

Occupational Health Hazard among Security Guards in Kathmandu District, Nepal

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ABSTRACT

Introduction: The job of a security guard is to protect the property and the people who reside or work on the premises where they guard. Occupational safety requires the maintenance and the promotion of workers' health and working capacity by improving the working environment and the development of working organizations. This study aimed to assess the occupational health hazards among the security guards and to find an association between occupational health hazards with demographic variables.

Methods: A cross-sectional study was conducted among the security guards across the Kathmandu district from 20th December 2020 to 8th January 2021 using a convenient sampling technique. The data was collected by direct interview method using the structured questionnaire.

Results: The mean age of the respondents was 36.5 years with a standard deviation of 9.54. Males were 88.5 %. Most of the respondents (74%) were married. The majority of the respondents (78%) were Hindu by religion. The prevalence of Muscle pain was 70%, one-fifth of the respondents (20%) had lower back pain. Neck pain, elbow-hand- wrist pain and upper back pain each was present in 10% of the respondents.

Conclusion: The muscular pain was not significantly different with demographic variables age, sex, marital status, ethnicity, religion and education status. The muscle pain was found higher in the low worked experience of the security guards and not statistically significant.

Key words: Health hazard, Muscular pain, Security guard, Sleep disorder.

Introduction

The role of a security guard is important for protecting private property and the people who reside or work on the premises guarded by the security guards. However, there are several risks that security guards often face that include many workplace hazards, particularly assaults. Occupational safety is a multi-disciplinary approach to developing and ensuring compliance with safe working practices and maintaining

the health and well-being of those employed in a particular occupation or workplace.¹ Occupational safety requires the maintenance and the promotion of workers' health and working capacity by improving the working environment and the development of work organizations and working cultures which supports health and safety at the workplace. It promotes a positive social environment and smooth operation and may enhance the productivity of the work.¹ *The occupational health hazards can be broadly classified as biological, chemical, physical, ergonomic, and psychological agents, and accidents.*² The objective of the study was to assess the occupational health hazards in the security guards and to find an association between occupational health hazards with demographic variables.

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Methods

The descriptive cross-sectional study was conducted from 20th December 2020 to 8th January 2021 in hospitals, banks, supermarkets and private companies that employed security guards across the Kathmandu district. A convenient sampling technique was used to select study units and the sample size was calculated using the formula,

$$n = Z^2 pq/d^2$$

where n= sample size

Z= 1.96 for a confidence interval of 95%

p= Prevalence of musculoskeletal problems = 68%³

q= 1-p

d= margin of error (here, the value of d is taken 7%)

Sample size (n) = $Z^2 pq/d^2 = (1.96)^2 \times 0.68 \times (1-0.68)/0.07^2 = 171$. Taking a 15% non-response rate, the final sample size was approximately 200. Ethical approval was taken from the Institutional Review Committee of Kathmandu Medical College. Data was collected from the participants by interview method using the structured questionnaire after taking informed written consent. The questionnaire consists of demographic data, occupational health, and exposure to risk factors. The collected data are entered and analysed by using SPSS version 22. Chi-square test was used to find the association between variables and a p-value less than 0.05 is considered a significant difference.

Results

Among 200 respondents, 177 (88.5 %) were male and 23 (11.5%) were female. The mean age of the respondents was 36.5 years with a standard deviation of 9.54 years. The minimum and maximum age were 20 and 61 years respectively. The highest percentage of respondents 68(34%) was in the age group of 30

to 39 years. Three quarter 148 (74%) were married. A total of 156 (78%) were Hindu.

Talking about the ethnicity, 65 (32.5%) were in *Chhetri* followed by *Janajaati* 48 (24%). The majority of the respondents 130 (65%) had completed secondary level education (Table1). The highest number of respondents 54 (27%) were working at Bank followed by Hospital 37 (18.5%).

Among all respondents, 62 (31%) were smoker. Around half of the respondents, 94 (47%) consumed alcohol. Three-quarter 148 (74 %) of the respondent's salary was in the range of Nepalese rupees 20000-30000. More than half of the respondents 113 (56.5%) were satisfied with their salary (Table 2).

Out of 200 respondents, 117 (58.5%) are working in the daytime and 51 (25.5%) respondents had prior work experience before joining their current workplace. Among total respondents, 34 (17%) spend 8 hours at the workplace, 18 (9%) spend 10 hours and 148 (74%) spend 12 hours and more at the workplace. Out of the total, 50 (25%) had a standing work posture. Only 16 (8%) security guards said their job is risky. Out of the total respondents, only 10 (5%) had faced violence during work. Among the total respondents, 146 (73%) have insurance coverage by their company (Table 3).

The major health problems observed among the security guard were Muscle pain 140 (70%), easy tiredness and fatigability 140 (70%), back pain 40 (20%). Out of the total respondents, 16.5% of respondents felt their work is stressful (Table 4).

