

NOTES

# Prevalence of Musculoskeletal Injuries Among Factory Workers in Kano Metropolis, Nigeria

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**Background.** Kano is a metropolis and commercial centre in northern Nigeria; it is highly industrialized. Most of the population does factory work. **Purpose.** The survey was undertaken to identify the prevalence of musculoskeletal injuries (MSIs) and other related occupational hazards among factory workers in Kano Metropolis. **Method.** Five hundred questionnaires were distributed to respondents recruited from tannery, steel rolling, textile and agrochemical factories at the 3 industrial estates of the metropolis. Only unskilled and manual labourers were considered. The respondents were selected using the nonprobability sample of convenience. **Results.** Only 420 questionnaires were returned duly completed. Three hundred and fifty-three (84.05%) respondents were male and 67 (15.95%) were female. Their ages ranged between 21 and 58 years ( $M = 38.99 \pm 1.01$ ). **Results.** Low back complaints had the highest prevalence (360, 85.71%), followed by upper limb injuries (171, 40.71%), shoulder complaints (156, 37.14%) and hip injuries (34, 8.10%). About 41% of the respondents reported 2 or more work-related MSIs. **Conclusion.** The study uncovered that a substantial percentage of factory workers had sustained MSIs. Body ache/discomfort in the low back region was the most common injury sustained among the subjects surveyed.

musculoskeletal injuries    occupational hazard    factory workers

## 1. INTRODUCTION

The working environment may be hazardous and stressful [1, 2]. Work schedule and the design of the working environment can lead to errors and accidents [3, 4]. Several occupational injuries exist such as musculoskeletal injuries (MSIs), spinal disorders, gas burns, scalds, and respiratory complications [4].

MSIs are among the major occupational hazards facing the working population today, especially among the working class. Burdorf, Rossignol, Fathallah, et al. reported that adults, ~80% of the working population, would experience back pain sometime during their active life because of their nature of work, which requires heavy physical work, awkward posture, or prolong periods in one posture [5]. MSI is defined as any form of distraction (wear and tear) affecting the continuity of muscular and or bony tissues of the body [6].

There has been a number of studies on occupational injuries among healthcare providers in various setting [2, 4, 7] and among elite female gymnasts [8]. The results indicate high prevalence of work-related injuries. Studies have shown that MSIs, especially low back pain, are currently the most common and widespread disorder affecting both the working [4, 7, 9] and nonworking population [10]. MSIs cause absenteeism at work and loss of productivity [1].

As Kano Metropolis is a commercial centre and a highly industrialized city in northern Nigeria, the prevalence of occupational hazards cannot be ruled out; however, there is no empirical data. Most of the population work in factories. Factory workers, especially those unskilled, undertake activities that involve lifting, pushing, pulling, carrying, standing, bending and stooping. These activities can create occupational hazards such as MSIs. The participants of this study were similarly engaged. It was carried out to survey the prevalence of work-related MSIs among factory workers in the industrial city of Kano, Nigeria.

## 2. METHOD

The respondents were recruited from tannery, steel rolling, textile and agrochemical factories from three industrial estates in Kano Metropolis: Sharada, Bompai and Challawa. Only unskilled manual labourers were studied. Factory workers engaged in other occupations/activities that are risk factors for MSI were not considered. Prior approval of individual factory managers was obtained as was informed consent from each participant.

These authors designed the questionnaire used in this study themselves; it had both closed- and open-ended questions. There were 16 questions divided into two sections: 3 questions focused on biodata, whereas 13 on the presence and regional distribution of MSI complaints and their impact on the participants.

The respondents for this survey were selected using the nonprobability sample of convenience. Descriptive statistics of mean, frequency and percentage were used to summarize the data.

## 3. RESULTS

Out of the 500 questionnaires that had been distributed only 420 (84%) were returned duly completed. Three hundred and fifty-three males (84.05%) and 67 females (15.95%) responded. They were 21–58 years old with the mean age of  $38.99 \pm 1.01$ .

