



Original

Prevalence of Work-Related Musculoskeletal Disorders (WRMSDs) among Long Distance Drivers in Port Harcourt Metropolis

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Abstract

Background: Work-related musculoskeletal disorders (WRMSDs) are a leading cause of occupational injuries in both industrialized and developing countries, with medical, occupational, economic, and psychosocial consequences not just for the workers but on the society at large. This study assessed the prevalence of work-related musculoskeletal disorders among private long-distance transport company bus drivers in Port Harcourt metropolis, Nigeria.

Method: A Descriptive cross-sectional study design was used for the study. 338 long-distance bus drivers in Port Harcourt metropolis were sampled using the multi-stage sampling technique. An adapted Standardized Nordic Musculoskeletal Survey questionnaire was used to obtain primary data and analyzed using descriptive statistics. The participants were all male. An exploratory descriptive data analysis using frequencies and percentages was done to measure prevalence of WRMSDs using the SPSS.

Result: The results from the descriptive analysis showed that WRMSDs was found to be present in 58.6% of the study population.

Conclusion: The outcome revealed that WRMSDs are common among long-distance bus drivers.

Keywords: Prevalence, Work-related Musculoskeletal Disorders, WRMSDs, Long-distance, Port-Harcourt, Drivers.

Introduction

The musculoskeletal system is made up of muscles, tendons, ligaments, cartilage, nerves and bone. They shape, support, stabilize and move the human body.¹ When occupational practices and work environments substantially contribute to the development of musculoskeletal disorders such as pain and functional disability, the World Health Organization (WHO) acknowledges them as work-related musculoskeletal disorders.² It can also be defined as the impaired functioning of various joints, muscles, tendons, nerves and bones as a result of the work environment.³ To date, WRMSDs are the most frequent health complaints of

workers in both developed and developing nations, accounting for 44% of all work-related injuries and illnesses in Great Britain.⁴ Additionally, WRMSDs are one of the leading causes of activity-limiting diseases among employees,⁵ imposing a substantial burden on the employer and employee, resulting in absenteeism and loss of work hours, with significant economic impact.⁶ These conditions contribute to considerable morbidities such as physical injuries and disability, a decrease in the quality of life, and a substantial burden on healthcare facilities.⁷ WRMSDs have been in existence and are commonly reported with some occupations like tailoring, construction work, health



care, hair dressing, farming, policing, diving and any job that subjects the musculoskeletal system to significant imbalance.⁸ The high prevalence rate of this disease or condition (WRMSDs) has been reported among bus drivers.⁹

A study conducted in Tricity, India, reported that transport workers had a high WRMSD prevalence of about 53% with the lower back and neck being the most common sites of injury followed by knee, shoulder and ankle.¹⁰ A South African study reported a 55.8% prevalence of WRMSD among occupational bus drivers while a study conducted in Ibadan, Nigeria reported a prevalence of 89.3% among occupational drivers.^{11,9}

Long-distance driving is described as driving a distance in a range covering 300km or a drive further than 3 hours in a single journey.¹² People travel throughout Nigeria's states on a daily basis because it is such a heavily populated country. The prohibitive cost of air travel has forced the typical Nigerian to rely on road travel as their primary mode of public transport. As a direct consequence, there is an increased work demand on bus drivers, especially long-distance drivers.

While wondering if long distance bus drivers in Rivers State would develop WRMSD, the researcher was moved to conduct the study on the prevalence of WRMSDs among long distance bus drivers in Port Harcourt metropolis. This was so as Port Harcourt metropolis is the largest city in the State, with lots of people moving in and out of the city. Road transportation, especially by bus, is one of the common means of transportation, consequently placing a burden on the drivers especially those who go long distances. The nature of the Nigerian road as well as the high level of insecurity in Nigeria exposes these occupational group to hazards, affecting their personal and social life and a group of interest.

Method

Study Design

A Descriptive cross-sectional study design was used for the study.

Study Area

The study was conducted in Port Harcourt metropolis, one of the major centers of economic activities in Nigeria, located between latitude 4°45' N and latitude 4°55' N and longitude 6°55' E and longitude 7°05' E in Rivers State.¹³ The city extends across Port Harcourt and Obio/Akpor Local Government Areas with an

estimated population of 1.85million inhabitants as at 2016.¹⁴ The Port Harcourt metropolis is a major study industrial center with a large number of multinational firms, particularly, the petroleum industry, therefore known as the chief oil-refining city in Nigeria with two main refineries located at Eleme. Most buses coming into the State have their terminals at Port Harcourt city. The precise locations for the study covered motor parks located around Oil Mill junction, Waterlines, Rumuokoro and Aba Road axis and was restricted to long-distance bus drivers.

