

## The Frequency of Lower Back Pain as an Occupational Hazard among Health Worker

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### Abstract

### Original Research Article

**Background:** Most employees will suffer from low back discomfort at some point in their working lives. Directly, low back pain affects employees and their families, but indirectly, it affects businesses and governments as well. **Objective:** In this study our main goal is to evaluate the frequency of Lower Back Pain as an Occupational Hazard among Health Worker. **Method:** This was a cross-sectional descriptive study of 100 consecutively recruited health professionals who consented to the study during 1st February 2020–30th April 2020. The study was conducted amongst health workers at Tertiary Hospital. **Results:** During the study, (40%) were 30 or below 30 years old, (26.6%) 31-40 years and (20%) 41-50 years. 30% were doctor and nurse, followed by 50% in health sector by 5-10 years, 66% had history of smoking and 50% were overweight. 60% female lower back pain followed by 50% underweight had lower back pain, 60% patients who had smoking history had lower back pain, in addition 50% who were in 5-10 years of health practice had lower back pain. 41.9% who worked in OPD had back pain, followed by 40% who allied health had lower back pain, patients who worked >8 hours had lower back pain, 50% who were bending, 60% who were lifting, 70% who standing alone for long time, 65% who were pushing patients had lower back pain most. **Conclusion:** Health professionals had low back pain at a significant incidence, despite the fact that the majority of the causes were avoidable and were both personal and occupational. When physically handling patients, healthcare professionals should prioritize both their own back health and the requirements of their patients and customers. Workplace risks like these may be mitigated by the application of ergonomic design principles, work organization, back health education programs, and adaptive tools in our resource-constrained environments.

**Keywords:** Lower Back Pain, Occupational Hazard, Health Worker.

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## INTRODUCTION

Seventy-five percent to eighty-five percent of the world's population has lower back pain (LBP), making it a major public health issue [1]. Injuries sustained on the job are a frequent source of incapacity [2]. The yearly prevalence of lower back pain is 15–45%, with an average point prevalence of 30%, as reported by Hartvigsen *et al.*, In the United States (US), back pain is the most prevalent cause of activity restriction in those under the age of 45 years and is regarded the second most frequent reason for visits to a physician [3]. It's also the third most common reason for surgeries and the sixth most common reason for hospitalization. Thus, 2% of the American workforce

receives yearly compensation for back ailments [3]. In addition, LBP is considered to be the second greatest cause of work absenteeism and resulting in lost productivity more than any other medical condition [4, 5]. Hartvigsen *et al.*, [2] report that LBP results in huge direct and indirect expenses due to diminished quality of life, decreased productivity, and increased absenteeism among workers. Therefore, this disorder is the leading cause of musculoskeletal impairment all over the globe [6].

Apart from developed country, in developing country like Bangladesh person who are working health sector face lower back pain also.

In this study our main goal is to evaluate the frequency of Lower Back Pain as an Occupational Hazard among Health Worker.

## OBJECTIVE

- To assess the frequency of Lower Back Pain as an Occupational Hazard among Health Worker.

## METHODOLOGY

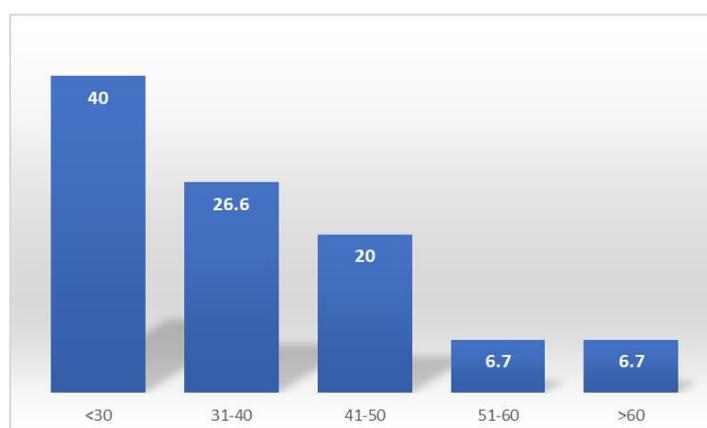
This was a cross-sectional descriptive study of 100 consecutively recruited health professionals who consented to the study during 1st February 2020–30th April 2020. The study was conducted amongst health workers at Tertiary Hospital.

Each consenting participant was asked to complete a pre-designed survey questionnaire to collect information on the independent socio-demographic

variables, self-reported LBP as the dependent variable and its presumed risk factors as the other independent variables. The independent variables were stratified into two categories: personal or occupational (work-related). Personal variables included age, sex, body mass index, cigarette smoking and alcohol consumption whereas occupational factors included ergonomic structuring, job organization, department, cadre of the health personnel, ergonomics of the work environment, working hours and availability of assistive equipment to lift patients. All these factors had been previously found in the literature to be associated with LBP amongst health workers.

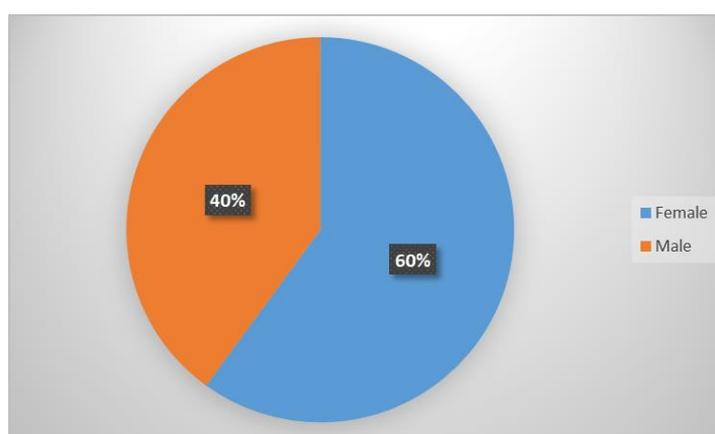
## RESULTS

In figure-1 shows age distribution of the patients, out of 100 patients (40%) were 30 or below 30 years old, (26.6%) 31-40 years and (20%) 41-50 years. The following figure is given below in details.



