

**ORIGINAL RESEARCH ARTICLE****KNOWLEDGE AND PRACTICE REGARDING PREVENTION OF OCCUPATIONAL HAZARDS AMONG TRAFFIC POLICEMEN IN KATHMANDU**S Panta ^{1*}, M Neupane ²¹ Nepalese Army Institute of Health science, Sanobharang, Kathmandu.² College of Nursing, Chitwan Medical College, Bharatpur, Chitwan, Nepal.***Correspondence to:** Ms Sarita Panta, Lecturer, Nepalese Army Institute of Health science, Sanobharang, Kathmandu, Nepal. Email: saritas.panta@gmail.com**ABSTRACT**

Occupational health hazards are hazards of exposure to pollution, noise and vibrations in the working environment (ILO). This study aim to find out the knowledge and practice on prevention of occupational health hazards among traffic policemen in Kathmandu valley. A descriptive study employing probability sampling was used to select 282 traffic policemen who were employed in the traffic police stations of Kathmandu. Where Self administered questionnaire was used to collect the data. Data were analyzed by using SPSS such as frequency, percentage, mean and standard deviation and chi-square test. Findings depicted that less than half of respondents (40.4%) had fair knowledge on prevention of occupational health hazards. The highest mean percentage score was in the area of effects and prevention of dust or gas about 70%. The level of knowledge was found significant association with age ($p=0.029$), government provided by safety measures ($p=0.021$). More than half (54.6%) of respondents had poor preventive practices, such as wearing gloves, back support belts, compression stocking, apply sunscreen cream and wearing ear plug on duty hour. The level of practice was found to have significant association with age group of respondents ($p=0.038$), sex ($p=0.009$) and work experience ($p=0.048$). It is concluded that traffic policemen knowledge regarding prevention of occupational health hazards had fair knowledge but poor preventive practices. This study reveals the need for awareness program for prevention of occupational health hazards among traffic policemen.

Key words: Knowledge, Occupational health hazards, Practice, Traffic policemen.**DOI:** <http://dx.doi.org/10.3126/jcmc.v6i3.16698>**INTRODUCTION**

Occupational health hazards are Injuries or illnesses or diseases that result from a particular employment, usually from the effects of long-term exposure to specific substances or of continuous or repetitive physical acts.¹

Police personnel play a pivotal role in maintaining the law, order and safety of the country. There is a wide range of activities involved in police work, there are many health and safety issues surrounding policing as an occupation. Police officers may be exposed to different health and safety risks in their occupation Exposure.²

Police or law enforcement officers usually live under constant apprehension of physical danger, work long and irregular hours, and are exposed to unpleasant

sides of life. The potential occupational hazards among the traffic policemen include ultraviolet radiation, noise pollution, backache and respiratory problem.³

Traffic policemen who spend much of their time busy in controlling traffic at heavy traffic junctions suffer from ill effects of noise, air pollution. Occupational health hazards are a preventable disease and most of the people are unaware about the intensity of problem. The purpose of the study is to create awareness and improve the knowledge and practice regarding prevention of occupational health hazards. Immediate awareness program is the best way to save the life successfully.⁴

A study was done in Malaysia revealed that out of 202 Malaysian road traffic policemen the practice of prevention, 84.6% of the respondents were used caps, 68.9% of respondents wear sun glasses and 16.9% of the respondents used a sunscreen cream. Regarding to the factors that influenced the practice of UV radiation. It was found that gender significantly influenced the practice of sunscreen used outdoor.⁵

A questionnaire based study done in Kathmandu valley revealed that out of 110 Traffic policemen randomly selected. Around 12% of the traffic policemen complained of below average hearing ability, 8% of the respondents complained of regular tinnitus, while 57.3% had tinnitus during working hours. Only 7.3% of police used earplugs during working hours. 77% of traffic policemen did not use any method to reduce exposure to noise.⁶

METHOD

The descriptive study design was carried out from October 07, 2013 to November 07, 2013 in Kathmandu valley. Data was collected from different police stations of Kathmandu. Cluster sampling technique was used to select the appropriate sample. The sample was taken from the traffic policemen who were attending the duty on traffic stations. Total population of traffic police was divided into eleven clusters, out of them six clusters selected by using simple random sampling method (lottery method). The sample size was 282. Data was collected by using self administered questionnaires which were administered in 10-12 respondents per day. Written permission was taken from research committee of CMC (CMC-IRC). Inform consent was taken from respondents. Written permission was taken from the authority of traffic division office, Ramshah path, KTM by submitting the written letter of CMC, College of Nursing. The collected data were analyzed by using descriptive statistics in terms of frequency, percentage and chi-square test. The findings of the study are presented in the tables below.