The mean work experience as the security guard was 7 years with a SD of 6.2 years. The muscle pain was found higher in lower work experience and was not statistically significant (Table 5).

Table 1: Distribution of the respondents by demographic variables (n=200)

Characteristics	Muscular Pain		Total n (%)	P value		
	Present n (%)	Absent n (%)				
Age (in years)	20-29	47(81.0)	11(19.0)	58(29)	0.167	
	30-39	43(63.2)	25(36.8)			68(34)
	40-49	34(68.0)	16(32.0)			50(25)
	≥50	16(66.7)	8(33.3)			24(12)
Sex	Male	124(70.1)	53(29.9)	177(88.5)	0.961	
	Female	16(69.6)	7(30.4)	23(11.5)		
Marital Status	Married	105(70.9)	43(29.1)	148(74)	0.622	
	Unmarried	35(67.3)	17(32.7)	52(26)		

Religion	Hindu	110 (70.5)	46(29.5)	156(78)	0.410
	Buddhist	23(63.9)	13(36.1)	36(18)	
	Christian	7(87.5)	1(12.5)	8(4)	
Ethnicity	Janajaati	27(56.2)	21(43.8)	48(24)	0.070
	Dalit	15(75.0)	5(25.0)	20(10)	
	Madhesi	11(73.3)	4(26.7)	15(7.5)	
	Brahmin	29(64.4)	16(35.6)	45(22.5)	
	Chhetri	53(81.5)	12(18.5)	65(32.5)	
	Others	5(71.4)	2(28.6)	7(3.5)	
Education status	No formal education	6(100.0)	0(0.0)	6(3)	0.259
	Primary	14(66.7)	7(33.3)	21(10.5)	
	Secondary	86(66.2)	44(33.8)	130(65)	
	High School	30(78.9)	8(21.1)	38(19)	
	Bachelors	4(80.0)	1(20.0)	5(2.5)	

n: number; %: percentage

Table 2: Distribution of the respondents by behavior

Characteristics		No. of respondents n (%)	
Workplace	Hospital	37(18.5)	
	Bank/ ATM	54(27)	
	Hotel	35(17.5)	
	Mall and Supermarket	36(18)	
	Hostel	23(11.5)	
	Others	15(7.5)	
Smoking	Yes	62(31)	
	No	138 (69)	
Alcohol consumption	Yes	94(47)	
	No	106(53)	
Salary (in Rupees)	<20000	51(25.5)	
	20000-30000	148(74)	
	>30000	1(0.5)	
Satisfaction from salary	Yes	113(56.5)	
	No	87(43.5)	

n: number; %: percentage

Table 3: Distribution of respondents by work-related variables

Characteristics		Muscular pain		No. of respondents n (%)	P-value
		Yes n (%)	No n (%)		
Work shift	Day	81(69.2)	36(30.8)	117(58.5)	0.933
	Night	4(66.7)	2(33.3)	6(3)	
	Rotation	55(71.4)	22(28.6)	77(38.5)	
Experience	Yes	39(76.5)	12(23.5)	51(25.5)	0.243
	No	101(67.8)	48(32.2)	149(74.5)	
Duration spent at work (Hours)	8	23(67.6)	11(32.4)	34 (17)	0.721
	10	11(61.1)	7(38.9)	18 (9)	
	≥12	106(71.4)	42(28.6)	148 (74)	
Work posture	Standing	32(64.0)	18(36.0)	50(25)	0.111
	Sitting	5(45.5)	6(54.5)	11(5.5)	
	Movement	105(75.5)	34(24.5)	139(69)	
Job risk	Yes	14(87.5)	2(12.5)	16(8)	0.111
	No	126(68.5)	58(31.5)	184(92)	

Violence	Yes	9(90.0)	1(10.0)	10(5)	0.157
	No	131(68.9)	59(31.1)	190(95)	
Insurance	Yes	102(69.9)	44(30.1)	146(73)	0.945
	No	38(70.4)	16(29.6)	54(27)	

n: number; %: percentage

Table 4: Muscle pain and comorbidities in the security guards

Variables	No. of respondents n (%)
Muscle pain	140(70)
Lower back pain	40(20)
Joint pain and stiffness	26(13)
Upper back pain	20 (10)
Shoulder pain	20(10)
Foot-ankle pain	20(10)
Elbow, hand-wrist pain	10(5)
Neck pain	10(5)
Hip-thigh pain	10(5)
Knee pain	10(5)
Easy tiredness and fatigability	140(70)
Sleep disorder	84(42)
Stress	33(16.5)
Hypertension	28(14)
Pain abdomen	16(8)
Visual impairment	7(3.5)
Ear problems	3(1.5)