**Figure-1: Age distribution of the patients.**

In figure-2 shows gender distribution of the patients. Majority (60%) of the patients was female. The following figure is given below in details:



**Figure-2: Gender distribution of the patients.**

In table-1 shows base line characteristics where 30% were doctor and nurse, followed by 50% in health sector by 5-10 years, 66% had history of

smoking and 50% were overweight. The following table is given below in detail:

**Table-1: Base line characteristics**

Cadre	%
Nurse	30%
Alied health	40%
Doctor	30%
Years of practice	%
<5 years	30%
5-10 Years	50%
>10 years	20%
BMI	%
Underweight	30%
overweight	50%
Obese	20%
Smoking	66%

In table-2 shows Individual Factors Associated With Lower Back Pain where 60% female lower back pain followed by 50% underweight had lower back pain, 60% patients who had smoking history had lower

back pain, in addition 50% who were in 5-10 years of health practice had lower back pain. The following table is given below in detail:

**Table-2: Individual Factors Associated With Lower Back Pain**

Gender	Lower Back pain , %	P value
Male	40%	0.002
Female	60%	
BMI	Lower back pain , %	P value
Underweight	50%	0.877
overweight	30%	
Obese	20%	
Variable	Lower back pain , %	P value
Smoking	60%	0.001
Years of practice	Lower back pain, %	P value
<5 years	20%	0.02
5-10 Years	50%	
>10 years	30%	

In table-3 shows work related factor with lower back pain where 41.9% who worked in OPD had back pain, followed by 40% who alied health had lower back pain, patients who worked >8 hours had lower

back pain, 50% who were bending, 60% who were lifting, 70% who standing alone for long time, 65% who were pushing patients had lower back pain most. The following table is given below in detail:

**Table-3: Work related factor with lower back pain**

Variable	Lower back pain, %	P value
OPD	41.9%	<0.001
Medical ward	8.1%	
Surgical	8.1%	
Theatre	2.0%	
Maternity	31.1%	
Orthopedic	8.8%	
Cadre	%	P value
Nurse	30%	0.211
Alied health	40%	
Doctor	30%	
Working hours	%	P value
<8 hours	40%	0.02
>8 hours	60%	
Bending	%	P value
Yes	50%	0.01
Lifting	%	P value

Variable	Lower back pain, %	P value
Yes	60%	0.02
Standing on a floor for long time	%	P value 0.02
Yes	70%	P value 0.02
Transferring patients	%	P value 0.02
Yes	65%	P value 0.02
Pushing	%	P value 0.02
Yes	70%	P value 0.02

## DISCUSSION

Although close to the African average of 41.9% (35), the higher frequency rate of LBP in the present study might depict a rapid shift in the population aging [1], without a concurrent rise in dedicated resources to address this burden. A cross-sectional survey which analyzed work-related musculoskeletal disorders among nurses in Ibadan in South-West Nigeria found a comparable prevalence of lower back pain at 44.1% [2]. However, the frequency of LBP in the present study is lower than in a study conducted among healthcare workers in tertiary health institutions in Sokoto, Nigeria [4]. The difference in occurrence rates could be due to the fact that the researchers in Nigeria included the entire state (Sokoto) with a relatively larger sample size. High prevalence of lower back pain is reported in other studies across the globe [2, 5]. This high occurrence of lower back pain reduces the efficiency of health workers.

In this study, 60% of the respondents with LBP were females and this was significant. This is similar to findings of other studies [7-11]. In addition, these findings are comparable to the results found in the Ugandan study of health workers at Mulago hospital that reported 68% occurrence rates for female and 32% for males, respectively.

The high frequency rates in females could be attributed to females predominantly taking on the nursing job roles, inclusive of lifting and transfer of patients in addition to extra occupational workload of women in our cultural settings such as household chores and caring for children. Furthermore, an Australian study suggests that the difference in LBP occurrence may be related to the anatomical, physiological and structural differences between males and females [12]. The female hormones such pregnancy induced relaxin and low estrogen levels that are associated with the aging process could aggravate the strain on the bony spine [13].

In our study, Ward and department, bending and twisting, lifting patients, standing for a long time

and pushing patients during transfer were all work related factors found to be significantly associated to LBP amongst health workers. Which was supported by other study where manual handling during transfer of patients was a major predictor of LBP? In our settings, most patient handling activities are performed in less than ideal space and in sub-optimal time frames. Besides, it's not uncommon to use faulty trolleys such as one with non-functional tires to transfer patient.

According to Tinubu *et al.*, [5], repeated biomechanical strain on the musculoskeletal system may eventually lead to the development of LBP. Thus, the increased proportion of participants with LBP in this study could be the result of poor working posture, the incorrect use of lifting techniques and unavailability of manual handling equipment in the health facilities such as job aids. Heavy physical work, sustained position and lifting have been earlier linked to LBP in a Nigerian study [3]. In addition, according to Vermani *et al.*, [8] the risk of developing LBP amongst Japanese nurses involved in manual handling of patients was high compared with nurses who were not involved.

## CONCLUSION

Health professionals had low back pain at a significant incidence, despite the fact that the majority of the causes were avoidable and were both personal and occupational. When physically handling patients, healthcare professionals should prioritize both their own back health and the requirements of their patients and customers. Workplace risks like these may be mitigated by the application of ergonomic design principles, work organization, back health education programs, and adaptive tools in our resource-constrained environments.

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