Study Population

The study population comprises of male private transport company bus drivers who travel long distances, for at least 2 years covering a minimum of 300km on each journey at least 3 times per week. While those who were sick or on leave from work at the time of the study were excluded, bus drivers who consented to participate were recruited.

Sample Size

The sample size (n) was determined using the Cochran's formula.¹⁵

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

The derived sample size was 329 while the non-response of 10% was added which resulted in total sample size of 362.

Sampling Technique

A multi-stage sampling technique was used to select the drivers for the study using the cluster sampling and simple random sampling technique as follows;

- A list of all commercial transport companies who travel long distances, with terminals in Port Harcourt city was obtained from the Rivers State Ministry of Transport.
- The transport companies were then divided into clusters with respect to their locations.
- Random sampling by ballot done to select four clusters.
- A preliminary survey was then conducted to determine the total number of transport companies and their drivers in each cluster.
- From each selected cluster, a random sampling by ballot was used to select transport companies from which drivers will be selected.
- A list of the drivers from each selected company was obtained to determine the number of drivers needed from each selected commercial transport company.



Using the formula;

$$\frac{\# \text{ Driver from each company}}{\text{Sample size}} \times \# \text{ Driver all company}$$

- Simple random balloting was then done to select bus drivers from each selected company with the list provided until the required number allocated to each transport company was obtained.

Data Collection

Data was collected on socio-demographic characteristics of the participants, occupational and past medical history and history of musculoskeletal disorder in present occupation. A structured interviewer administered questionnaire was adapted from the Nordic Musculoskeletal Questionnaire used to evaluate musculoskeletal disorders. Data collection was mainly done in the morning hours before the departure of the morning buses and also in the evening hours before the departure of some night buses and arrivals of buses from other States into Port Harcourt metropolis.

Methods of Data Analysis

The data collected was entered using Microsoft Excel and was then transferred to be analyzed with the Statistical Package for Social Sciences (SPSS) version 24 software. Exploratory Descriptive statistics (frequency and percentages) were used to analyze the data and present them in tables.

Ethical considerations

Ethical approval to carry out this study was sought and obtained from the Research Ethics committee of the University of Port Harcourt with ethical approval number UPH/CEREMAD/REC/MM72/063, and permission was sought and obtained from the managers of the selected transport companies before the commencement of the study. Informed consent was obtained from each driver before they were included in the study.

Results

A total of 362 questionnaires were administered, however, 338 questionnaires were properly filled and analyzed. Hence the study had a response rate of 93.37%.

Table 1: Socio-demographic Characteristics of the long-distance bus drivers

Variable	Frequency (n=338)	Percentage (100%)
Age		
18-24 years	6	1.8
25-31 years	41	12.1
32-38 years	72	21.3
≥39 years	219	64.8
Level of education		
Primary	68	20.1
Secondary	238	70.4
Tertiary	32	9.5
Marital status		
Single	53	15.7
Married	285	84.3
Religion		
Christian	285	84.3
Islam	51	15.1
Others	2	0.6

Table 1 shows the socio-demographic characteristics of the private long distance bus drivers. All respondents were male, with most of whom were 39 years and above (n=219, 64.8%), had secondary level of education (n=238, 70.4%), married (n=285, 84.3%) and Christians (n=285, 84.3%).

Table 2: Occupational/past medical history of the long-distance bus drivers

Variable	Freq (n=338)	Percent (%)
How long have you been working as driver?		
2-4 years	13	3.8
>4-6 years	19	5.6
>6-8 years	39	11.5
>8 years	267	79.0
Have you ever been diagnosed/treated for any muscle or joint pain in your previous occupation?		
Yes	103	30.5
No	235	69.5



Variable	Freq (n=338)	Percent (%)
Which part of your body did you feel the muscle or joint pain in previous occupation? (n=103)		
Shoulder	21	20.4
Lower back	18	17.5
One or both hips/thigh/buttocks	17	16.5
One or both knees	11	10.7
Elbow	9	8.7

Variable	Freq (n=338)	Percent (%)
Neck	9	8.7
Wrist/hand	8	7.8
Upper back	7	6.8
One or both ankles/feet	3	2.9

Table 2 showed that most of the drivers have been working as drivers for over 8 years (n=267, 79.0%), and 103 (30.5%) have had a history of muscle or joint pain in their previous occupation.