Table 5: Distribution of muscle pain according to work experience

Work Experience (in years)	Muscle pain		Total n (%)	P value
	Present n (%)	Absent n (%)		
0	21 (84.0)	4(16.0)	25 (100.0)	0.141
1-5	69(70.4)	29(29.6)	98(100.0)	
6-10	25(73.5)	9(26.5)	34(100.0)	
≥11	25(58.1)	18(41.9)	43(100.0)	
Total	140(70.0)	60(30.0)	200(100.0)	

Discussion

This study was conducted to assess the occupational health hazards among the security guards working in different private companies in the Kathmandu district. The number of security guards is in increasing fashion. This can be understood by the trend of people accompanying a job as a security guard officer after having worked as an army in the past. No reports are reflecting on the number of security guards working in Nepal. However, according to the Department of Labor Statistics, there are more than 1.1 million private security guards which are almost double the number of police officers and sheriffs in the United States.⁴

In the present study, the males are 88.5% and females are 11.5%. The mean age of security guards was 36.5 years with a standard deviation of 9.54 years. This finding is consistent with a study conducted by Bhandare in India in which male was 74% and mean and standard deviation of the age of security guards were 26.8 years and 23.74 years, respectively. There was no significant difference between muscular pains with demographic variables age, sex, religion, ethnicity, marital status and education status.

The mean work experience as the security guard was 7 years with a standard deviation of 6.2 years. The muscle pain was found higher in low worked

experience and found not statistically significant. This finding is consistent with the finding of S Kaur where the mean work experience was 6.8 years with a standard deviation of 3.7 years.³

In the present study, 31% of the respondents were smoker and around half of the respondents (47%) consume alcohol. These findings are inconsistent with the finding of S Kaur³ where 58% of the guards were alcoholic while only 19% were smokers.

Three-quarter of respondents (73.5%) was working between 10-20 hours in a shift and 26% spend less than 10 hours at the workplace. The burden of work is much higher in security guards. This along with varying day and night shifts is associated with more sleep problems as well as increased incidence of anxiety and stress among security guards. The study conducted by Ahmad A showed that substance abuse was present in 20.7%, antisocial personality disorder was seen in 46.7%, borderline personality disorder was seen in 35.7% and depression was seen in 48% of the individuals.⁵

On assessing risk factors present at work, 5% complained of some form of violence at work. 19.5% complained that work has affected their sleep pattern and 26% complained of irregular mealtimes. However, only 8% think their job is a risk to their health. This gives an insight to assessing knowledge of occupational health hazards among them. Many security guards do not understand health hazards and their importance.

Security guards are exposed to numerous hours of active work that includes various working postures. In the present study, 25% had mostly standing work posture, 6% sitting and 69% movement during the work. Due to such prolonged working conditions in such postures, they were at the highest risk of developing many medical conditions in the future. Due to prolonged standing, the common health problems were lower back pain, physical fatigue, muscle pain, leg swelling, tiredness, and body part discomfort.⁶ So security guards are at a very high risk of developing these conditions in the future. This can be prevented by making proper policies that address these problems. Also, early diagnosis and treatment should be done, and this is the responsibility of the private security companies providing jobs. However, most of them did not have access to medical services according to the present study. Almost 73% had health insurances

covered by their respective companies but they did not undergo regular medical check-ups. Only 5% experienced any form of violence with verbal violence being the most common. The study conducted by Leino et al in Finland reported that 39% experienced verbal aggression, 19% experienced threats of assault, and 15% experienced physical violence at least once a month.⁷

The main health problem experienced by the security guards was found to be muscle pain in 70%. This finding is consistent with the finding of a study conducted in security guards working in a thermal plant in India where it was 68%,⁵ lower back pain in 20%, neck pain, upper back pain and foot-ankle pain in 10% shoulder pain, elbow-hand- wrist pain, hip-thigh pain, and knee pain in 5% and a *study conducted among security guards working in Portuguese private security companies found the musculoskeletal problems (78%), depression symptoms (61%), fatigue (71%) and sleep disorders in up to 40%*⁴. Based on a study conducted among security guards in Serbia, results showed a significant impact of occupational stress on health impairments and work disabilities⁸ that the prevalence of Low Back Pain among the guards was 48%.³

The most common complaints of security guards were easy tiredness and fatigability in 70% and sleep disorders in 42%. This finding was consistent with a study conducted among security guards working in cash-in-transits in a Portuguese Bank, they have a similar prevalence of musculoskeletal problems 87%, easy tiredness and nervousness in 60%.⁹ The muscle pain was found higher in low worked experience and not statistically significant. This finding is similar to the findings of Bhandare et al.¹⁰

Conclusion

The musculoskeletal disorder was found to be the most common morbidity in the security guards followed by easy tiredness, fatigability and sleep disorders. The muscle pain was found higher in the security guards with less work experience which was not statistically significant. The security guards are definitely at risk of multiple health problems in the present as well as in the future. This becomes even more important to address because this profession demands active physical work, however, less importance is being given to control health hazards in the security guards.

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