KNOWLEDGE REGARDING OCCUPATIONAL HEALTH HAZARDS AMONG NURSES IN A HOSPITAL, RUPANDEHI, NEPAL

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ABSTRACT

INTRODUCTION

Health organizations are characterized by multidimensional and complex environment that makes nurses prone to occupational hazards and injuries.

MATERIAL AND METHODS

A descriptive cross-sectional study was conducted to find out the knowledge regarding occupational health hazards among nurses. Sixty one respondents were selected as the study sample by using enumerative sampling method. Self-administered structured questionnaire was used to collect the data and collected data were analyzed by using descriptive and inferential statistics with SPSS software version 16.

RESULTS

The findings of the study revealed that 70.5% of respondents had knowledge on meaning of occupational health hazards. Forty six percent had knowledge regarding meaning of biological hazards, 86.9% and 65.6% had knowledge on high risk person and immediate management for blood and body fluids exposure respectively. The finding of the study showed that 52.5% had high knowledge and 47.5% had low knowledge regarding occupational health hazards. There was statistically significant association between in-service training and respondents' level of knowledge regarding occupational health hazard (p-value= 0.024).

CONCLUSION

Based on findings of the study, it is concluded that more than half of the respondents have high knowledge regarding occupational health hazards. Besides this, respondents have high knowledge on meaning of occupational health hazards, causative agents of biological hazards, diseases that can occur after exposure to infected body fluids, preventive measures and low knowledge on meaning of biological hazards, virus having chance of transmission and first person to report after exposure to blood and body fluids.

KEY WORDS Knowledge, Nurses, occupational health hazards

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INTRODUCTION

An occupational health hazard is defined as the potential risk to the health of a person emerging from an unhealthy environment which is a significant public health issue. It can also be referred to as any activity, materials, process or situation that is likely to cause an accident or disease at the work place.[1] Health workers are exposed to blood and other body fluids in the courses of their work. Consequently, they are at risk of infection with blood borne viruses. Occupational exposure to blood can result from percutaneous injury, mucocutaneous injury or blood contact with non-intact skin. Among 35 million health workers worldwide, about 3 million are exposed to blood borne pathogens through percutaneous injury each year; two million of those to HBV, 0.9 million to HCV and 170000 to HIV. These injuries may result in 15,000 HCV, 70,000 HBV and 500 to HIV infections. More than 90% of these infections occur in developing countries.[2] Health workers especially nurses are at increased risk of blood and body fluid exposure, and it may lead to various infectious transmissions. Transmission of at least 20 different pathogens by sharp injuries and body fluid exposure has been reported and HBV, HCV and HIV are the most significant and frequent blood borne pathogens. Infection by these viruses can lead to serious and even fatal illnesses.[3] There are virtually endless occupational hazards in the nursing profession such as infectious diseases, needle prick injuries, back injury, latex injury, radiation exposure, toxic chemical exposure, emotional and physical stress, work overload and violence in the place which cover a wide range of concerns. Being aware of the potential problems and seeking a reasonable and attainable solution is the key to create a safe working environment. For this the nurses should have theoretical basis of knowledge to identify the health hazards.[4]

In this pretext, the present study was conducted to find out the level of knowledge regarding occupational health hazards among nurses and the association between level of knowledge regarding occupational health hazards and selected demographics variable.

MATERIAL AND METHODS

A descriptive cross-sectional study was used to find out the knowledge regarding occupational health hazards among nurses.

Sixty one respondents of Universal college of Medical Sciences, Bhairahawa were selected as sample for the study by using enumerative sampling method.

Researcher herself developed self-administered structured questionnaire by seeking literatures, consulting advisor and subject experts.

The study was conducted from 12th February to 25th April 2017.

Pretest of the instrument was conducted on seven respondents in Devdaha Medical College, Teaching Hospital, Devdaha-9, Bhaluhi, Rupandehi.

All the collected data were analyzed by using descriptive statistics and inferential statistics with Statistical Package for Social Sciences (SPSS) software version 16.