Table 1 shows the regional distribution of MSIs among the respondents, while Table 2 presents regional distribution of injuries in the factory workers. Table 3 presents the degree of severity of MSIs as reported by the subjects. Table 4 shows the impact of MSIs on the subjects' work. Table 5 shows the frequency distribution of protective clothing (boots, gloves and goggles) among the respondents.

**TABLE 1. Distribution of Musculoskeletal Injuries by Body Part Among Unskilled Workers in Kano, Nigeria (n = 420)**

Body Part	n	%
Neck	111	26.43
Shoulder	156	37.14
Hand/wrist	122	29.05
Elbow	81	19.29
Upper back	171	40.71
Low back	360	85.71
Hip	34	8.10
Thigh	63	15.00
Knee	72	17.14
Foot/ankle	48	11.43

**TABLE 5. The Use of Protective Clothing Among Unskilled Workers in Kano, Nigeria**

Protective Clothing	n	%
Boots	107	25.48
Gloves	157	37.38
Helmet	43	10.24
Overalls	72	17.14
Goggles	41	9.76
total	420	100

**TABLE 2. Number of Injured Body Parts Caused by Musculoskeletal Injuries as Reported by Unskilled Workers in Kano, Nigeria (n = 420)**

No. of Body Parts Injured	No. of Injured Factory Workers	%	Cumulative Frequency	Cumulative %
1	73	17.4	73	17.4
2	100	23.8	173	41.2
3	130	40.0	303	72.1
4	56	13.3	359	85.5
5	35	8.3	394	93.8
6	26	6.2	420	100

**TABLE 3. Severity of Musculoskeletal Injuries Among Unskilled Workers in Kano, Nigeria**

Severity	N	%
Severe	81	19.29
Moderate	211	50.24
Mild	128	30.48
total	420	100

**TABLE 4. Impact of Musculoskeletal Injuries Among Unskilled Workers in Kano, Nigeria, on Work Efficiency**

Impact	n	%
Injuries do not affect work at all	216	51.43
Injuries reduce work efficiency	129	30.71
Injuries reduce work time	44	10.48
Injuries keep workers away from work	31	7.38
total	420	100

#### 4. DISCUSSION

Physiotherapists encounter several work-related MSIs every day. Statistics in the National Orthopedic Hospital Dala, Kano, Nigeria show that ~12–15 people visit the physiotherapy unit every week with MSIs that result from work hazards [11]. Almost 41% of the respondents studied sustained two or more MSIs from work-related activities. This prevalence rate is consistent with Olaogun's study aimed to investigate occupational hazards associated with modern physiotherapy practice [4]. This result is consistent with the study to find the causes and prevalence of occupational injuries. In the present study, low back pain was the most common MSI among the factory workers studied and hip injuries were least common. This is step with Sanya and Ogwumike's [12] report; they investigated prevalence of low back pain amongst industrial workers in the private sector. This could be due to maintaining prolonged

awkward position and poor lifting technique as in the present population of the study. The importance of occupational factors in the causation of low back has been acknowledged [13, 14].

This high prevalence of occupational hazards could result from ignorance, lack of awareness of safety measures and poor ergonomic concepts in the working environment. Evidence has shown that carrying out a task without regard for ergonomics imposes stress of various kinds, which has a detrimental effect on the human anatomy and physiology [3].

The pain or discomfort perception experienced by the factory workers' varied from *mild* to *severe*. Thus, this could be due to individual pain perception or a different level of pain threshold.

The effect of sustained injuries on work shows that occupational injuries have an economic implication [4].

The study uncovered that a substantial percentage of factory workers in Kano metropolis had sustained MSIs. Body ache/discomfort in the low back region was the subjects' most common injury.

It is recommended that adequate knowledge on ergonomics and awareness campaign programme should be organized for factory workers to help them carry out their task with less risk for their body parts. Furthermore, health policy makers and health care managers should compel the factory management in Kano Metropolis to arrange insurance policies for the welfare of their employees for effective production.

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