



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3376415>

Available online at: <http://www.iajps.com>

Research Article

LEVEL OF FATIGUE IN TRAFFIC WARDENS OF LAHORE; A PREVALENCE STUDY

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Article Received: June 2019

Accepted: July 2019

Published: August 2019

Abstract:

Objectives: To figure out the level of fatigue in traffic wardens in region of Lahore.

Material and Methods: An observational cross sectional survey was done. A total of 177 traffic wardens fulfilling inclusion criteria from the different roads of Lahore were taken for the proposed study by non-probability convenient sampling. Fatigue severity scale [FSS] was used to measure the level of fatigue. The validity and reliability of this scale [FSS] was established by Geri B. Neuberger. The duration of the study was 2 months from May to June 2018.

Results: It was observed that out of 177 respondent 7 [4%] very strongly disagreed, 34 [19.2%] strongly disagreed, 19 [10.7%] only disagreed, 20 [11.3%] were neutral, 30 [16.9%] agreed to the statement, 30 [16.9%] strongly agreed, 37 [20.9%] very strongly agreed that their motivation was low when they were fatigued.

Conclusion: It was concluded that performing jobs in prolonged standing has contributed numerous health effects such as work-related musculoskeletal disorders, chronic venous insufficiency and carotid atherosclerosis. However, those injuries can be minimized through ergonomics application of engineering and administrative controls.

Keywords: Traffic, Warden, Muscle fatigue.

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Please cite this article in press Maria Mustafa et al., *Level of Fatigue in Traffic Wardens of Lahore; A Prevalence Study.*, Indo Am. J. P. Sci, 2019; 06[08].

INTRODUCTION:

Occupational health and safety is an important issue. Occupations requiring high physical demands from workers may cause both physical and psychological fatigue. Prolonged standing is an important risk factor for occupational injuries.[1]

Fatigue may be defined as physical and/or mental weariness resulting from exertion, that is, an inability to continue exercise at the same intensity with a resultant deterioration in performance. It can be described as the lack of energy and motivation [both physical and mental]. This is different than drowsiness, a term that describes the need to sleep. Aside from drowsiness, other symptoms can be confused with fatigue including shortness of breath with activity and muscle weakness. Again, all these symptoms can occur at the same time.

The nature of job of traffic wardens demands standing for the entire day and puts a constant stress on the lower extremities plus added work demand of arms may increase the level of both physical and psychological fatigue that can reduce their efficiency at work. Prolonged standing can lead to fatigue induced pain and increased muscle and joint stiffness in traffic wardens. Prolonged standing at occupations has been described as spending above 50% of the working hours in standing position [1] or standing for more than 8 hours a day.[3]

A study on analysis of fatigue in manufacturing workers has shown muscle fatigue in all the workers due to prolonged standing.[2] Chronic venous insufficiency, musculoskeletal pain in lower back and feet were found to be the health risks associated with prolonged standing.[3]

High level of fatigue in jobs demanding prolonged standing or physical efforts can be attributed to both physical and psychological factors. A prospective study conducted on nurses' aides has shown high demands and lack of rewards at work to add up to persistent fatigue. Moreover reduction of work demands, adequate feedback and mental support has shown to reduce the level of fatigue.[4]

Current study was found out the level of severity of fatigue in traffic wardens and how did it affected their working ability. No work has been done

regarding the role of occupations requiring prolonged standing in causing fatigue in our setting.

MATERIAL AND METHODS:

A cross sectional study was done. A total of 177 traffic wardens, ages 25-50 years, only male with no history of physical and mental illness in past ten weeks were taken from Lahore for the purpose of this study. The duration of the study was 2 months from May to June 2018.

The data was collected by using Fatigue Severity Scale [FSS] questionnaire. The validity and reliability of this scale [FSS] was established by Geri B. Neuberger.[8] Non-probability convenient sampling was done for the data collection.

The following procedure was used for evaluation of the patients: FSS was used as a measurement to determine the level of fatigue severity in traffic wardens. The FSS questionnaire contains nine statements that attempt to explore severity of fatigue symptoms. Read each statement and circle a number from 1 to 7, depending on how appropriate they felt the statement applied to them over the preceding week. A low value indicates that the statement is not very appropriate whereas a high value indicates agreement [1 very strongly disagree, 7 very strongly agree]. The scoring was done by calculating the average response to the questions [adding up all the answers and dividing by nine].

All collected data was entered in computer program Statistical Package of Social Science [SPSS] version 20 and analyzed through this very software. Mean \pm standard deviation was calculated for quantitative variable while frequencies and percentages were calculated for qualitative variable.