Table 3: Prevalence of WRMSDs among the long-distance bus drivers

Variable	Frequency (n=338)	Percent
Have you at any time felt any form of muscle/joint pain, discomfort or numbness in any part of your body in your present occupation?		
Yes	198	58.6
No	140	41.4
Which part of your body did you feel pain in your present occupation? (n=198)		
Lower back	44	22.2
One or both hips/thighs/buttocks	35	17.7
One or both knees	25	12.6
Shoulder	23	11.6
Upper back	16	8.1
Wrist/hand	14	7.1
Elbow	12	6.1
Neck	11	5.6
Muscles pains	9	4.5
One or both ankles/feet	5	2.5
Bone pains	4	2.0
How long have you been feeling the pain? (n=198)		
>6-12 months	78	39.4
>3-6months	15	7.6
1-3 months	105	53.0
Have you been off work due to muscle/joint pain? (n=198)		
Yes	46	23.2
No	152	76.8

The prevalence of WRMSDs was 58.6% (198 respondents), with low back pain (n=44, 22.2%, hip/thigh/buttocks pain (n=35, 17.7%) and knee pain (n=25, 12.6%), being the most commonly affected body region (Table 3).



Discussion

The study findings have shown a high prevalence of commonly occurring WRMSDs in more than half (58.6%) of the study population. The finding is similar to the result of a study conducted in among Tri-city bus drivers in India which reported a 53% prevalence of work-related musculoskeletal disorders among the drivers.¹⁰ This similarity may be due to the slight difference in the number of the study participants for both studies.

The current study finding differs from the result of a study in Ibadan, Nigeria reported a higher prevalence (89.3%) of WRMSDs among occupational drivers.⁹ The difference in the prevalence rate may be attributed to the number of sampled drivers (159) selected from four transport companies in Ibadan or due to misunderstanding of WRMSDs by the respondents. Another study in Mubi, Northern Nigeria, among occupational drivers reported a lower prevalence (21.2%) of WRMSDs which may be due to the non-probability convenient sampling technique employed for the study.¹⁷

The frequency of WRMSD among long-distance bus drivers in Port Harcourt metropolis can be linked to the city's high population density and steady rise in the expense of living, exposing them to risk factors with little time to rest and recuperate. If not addressed, this could lead to absenteeism from work, early retirement, or even disability, which would have a negative impact on their immediate family and the society at large.

An important finding from the current study is the pattern of distribution of the prevalence in different parts of the body of the study participants. The lower back had the most prevalence and agrees with the finding of a Nigeria and Indian studies^{9,10}, which can be explained by the fixed position of this body region while driving, keeping the muscles of this region contracted for as long as the driving takes, over working the muscles. If this continues for years, without adequate recovery, WRMSD occurs.

Implications of the findings: Preventing WRMSDs in long-distance drivers necessitates a multimodal strategy that includes proactive steps to improve musculoskeletal health in this particular occupational group as well as education and awareness campaigns.

Strengths and Limitations of study: Most commercial drivers like in Port Harcourt behave in similar way. Thus, the results from this study can be used to make reference on all commercial long-distance drivers.

Conclusion

This study determined that there was a high prevalence of commonly occurring WRMSDs among drivers of private transport companies in Port Harcourt metropolis. WRMSDs poses significant occupational stress and has been linked to age, long hours of sitting to drive, long duration of driving and awkward postures assumed by drivers while driving. There is need for intervention in this occupational group.

Though more than half of the participants were not knowledgeable about WRMSDs, majority of the long-distance drivers stated that WRMSDs is a normal experience that cannot be prevented indicating a negative attitude towards the prevention. However, encouraging stops over every 2-4 hours of driving is a crucial practice preventing WRMSDs among long-distance drivers.

There is need for occupational health programs directed at motivating long-distance drivers to develop positive attitude towards the prevention of WRMSDs.

Declarations

Ethical consideration: Ethical approval to carry out this study was sought and obtained from the Research Ethics committee of the University of Port Harcourt with ethical approval number UPH/CEREMAD/REC/MM72/063, and permission was sought and obtained from the managers of the selected transport companies before the commencement of the study. Informed consent was obtained from each driver before they were included in the study.

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Conflict of interest: There is no conflict of interest.

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