positive patients.

Among the 114 male health personnel 54.4% had knowledge about basic PEP regimen while of the 60 female health personnel, 80% had knowledge of basic PEP regimen. About 75.4% male and 63.3% female respondents had stated, PEP regimen to be taken within 2 hours while the rest 63.3% male and 36.7% female respondents answered that PEP can be taken more than 2 hours after exposure. Of the 114 male study participants about 86% had mentioned when to complete PEP regimen, while among the 60 female study participants 70% mentioned correctly about completion of PEP regimen (Table 2).

Table 2: Knowledge on PEP.

Knowledge on		Male		Female	
		No.	%	No.	%
Basic PEP regimen	Yes	62	54.4	48	80
	No	52	45.6	12	20
Time of initiation of PEP	<2 hrs	86	75.4	38	63.3
	>2 hrs	28	24.6	22	36.7
Completion of PEP regimen	Yes	98	86	42	70
	No	16	14	18	30
Total		114	100	60	100

DISCUSSION

Most of the study subjects were of 30-40 years of age, doctors by profession, worked in emergency and had work experience of 1-3 years (Table 1). In a similar study performed by Hashmi A et al, registered nurses accounted for 46.9% of the cases and 34.4% of the incidents occurred most frequently in the operating/recovery room and in a Swiss study majority of the cases were nurses (49.2%) followed by doctors performing invasive procedures.[11,12]

Amongst the safety measures used by the health personnel most common was gloves followed by apron, mask and cap (Figure 1). In the same study performed by Hashmi A et al, most of them used double gloves as the safety measures.[11] An American study showed the frequency of seeing blood on the hand after surgery was greater with single gloving than with double gloving.[13]

Most common forms of exposure mentioned by them include through mucus membrane (34%) followed by per cutaneous mode (20%) and non-intact skin (15%). Intact skin mode was mentioned by 31% them which show inadequate knowledge status (Figure 2). Hashmi A et al, in their study showed per cutaneous mode of exposure as 46.6% followed by intact skin mode (31.2%).[11] An Australian study concluded introduction of self-retracting safety syringes and elimination of butterfly needles should reduce the current hollow-bore NSI by more than 70% and almost halve the total incidence of NSI.[14]

Total 78.9% male and 73.3% female health personnel enquire about the HIV status of the patient coming for treatment. In this study, 93% male and 90% female health personnel have come across HIV positive patients. The knowledge about basic PEP regimen was present in 54.4% male and 80% female health personnel. PEP to be initiated within 2 hours of exposure was mentioned by 75.4% male and 63.3% female health personnel while it can be taken even after more than 2 hours was mentioned by 36.7% female and 24.6% male health personnel. Of the total 174 study participants, knowledge about

completion of PEP regimen was mentioned by correctly by 86% male and 70% female health personnel (Table 2).

CONCLUSION

The study participants were not aware about all the mode of transmission. There is gap in knowledge and practices of safety gears. Using of double gloves is still considered the effective way of preventing the transmission as elicited in their practice. Perceptions and practice of doctors were no way better than other health personnel. Even PEP was not known to more than one-third of participants. Reorientation training should be provided to all health personnel of the facility.

RECOMMENDATION

Author must encourage the workforce to get tested and know their status as the catchment area is endemic for the disease. Knowledge and practice of safety gear should be enforced by the hospital authority to keep its work force safe and healthy. HIV/AIDS awareness programs as well as the levels of care and treatment should be communicated to them. Work and area specific message should be displayed to them to reinforce the concept of safety issues while caring for someone with this disease

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