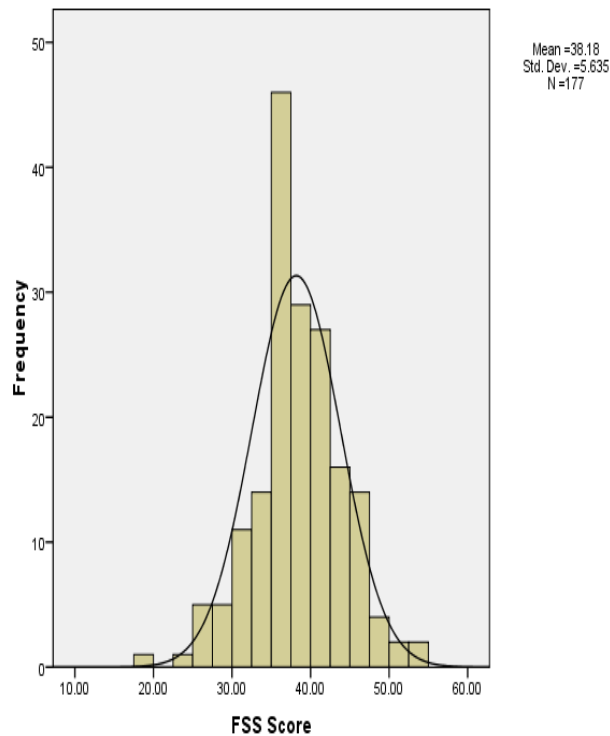
RESULTS:

Among 177 respondents of traffic wardens, mean ages and standard deviation were 35.33 ± 6.24 with minimum age 25 years and maximum 53 years. Out of 177 respondent, 152 [85.9%] were married and 25 [14.1%] were unmarried. FSS score among 177 respondents, means and standard deviation 38.18 ± 5.63 with minimum score 18 and maximum score 53 was measured. Fatigue Severity Scale was applied for measuring score of nine statements [Table I] of fatigue symptoms.

Table I: Frequencies and Percentages of Nine Statements of FSS N = 177

	Very strongly disagree	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Very strongly agree
Motivation is lower when fatigued	7[4]	34[19.2]	19[10.7]	20[11.3]	30[16.9]	30[16.9]	37[20.9]
Exercise brings on fatigue	5[2.8]	40[22.6]	24[13.6]	21[11.9]	24[13.6]	41[23.2]	22[12.4]
Easily fatigued	9[5.1]	32[18.1]	31[17.5]	21[11.9]	10[5.6]	40[22.6]	34[19.2]
Fatigue interferes with physical functioning	10[5.6]	31[17.5]	22[12.4]	26[14.7]	26[14.7]	45[25.4]	17[9.6]
Fatigue causes frequent problems	7[4]	33[18.6]	30[16.9]	28[15.8]	23[13]	38[21.5]	18[10.2]
Fatigue prevents sustained physical functioning	17[9.6]	27[15.3]	30[16.9]	31[17.5]	18[10.2]	42[23.7]	12[6.8]
Fatigue interferes with carrying out certain duties and responsibilities	8[4.5]	27[15.3]	28[15.8]	31[17.5]	31[17.5]	36[20.3]	16[9]
Fatigue is among three most disabling symptoms	12[6.8]	28[15.8]	29[16.4]	30[16.9]	23[13]	37[20.9]	18[10.2]
Fatigue interferes with work, family, or social life	13[7.3]	26[14.7]	34[19.2]	34[19.2]	26[14.7]	30[16.9]	14[7.9]

Foot Note: Numbers in brackets are shown percentages. Others are shown frequencies.

Graph 1: Fatigue Severity Scale Score N = 177

DISCUSSION:

In this study, FSS score was measured as minimum score 18 and maximum score 53 which was indicated fatigue in respondents. The study was carried out on a very initial assessment and findings from the proposed hypothesis. It is recommended to carry out the study in details which should include digital fatigue measuring tools developed in the world. It is further recommended to enhance the fatigue measurement study to different professions of high concentration and requiring more physical endurance which may vary from pilots to factory labours.

Less rest intervals, improper type of shoe wear and the surface over which worker has to stand for hours are some of the important factors leading to fatigue.[1] Traffic wardens have to do prolonged standing with less rest intervals and they have to stand on roads made of concrete for hours which makes them more vulnerable to suffer from muscular fatigue. Another study has found moderately strong correlation between age, height, weight, job tenure and perceived fatigue discomfort.[5]

A study conducted to find differences in lower leg swelling and fatigue in sitting, standing and sit-stand chair has shown Standing to cause more fatigue in entire lower extremities specifically feet as compared to other positions.[6] Significantly higher fatigue rates [$P < 0.05$] were found in leg and lower back muscles in stationary standing postures as compared to dynamic postures.[7]

It is evident from the study that the traffic warden in Lahore suffers from fatigue due to their long physical and mental endurance hence it is suggested to reduce their duty hours from eight hours to maximum six hours in order to reduce the fatigue suffering. Furthermore they should be provided with respite in order to make them fresh during the duty hours instead of continuous duty. Simultaneously, a provision should be made in their employment contract which offer them leave fare assistance, after every six months, during which they may visit any recreational place to mitigate the effect of the mental stresses the tackled during the period.

CONCLUSION:

It can be concluded that performing jobs in prolonged standing has contributed numerous health effects such as work-related musculoskeletal disorders, chronic venous insufficiency and carotid atherosclerosis. However, those injuries can be minimized through application of ergonomics applications of engineering and administrative controls.

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