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Awareness Regarding Prevention of Occupational Health Hazards among Traffic Police of Kathmandu Valley

Gargi Adhikari[1], Gayatri Rana[2], Jay Prasad Singh[3]

[1]School of Nursing, Chitwan Medical College, Bharatpur, Nepal
[2]Associate Professor, Department of Community Health Nursing, School of Nursing, Chitwan Medical College, Bharatpur, Chitwan, Nepal
[3]Assistant Professor, Department of Nursing Research, School of Nursing, Chitwan Medical College, Bharatpur, Chitwan, Nepal

Corresponding Author: Gayatri Rana

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ABSTRACT

Occupational health hazards are conditions that results from exposure in a workplace that affects the health of a person. In a highly urbanized city like Kathmandu, the traffic police are more exposed to occupational hazards. The objective was to assess the awareness regarding prevention of occupational health hazards among traffic police of Kathmandu valley. Descriptive cross-sectional research design was adopted and a total 172 traffic police working in 6 different traffic police stations of Kathmandu valley were selected by consecutive sampling technique in between 30 June to 13 July, 2019. Structured self-administered questionnaire was used to collect data. Descriptive (Frequency, percentage, median & quartile) and inferential statistics (Chi-square, Fisher's exact test) were used to analyze data. More than half traffic police were adequately aware while nearly half were inadequately aware regarding the prevention of occupational health hazards. The level of awareness regarding prevention of occupational health hazards was seen statistically significant with sex ($p<0.001$) and attending training during recruitment ($p=0.007$). Government as well as the traffic police division should conduct different awareness programs regarding the use of preventive measures.

Keywords: Awareness, Prevention of Occupational Health Hazards, Traffic Police

INTRODUCTION

The rapid urbanization and industrialization of the urban areas with the increasing human population, industries and motor vehicles has turned out to degrade the environmental condition. Increasing human population, industries and motor vehicles has turned out to be major environmental issue and a source of traffic related pollution.[1]

In a highly urbanized city like Kathmandu, the traffic policemen are continuously compromising their health for the general public and are more exposed to occupational hazards. They work in an extremely bad working condition of sun, rain, pollution and smoke of the vehicles.[2] Kathmandu air pollution leading people to health problems, disability and even death.[3] Monthly and yearly average occupational and ambient particulate matters concentrations at the high density traffic areas and road intersections have exceeded the average limit value.[4]

The major common pollutants from transportation sector cause public health problems which includes particulate matter (PM), ozone, carbon monoxide, sulfur dioxide and nitrogen dioxide. These harmful gases cause respiratory and other fatal

diseases most commonly to the traffic police who are in continuous exposure to these common pollutants.[5] The potential occupational hazards among traffic policemen is largely associated with different health problems like depression, respiratory and cardiac problems, impaired glucose metabolism, skin allergy, eye problems, ear problems, musculoskeletal disorders, physical and mental stress, fatigue and other communicable diseases, cytogenic effect and carcinogenic effect. Traffic police have a difficult and stressful job of standing at the road intersection for several hours in managing the traffic which even makes them prone to varicose veins of legs.[6]

An average traffic sound in Kathmandu Metropolitan City is about 60-100 dB. The traffic police in Kathmandu are therefore under continuous exposure of large decibel of sound which makes them prone to permanent hearing loss.[7] Major prevalence of eye, ear and skin related morbidities were significant as a result of poor practice on the use of safety measures to prevent the problems.[8] Traffic policemen had fair knowledge but poor practice regarding the use of preventive measures to protect from the occupational health hazards. Most of the traffic police are not using face mask because of different reasons like they have to whistle often at the traffic intersections, shout at people who are crossing roads at the traffic signals and some not knowing the benefits of mask and goggles.[9]

The proper use of antipollution masks, goggles, caps, gloves, compression stockings, comfortable shoes, sunscreen cream, regular health checkups and rotation during duty hours have somewhat tend to decrease the risk of the effects of the harmful traffic pollution. The traffic policemen therefore should be demonstrated proper use of the personal protective equipment for minimizing the effects of occupational health hazards.[10]

Various kinds of training programs should be organized frequently in order to make the traffic police division aware of the prevention of occupational health hazards. They should be involved in different educational programs quite often so that they are all capable of protecting themselves from various health problems that result in regard to their occupation.[11]

Preventive aspect has its own benefit on the health of an individual over the curative aspect. Therefore, it is necessary to identify the health hazards and the ways to minimize those health hazards is important for the beneficial of traffic police.