Regarding the criteria of knowledge level: It is classified it into three categories on the basis of mean score as:

High knowledge	-	Above 14.18
Average knowledge	-	Equal to 14.18
Low knowledge	-	Below 14.18

EXCLUSION CRITERIA

1. Nurses not willing to participate
2. Nurses who were not present during the period of data collection

RESULTS

Most of the respondents (42.6%) had total working experience of one to two years and 34.4% had more than two years of working experience, 24.6%of the respondents were working in surgical department and 9.8% of the respondents were working in psychiatric department. Regarding in-service training, most of the (80.3%) of respondents had not received in-service training regarding occupational health hazards whereas only 19.7% of the respondents had received in-service training regarding occupational health hazards.

Regarding the meaning of occupational health hazards, most of (70.5%) the respondents answered risk to health of a person or hazards at work place as meaning of occupational health hazards and 78.6% answered biological substances that cause harm to health of human as meaning of biological hazards.

With regards to knowledge regarding biological hazards, Majority (82%) of the respondents answered cuts from the contaminated sharp instruments as hazards included in biological hazards whereas 11.5% of them cited healed wound for the same. As per aspects of knowledge regarding causative agents, 96.7% of the respondents answered bacteria as the causative agent of biological hazards.

As per knowledge regarding risk factors and ways of exposure to the blood and body fluids among health workers, 85.2% of the respondents answered lack of personal protective equipment's as risk factor for occupational exposure to blood and body fluids among health workers whereas 8.2% stated disposal of sharp waste in puncture proof closed container.

Table 1. Respondent's knowledge regarding biological hazards

Variables	Frequency	Percentage
Hazards included in biological hazards**		
Cuts from the contaminated sharp instruments*	50	82
Healed wound	7	11.5
Splashes of blood to non-intact skin*	39	63.9
Needle stick injury*	50	82
Causative agents**		
Bacteria*	59	96.7
Virus*	60	98.4
Algae	5	8.2
Fungi*	17	27.9

**correct response* ***Multiple responses*
Mean percentage score of hazards included in biological hazards-76
Mean percentage score of causative agents-74.3

Regarding ways of exposure among health workers, 80.3% of the respondents answered percutaneous exposure as a way of exposure to blood and body fluids among health workers whereas 8.2% identified radiation exposure as a way of exposure to blood and body fluids among health workers.

Table 2. Respondents' knowledge regarding risk factors and ways of exposure to blood and body fluids among health workers

Variables	Frequency	Percentage
Risk factors for exposure among health workers**		
Improper handling of the patient *	49	80.3
Administering oral medication	7	11.5
Heavy workload*	51	83.6
Recapping the needle*	35	57.4
Lack of knowledge and training*	46	75.4
Lack of personal protective equipment's*	52	85.2
Disposal of sharp waste in puncture proof closed container	5	8.2
Ways of exposure among health workers**		
Through percutaneous exposure*	49	80.3
Through radiation exposure	5	8.2
Through mucocutaneous exposure*	41	67.2
Through non-intactskin exposure*	39	63.9

**correct response* ***multiple responses*
Mean percentage score of risk factors-76.4
Mean percentage score of ways of exposure-70.5

Regarding highest risk area for blood and body fluids exposure, 62.3% of the respondents answered operation theatre as a highest risk area for blood and body fluids exposure, 34.4% stated emergency department whereas 3.3% answered surgical ward. Regarding virus having chance of transmission after exposure to infected blood, 82% of the respondents answered hepatitis B virus as a virus having chance of transmission after exposure to infected blood and 14.7% stated hepatitis C virus.

Regarding diseases that can occur after exposure to infected body fluids 98.4% of the respondents answered hepatitis B can occur after exposure to infected blood and saliva and 16.4% answered hepatitis E. Cent percent of the respondents answered *Mycobacterium tuberculosis* can occur after exposure to infected sputum. Most (73.8%) of the respondents answered hepatitis E can occur after exposure to faeces and 8.2% answered hepatitis D.