RESULT

Table 1: Socio-Demographic Characteristics of the Respondents (n=282)

| Variables | Frequency | Percent |
|---------------------------------|-----------|---------|
| Age group in years | | |
| 15-24 | 79 | 28.0 |
| 25-34 | 162 | 57.4 |
| >35 | 41 | 14.5 |
| Sex | | |
| Male | 247 | 87.6 |
| Female | 35 | 12.4 |
| Ethnic groups | | |
| Brahmin/Chhetri | 97 | 34.4 |
| Janajati | 169 | 59.9 |
| Dalit | 16 | 5.7 |
| Level of education | | |
| Secondary level | 76 | 27.0 |
| Higher secondary level | 177 | 62.8 |
| Bachelor level | 29 | 10.3 |
| Work experience in years | | |
| ≤5 | 140 | 49.6 |
| 6-10 | 88 | 31.2 |
| ≥10 | 54 | 19.1 |

Mean Age \pm S.D (28.0 \pm 5.5), Minimum 15 and Maximum 35 years

Out of 282 respondents, 57.4% were in the age group of 25-34 years and age group of with mean age of the respondents being 28 years. Most of them (87.6%) were male and 12.4% were female. 59.5% of respondents belonged to Janjati group. Moreover, 62.8% of respondents had completed higher secondary level. 49.6% of the respondents had less than 5 years.

Table 2: Respondents' Knowledge regarding Noise Pollution (n=282)

| Variables | Freq. | % |
|---|-------|------|
| Noise pollution affects human health | | |
| Yes | 282 | 100 |
| If yes, effects of noise pollution* | | |
| Feeling of fullness in ear** | 210 | 74.5 |
| Dizziness** | 108 | 38.3 |
| Hearing loss** | 202 | 71.6 |
| Interference with speech communication** | 145 | 51.4 |
| | 160 | 56.7 |
| Ringing in the ear (tinnitus)** | | |
| Preventive measure of noise pollution* | | |
| Use hearing protector (ear plug)** | 136 | 48.6 |
| | 122 | 43.6 |
| Wide green belts** | 117 | 41.8 |
| Planning of cities** | 151 | 53.9 |
| Control of vehicles** | 148 | 52.9 |
| Thickly planted bushes and trees** | | |

Multiple responses * Correct answer**

This table reveals that 100% respondents had knowledge about effect of noise pollution on human health. Regarding effects of noise pollution on human health, 74.5% of respondents answered the feeling of fullness in ear. Concerning the preventive measure of noise pollution, 53.9% of respondents answered control of vehicle.

Table: 3 Respondents' Knowledge regarding the Effects and Prevention of Dust/Fumes/Gas (n=282)

| Variables | Freq. | % |
|--|-------|-------|
| Effects of dust/fumes/gas on human health | | |
| Yes | 282 | 100.0 |
| If yes, effects of dust/fumes/gas* | | |
| Cough** | 222 | 78.7 |
| | 202 | 71.6 |
| Shortness of breath** | 195 | 69.1 |
| Irritation of throat** | 163 | 57.8 |
| Asthma** | 173 | 61.3 |
| Chest infection** | 175 | 62.1 |
| Common cold** | | |
| Prevention of gas/dust/fumes | | |
| Antipollution face mask** | 164 | 58.2 |

Multiple responses* Correct answer**

This table depicts that 100% respondent knew on effects of dust or gas on human health. 78.7% of the respondents answered cough concerning the effects of dust. As regard to the preventive measure of dust or gas on human health, 58.2% of respondents answered antipollution face mask.

Table 5: Respondents level of Knowledge regarding Prevention of Occupational Health Hazards (n=282)

| Level of knowledge | Frequency | Percent |
|--------------------|------------|--------------|
| Poor | 88 | 31.2 |
| Fair | 114 | 40.4 |
| Good | 80 | 28.4 |
| Total | 282 | 100.0 |

Table 5 shows that out of 282 respondents, 40.4% of the respondents had fair knowledge and 28.4% had good level of knowledge regarding prevention of occupational health hazards.