MATERIAL AND METHODS

Descriptive cross sectional research design was conducted to assess the awareness regarding prevention of occupational health hazards among traffic police of Kathmandu valley. Consecutive sampling technique was used to select 172 traffic police working in 6 different traffic police stations (Singha Darbar, Thapathali, Durbar Marg, Kalanki, Kalimati, and Maharajgunj) of Kathmandu valley. Data was collected from 30 June to 13 July, 2019. In a day, data of 15-20 traffic police was collected; and about 15-20 minutes was taken to collect data from each respondent. Structured self-administered questionnaire was used to collect data. Ethical approval from Institutional Review Committee, Chitwan Medical College Bharatpur, Chitwan (CMC-IRC/076/077-072) was taken for the study. Written informed consent was obtained from each respondent before data collection. Confidentiality was assured and maintained. Data was entered in statistical package for social science (SPSS) version 20 and analyzed and interpreted in terms of descriptive (Frequency, percentage, median, & quartile) and inferential statistics (Chi-square and Fisher's exact test).

RESULTS

Out of 172 traffic police, 95.9% answered the most common effects of occupational health hazards are eye, ear, respiratory, musculoskeletal, skin related problem; 94.2% answered occupational health hazards are preventable. Likewise, 87.8%

answered it is necessary to use cap as personal protective equipment, followed by face mask (97.1%), gloves (93.6%), back support belts (94.2%), comfortable shoes (95.9%), hearing aids (80.2%), goggles (98.3%) and compression stockings (93%). Almost (96.5%) answered wearing protective glasses is effective to prevent the effects of U/V radiation regarding occupational health hazards; followed by applying sun burn protective cream (89%), wearing caps (90.1%) and protecting skin with clothing (99.4%). Almost (95.3%) answered managing the traffic prevents the occupational health hazards related to noise pollution; followed by using ear plug (86%), and implementing No- Horn area (98.8%). Almost (98.8%) answered using of face mask is effective to prevent the effects of occupational health hazards on respiratory system; followed by implementing rules in vehicles regarding air pollution (92.4%). Almost (90.1%) answered using proper body mechanics prevents the effect of occupational health hazards on musculoskeletal system; followed by using back support belt (92.4%) and rest facilities at traffic check point (89%).

Table 1 Respondents' Socio-demographic Information n=172

Variables	Number	Percentage
Age (completed years)		
18-27	87	50.6
28-37	62	36.0
38-47	21	12.2
>48	2	1.2
Median=27; Min=18;Max=49;IQR=Q_3-Q_1=33.75-25		
Sex		
Male	135	78.5
Female	37	21.5
Ethnicity		
Brahmin	50	29.1
Chhetri	76	44.2
Janjati	41	23.8
Dalit	5	2.9
Religion		
Hinduism	169	98.3
Buddhism	3	1.7
Marital Status		
Unmarried	53	30.8
Married	118	68.6
Divorced	1	0.6
Educational Status		
Basic education	2	1.2
Secondary level	88	51.2
Bachelor level	75	43.6
Master level	7	4.1
Designation		
Police Constable	120	69.8
Police Head Constable	31	18.0
Assistant Sub Inspector	16	9.3
Sub Inspector	5	2.9
Monthly Income (NC Rupees)		
17,000-29,000	150	87.2
29,000-41,000	20	11.6
41,000-52,000	2	1.2
Median =22,000; Min=17,000; Max=50,000; IQR= Q_3-Q_1=25000-18340		
Work Experience (years)		
<10	99	57.6
10-20	63	36.6
≥20	10	5.8
Median=7; Min=1; Max=28; IQR=Q_3-Q_1=12-5		

The findings of the study are presented in following tables. Respondents' socio-demographic information (Table 1), Respondents' level of awareness regarding prevention of occupational health hazards (Table 2), Association between respondents' level of awareness regarding prevention of occupational health hazards and socio-

demographic variables (Table 3), Association between respondents' level of awareness regarding prevention of occupational health hazards and selected variables (Table 4).