Table 3. Respondents' knowledge regarding diseases that can occur after exposure to infected body fluids

Variables	Frequency	Percentage
Infected blood and saliva**		
Hepatitis A	15	24.6
Hepatitis C*	47	77
Hepatitis E	10	16.4
Hepatitis B*	60	98.4
Infected sputum		
Pneumonia	-	-
Asthma	-	-
Mycobacterium tuberculosis*	61	100
Pulmonary embolism	-	-
Infected semen and vaginal secretion		
Filariasis	-	-
Sexually transmitted diseases*	59	96.7
Influenza	2	3.3
Rhinitis	-	-
Faeces**		
Hepatitis A*	50	82
Hepatitis B	27	44.3
Hepatitis E*	45	73.8
Hepatitis D	5	8.2

**correct response* ***Multiple response*
Mean percentage score of disease that can occur after exposure to infected blood and saliva-87.7 and faeces-77.9

Majority (90.2%) of the respondents answered face mask as a necessary equipment to prevent risk of splashing, 82% stated gloves as a necessary equipment where as 9.8% answered boot. Regarding management of blood and body fluids exposure, 65.6% of respondents answered wash the area with soap and water as the immediate management after exposure to blood and body fluids and 4.9% answered perform laboratory test. Regarding immediate person to report after exposure, 49.2% of the respondents correctly answered supervisor as an immediate person to report after exposure to blood and body fluids, 23% and 9% stated laboratory staff and consultant respectively whereas 9.8% answered administrative staff.

Regarding blood test as a diagnostic test after exposure to blood and body fluids, cent percent of the respondents answered blood test as a diagnostic test after exposure to blood and body fluids. Majority (90.2%) of the respondents answered post exposure prophylaxis is available for hepatitis B and HIV/AIDS whereas 6.6% answered hepatitis C.

Table 4. Respondents' overall knowledge regarding occupational health hazards

Level of Knowledge	Frequency	Percentage
High	32	52.5
Average	-	-
Low	29	47.5

Mean score-14.18

Table 5. Association of respondents' level of knowledge regarding occupational health hazards with respondents' in-service training

In service Training	Level of Knowledge		χ2	*p-value*
	High	Low		
Received	10 (6.3)	2(5.7)	5.710	0.024
Not received	22(25.7)	27(23.3)		

Significance level at 0.05
p-value computed by using Fisher's Exact test

There is significant association between in-service training and respondents' level of knowledge regarding occupational health hazards (p-value= 0.024).

DISCUSSION

The findings of the present study showed that 82% of respondents had knowledge regarding cuts from the contaminated sharp instruments and 82% had knowledge regarding needle stick injury as the hazards included in biological hazards. The finding of the study is in consistent with the study of Osungbemiro et al (2015) which shows that 60% had knowledge regarding cuts from the contaminated sharp instruments and 71.4% had knowledge regarding needle stick injury as hazards included in biological hazards.[5]

The findings of the present study showed that 85.2% of respondents had knowledge regarding lack of personal protective equipment as risk factors for exposure to blood and body fluids among health workers. The finding of the study is inconsistent with the finding of Gourni et al (2012), which shows 67.9% of nurses had knowledge regarding lack of personal protective equipment's as risk factors for blood and body liquids exposure.[6]

The findings of the present study showed that 57.4% of respondents had knowledge regarding recapping the needle as the risk factor for exposure to blood and body fluids among health workers. The finding of the study is consistent with the finding of Nkoko et al (2014), which shows that 53.6% had knowledge regarding recapping the needle as the risk factor associated with blood and body fluids exposure among health workers.[7]

The findings of the present study showed that 80.3% of respondents had knowledge regarding percutaneous exposure and 63.9% had knowledge regarding non-intact skin exposure as the ways of exposure to blood and body fluids among health workers. The finding of the study is inconsistent with the study of Hadadi et al (2008), which shows that 58.8% had knowledge regarding percutaneous exposure and 16.8% had knowledge 29% regarding non-intact skin exposures as the ways of exposure to blood and body fluids among health workers.[8]