Table 4: Respondents' Responses on Practice regarding Prevention of Occupational Health Hazards (n=282)

| Variables | Yes (%) | No (%) |
|--|-----------|-----------|
| Wear ear plug on duty hour | 14(5.0) | 268(95.0) |
| Use sunscreen cream on duty hour | 58(20.6) | 224(79.4) |
| Wear sun glasses on duty hour | 99(35.1) | 183(64.9) |
| Wear compression stocking on duty hour | 43(15.2) | 239(84.8) |
| Wear comfortable shoes on duty hour | 213(75.5) | 69(24.5) |
| Wear lumbar support belts on duty hour | 37(13.1) | 245(86.9) |
| Wear face mask during duty hour | 172(61.0) | 110(39.0) |
| Wear cap during duty hour | 266(94.3) | 16(5.7) |

Table 4 shows that out of 282 respondents, in regards to the "Yes" Column of statement, almost all respondents 94.3% said wearing cap on duty hour and only 5.0% wear ear plug on the duty hour. In regards to the 'No' column of statements almost all respondents 95% said didn't wear ear plug on duty hour and 5.7% of respondents said they didn't wear cap on duty hour.

Table 6: Association between Respondents' Level of Knowledge regarding Prevention of Occupational Health Hazards and Socio demographic Variables (n=282)

| Demographic variables | Level of Knowledge | | | χ^2 | p- value |
|---------------------------------|--------------------|-----------|----------|----------|--------------|
| | Poor(n%) | Fair(n%) | Good(n%) | | |
| Age group in years | | | | | |
| 15-24 | 23(29.1) | 28(35.4) | 28(35.4) | 10.793 | 0.029 |
| 25-34 | 45(27.8) | 70(43.2) | 47(29.0) | | |
| >35 | 20(48.8) | 16(39.0) | 5(12.2) | | |
| Sex | | | | 0.239 | 0.887 |
| Male | 77(31.2) | 101(40.9) | 69(27.9) | | |
| Female | 11(31.40) | 13(37.1) | 11(31.4) | | |
| Educational Status | | | | 2.329 | 0.675 |
| Secondary level | 24(31.6) | 32(42.1) | 20(26.3) | | |
| Higher Secondary level | 53(29.90) | 74(41.8) | 50(28.2) | | |
| Bachelor and above | 11(37.9) | 8(27.6) | 10(34.5) | | |
| Work experience in years | | | | 3.547 | 0.471 |
| <=5 | 49(35.0) | 50(35.7) | 41(29.3) | | |
| 6-10 | 22(25.0) | 41(46.6) | 25(28.4) | | |
| ≥10 | 17(31.5) | 23(42.6) | 14(25.9) | | |

χ^2 is computed for p-value, Significance level is <0.05

Table 6 shows that there is significant association of traffic policemen's level of knowledge on prevention of occupational health hazards with group of age ($p=0.029$). Similarly, it is insignificant with sex, level of educational status and work experiences.

This table reveals that out of 282 respondents, 54.6% of the respondents had poor level of practice, 42.9% had fair and 2.5% had good level of practice on prevention of occupational health hazards.

Table 7: Respondents' level of Practice regarding Prevention of Occupational Health Hazards (n=282)

| Level of Practice | Frequency | Percent |
|-------------------|------------|--------------|
| Poor | 154 | 54.6 |
| Fair | 121 | 42.9 |
| Good | 7 | 2.5 |
| Total | 282 | 100.0 |