Table 2 Respondents' Level of Awareness Regarding Prevention of Occupational Health Hazards

Level of Awareness	Number	Percentage
Adequate (≥36)	91	52.9
Inadequate (<36)	81	47.1
Total	**172**	**100.0**

Median Score=36; Min Score=23; Max Score=42; IQR=Q_3-Q_1=39-33

Table 3 Association between Respondents' Level of Awareness Regarding Prevention of Occupational Health Hazards and Socio-demographic Variables n=172

Variables	Level of Awareness		χ^2	p-value
	Adequate No. (%)	Inadequate No. (%)		
Age group (years)				
<38	80(53.7)	69(46.3)	0.275	0.600
≥38	11(47.8)	12(42.2)		
Sex				
Male	62(45.9)	73(54.1)	12.275	<0.001
Female	29(78.4)	8(21.6)		
Ethnicity				
Brahmin	28(56.0)	22(44.0)	0.072	0.704
Chhetri	41(53.9)	35(46.1)		
Others*	22(47.8)	24(52.2)		
Religion				
Hinduism	89(52.7)	80(47.3)	-	1.00€
Non-Hinduism	2(66.7)	1(33.3)		
Marital Status				
Unmarried	30(56.6)	23(43.4)	0.420	0.517
Married and Others#	61(51.3)	58(48.7)		
Educational Status				
Up to Secondary level	48(53.3)	42(46.7)	0.014	0.907
Bachelor and above	43(52.4)	39(47.6)		
Designation				
Police Constable	62(51.7)	58(48.3)	-	0.969€
Police Head Constable	17(54.8)	14(45.2)		
Assistant Sub Inspector	9(56.2)	7(43.8)		
Sub Inspector	3(60.0)	2(40.0)		
Work of Experience				
<10	58(58.6)	41(41.4)	3.019	0.082
≥10	33(45.2)	40(34.4)		

Significance level at 0.05, €Fisher's Exact Test, *Janajati & Dalit, #Divorced & Widow

Table 4 Association between Respondents' Level of Awareness Regarding Prevention of Occupational Health Hazards and Selected Variables n=172

Variables	Level of Awareness		χ^2	p-value
	Adequate No. (%)	Inadequate No. (%)		
Obtained training during recruitment				
Yes	59(62.1)	36(37.9)	7.206	0.007
No	32(41.6)	45(58.4)		
Organize continuous education program by traffic police division				
Yes	44(61.1)	28(38.9)	3.345	0.067
No	47(47.0)	53(53.0)		

Significance level at 0.05

DISCUSSION

Study reveals that 52.9% of traffic police had adequate awareness regarding prevention of occupational health hazards and 47.1% had inadequate awareness. Similar study conducted by Panta & Neupane (2013) showed that 40.4% of traffic policemen had fair knowledge on prevention of occupational health hazards.[13] It might be due to the ignorance regarding prevention of occupational health hazards.

In the present study, 55.2% of the traffic police had attended training related to the prevention of occupational health hazards. Contradicts with the study of Karki, KC & Neupane (2018) revealed that almost 2.4% of the traffic police had attended training related to the prevention of respiratory diseases.[12] Organizing frequent training programs regarding the measures to be used to prevent the occupational health hazards

can help to improve their knowledge and practice.

The level of awareness regarding prevention of occupational health hazards is found to be statistically significant with sex: female ($p<0.001$). In contrast with the findings of Panta & Neupane (2013) showed that sex is not significantly associated with the level of knowledge on prevention of occupational health hazards.[13]

Current study showed, obtained training during recruitment is found to be statistically significant ($p=0.007$) with level of awareness regarding prevention of occupational health hazards. In contrast to this, the study of Karki, K.C & Neupane (2018) which revealed there is no significant association between attending training during recruitment and level of awareness regarding prevention of occupational health hazards.[12]

CONCLUSION

Half of the traffic police are adequately aware regarding the prevention of occupational health hazards while almost half of them are inadequately aware. The level of awareness regarding prevention of occupational health hazards is associated with sex: female, and attended training during recruitment regarding prevention of occupational health hazards.

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