The findings of the present study showed that 41% of respondents had knowledge regarding mucocutaneous exposure as the way of exposure to blood and body fluids among health workers. The finding of the study is inconsistent with the finding of Chaudhuri et al (2015), which shows that more than 66.66% had knowledge regarding mucocutaneous exposure as ways of exposure to blood and body fluids infection among health workers.[9]

The findings of the present study showed that 77% of respondents had knowledge that hepatitis B can occur after exposure to infected saliva. The finding of the study is in consistent with the finding of Jankovic et al (2009), which shows that 50% had knowledge hepatitis B can occur after exposure to infected saliva.[10]

CONCLUSION

Based on the study findings, it is concluded that more than half of the nurses have high knowledge regarding occupational health hazards. Nurses have high knowledge regarding meaning of occupational health hazards, causative agents of biological hazards, risk factors for exposure to blood and body fluids among health workers, high risk person for exposure to blood and body fluids, diseases that can occur after exposure to infected body fluids, necessary equipment's to prevent risk of splashing and diagnostic test whereas nurses have low knowledge regarding meaning of biological hazards, virus having chance of transmission after exposure to infected blood and first person to report after exposure to infected blood and body fluids. Therefore, there is a need to provide in-service education to the nurses in order to improve their knowledge regarding occupational health hazards to promote nurses' knowledge.

REFERENCES

1. Owie H.O., and Apanga P.A. Occupational Health Hazards Prevailing among Healthcare Workers in Developing Countries. Journals of AIDS and Clinical Research. 2016;7(8):1-5 DOI: 10.4172 /2155-6113.1000596.

2. World Health Organization. Health care worker safety: AIDE-MEMOIRE for a strategy to protect health workers from infection with blood borne viruses.

3. Farsi D., Zare A.M., Hassani A.S., Abbasi S., Emaminaini A., Hafezimoghadam, B., and Rezai, M. Prevalence of occupational exposue to blood and body fluid secretions and its related effective factors among health care workers of three emergency departments in Tehran. Journal of Research in Medical Sciences. 2012 July;17(7): 656-661.

4. Burgess, N. Occupational Hazards for Nurses. Retrieved from http://www.hospitaljobsonline.com/career-center/healthcare-careers / occupationalhazards-for-nurses.html

5. Osungbemiro B.W., Adejumo O.A., Akinbodewa A.A., and Adelosoye, A.A. Knowledge regarding occupational health safety and hazards among health workers in Ondo city, South West Nigeria. British Journal of Medicine and Medical Research. 2015;13(8):1-8.

6. Gourni P, Polikandrioti M, Vasilopoulos G, and Mpaltzi E. Knowledge regarding occupational exposure to blood and body fluids among nurses at emergency department. Health Science Journal. 2012 Jan; 6(1): 60-68.

7. Nkoko L, Spiegel J, Rau A, and Yassi A. Knowledge regarding the risk factors to nurses for blood and body fluid exposure in a rural hospital in ThaboMofutsanyana, South Africa. Work Place Health and Safety Journal. 2014 Sept;62 (9):382-388.

8. Hadadi A, Afhami S, Karbakhsh M, & Esmailpour N. Knowledge regarding occupational exposure to body fluids among healthcare workers. Singapore Med Journal. 2008 June; 49 (6):492-496.

9. Chaudhuri S, Baidya P.O, and Singh G.T. Knowledge regarding occupational exposure to blood and body fluids among nursing staff in a tertiary hospital of Manipur. IOSR Journal of Dental and Medical Sciences. 2015 Dec;14(12):116-119.

10. Jankovic S, Bojanic J, Vranes J, Marinkovic S, and Jankovic J. Knowledge, attitudes and practices towards blood-borne pathogens in health care workers in Banja Luka, Bosina and Herzegovina. Central European Journal of Medicine. 2009 Oct; 4:409-414.