Table 8: Association between Respondents' Level of Practice regarding Prevention of Occupational Health Hazards and Socio demographic Variables (n=282)

| Demographic Variables | Level of practice | | | χ^2 | p-value |
|---------------------------------|-------------------|-----------|-----------|----------|--------------|
| | Poor (n%) | Fair (n%) | Good (n%) | | |
| Age group in years | | | | | |
| 15-24 | 33(41.8) | 42(53.2) | 4(5.1) | 10.129 | 0.038 |
| 25-34 | 94(58.0) | 66(40.7) | 2(1.2) | | |
| >35 | 27(65.9) | 13(31.7) | 1(2.4) | | |
| Sex | | | | | |
| Male | 143(57.9) | 99(40.1) | 5(2.0) | 9.320 | 0.009 |
| Female | 11(31.4) | 22(62.9) | 2(5.7) | | |
| Brahamin/Chhetri | 56(57.7) | 41(42.3) | 0(0) | 13.332 | 0.010 |
| Janjati | 94(55.6) | 70(41.4) | 5(3.0) | | |
| Dalit | 4(25.0) | 10(62.5) | 2(12.5) | | |
| Educational Status | | | | | |
| Secondary level | 49(64.5) | 24(31.6) | 3(3.9) | 6.217 | 0.183 |
| Higher Secondary level | 90(50.8) | 64(47.5) | 3(1.7) | | |
| Bachelor and above | 15(51.7) | 13(44.8) | 1(3.4) | | |
| Work experience in years | | | | | |
| ≤ 5 | 62(44.3) | 74(52.9) | 4(2.9) | 12.553 | 0.014 |
| 6-10 | 59(67.0) | 27(30.7) | 2(2.3) | | |
| >10 | 33(61.1) | 20(37.0) | 1(1.9) | | |

χ^2 is computed for p-value, Significance level is <0.05

Table 8 shows that there is significant association of traffic policemen's level of practice on prevention of occupational health hazards with group of age ($p=0.038$), sex ($p=0.009$) and work experience ($p=0.014$). Similarly, it is insignificant with level of educational status of respondents.

DISCUSSION

This study reveals that in area of effects on ultraviolet radiation to human health, 100% of the respondents knew effect of U/V radiation on human health. Similar findings are present in study conducted by Yan et al (2010) revealed that 94.8% of the respondents knew that UV harms to the skin on human ⁷.

In this study of preventive measure of U/V radiation on human health, 35.1% of the respondents wear sun glasses, almost all 94.3% respondents wear cap, 20.6% respondents apply sun screen cream and as regard to the practice of preventive measure of UV radiation female gender significantly influenced this practice of applying sunscreen cream. Whereas the similar study done by Al-Naggar (2013) revealed that 84.6% of the respondents were used caps, 68.9% of respondents wear sun glasses and 16.9% of the respondents used a sunscreen cream⁵.

This study reveals that in the area of prevention from backache, 55.1% of the respondents had taken pain relief medication. Whereas the similar findings of the study, 58% of the respondents had taken pain relief medication. The finding of this study is supported by the Anderson, Zutz, and Plecas (2011) was conducted that lower back pain in municipal traffic policemen ⁸.

This study shows that wearing of ear plug on duty hour, 5% of the respondents used ear plug on duty hour and 95% of the respondents were not use ear plug on duty hour. Similar study supported by Joshi (2012) revealed that noise pollution, 7.3% of respondents used earplugs during working hours and 92.7% used nothing ⁹.

This study revealed that 100% of respondents had known effects on dust or gas to human health. This finding of this study is not supported by literature of Lormphongs & Chaikittiporn (2010) revealed that Knowledge about the hazards of exposure to MTBE (gas) 9.8% of the respondents knew effects on human health ¹⁰.

This study revealed that the preventive measure of dust or gas, 61% of the respondents were used cloth face mask on duty hour where as the findings of this study is supported by Lormphongs & Chaikittiporn (2010) showed that 96.4% of the respondents were used cotton cloth mask ¹⁰.

CONCLUSION

Based on the findings, it can be concluded that more than three fourth of respondents had good knowledge on effects and prevention of dust or gas and prolonged standing effects on backache. The level of knowledge regarding prevention of occupational health hazards is statistically significant with age and government provided safety measures. It is concluded that traffic policemen's knowledge on prevention of occupational health hazards had fair knowledge and poor preventive practices.

Practice regarding the prevention of occupational health hazards, more than half of respondents had poor preventive practices such as wearing gloves, back support belts, compression stocking, apply sunscreen cream and wearing ear plug on duty hour. Less than half of respondents had fair preventive practice such as wearing face mask on duty hour, and good preventive practices of move leg in between duty hour, wearing comfortable shoes, cap, wash face with soap and water after duty. The level of practice on prevention of occupational health hazards is statistically significant with age, Sex and work –experiences.

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