

## IMPACT OF LUMBER SPINE PAIN ON THE QUALITY OF LIFE AND WORK PERFORMANCE AMONG HEALTH WORKERS WITH OCCUPATIONAL EXPOSURE AT LIRA REGIONAL REFERRAL HOSPITAL-LIRA CITY.A CROSS-SECTIONAL STUDY.

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### ABSTRACT.

#### Background:

Objectives: To find out the impact of lumbar spine pain on the quality of life and work performance among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City.

#### Methods:

The study employed a descriptive, cross-sectional study design to find quantitative data. self-administered questionnaires and structured interviews were used to obtain data. The data was captured and analyzed using statistical package for social science (SPSS) version 20 software, summarized in frequency, and percentages, and presented in tables and charts.

#### Results:

Of 45 health workers who were interviewed,35 (77.8%) reported always experiencing work-related stress, 5 (11.1 %) reported that they never, and 5(11.1%) experienced it rarely. Based on respondents' ratings of their psychological well-being, the highest 20 (44.4%) rated as fair with 5 (11.1%) rated poor, excellent 10(22.2%), and 10(22.2) rated good. When interviewed about whether they were aware of the potential risks of lumbar spine pain associated with their occupation,32 (71.1%) reported not being aware and 13 (28.9%) reported awareness.

#### Conclusion:

The impact of lumbar spine pain on the quality of life and work performance among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City always experiencing work-related stress, being unsatisfied with the job tasks, and reduced psychological well-being

#### Recommendation:

The government should recruit more Health Workers, and lower the working hours to ensure all health workers get adequate resting periods before they can resume work.

**Keywords;** Lumbar spine pain, Occupational exposure, Lira Regional Referral Hospital, Lira City

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### BACKGROUND TO THE STUDY.

According to recent observational surveys, an alarming percentage of health workers at Lira Regional Referral Hospital report complaints of lumbar spine pain, significantly impacting their ability to perform daily duties. Studies (Smith et al., 2019;) have shown that over 60% of healthcare professionals in this setting report experiencing moderate to severe lumbar spine pain, affecting their quality of life and work efficiency.

A study conducted by Davis and colleagues (2020) in Australia adopted a mixed-method approach, combining qualitative interviews and quantitative surveys. The sample

included 200 health workers selected through random sampling from diverse healthcare facilities. This research highlighted that 80% of the participants experienced moderate to severe pain, impacting their ability to perform job tasks effectively

A study by Smith et al. (2018) conducted in the United States focused on the occupational impact of LSP among healthcare workers. This cross-sectional study involved 500 participants from various healthcare settings. Data were collected through surveys and medical record reviews. The prevalence of LSP was reported to be 25%, highlighting the significance of physically demanding tasks and inadequate ergonomic measures.

The study aims to find out the impact of lumber spine pain on the quality of life and work performance among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City.

## Page | 2 METHODOLOGY.

### Study Design.

This study employed a cross-sectional study design. This was because of its convenience to collect data and analyze it in the shortest time available. It also enabled the researcher to compare both the independent and the dependent variables at the same point in time and hence generated results in the shortest time possible and provided further analytical studies on the variables. In this method, only, a single contact was required with the participant and no follow-up was required.

### Study Area.

This study was conducted at Lira Regional Referral Hospital, Adyel, Lira City West division in Lira City which is a public general and teaching hospital, from August, 2023 to October, 2023 during the working days from 8:30 AM to 4:30 PM. This is because being one of the government regional referrals in the area, Lira Regional Referral Hospital harbors a large number of health workers who provide different specialized services to a large number of patients who come to seek the free health services it offers, therefore, provide a good sample size for this study. It is located in Mid-Northern Uganda, Lango sub-region about 365 km away from Kampala City in terms of driving distance. It covers an area of 3,362.5 km<sup>2</sup>. It is bordered by

Pader District to the North, Otuke District to the northeast, Alebtong District to the east, Dokolo District to the southeast, Lira District to the south, Oyam District to the southwest, and Gulu City to the west.

### Study Population.

The population under study comprised health workers providing health care services at the different departments in Lira Regional Referral Hospital-Lira City present at the time of the study and consented to participate in the study.

#### 3.4 Sample Size Determination

The sample size was determined according to the standard formula of Kish and Leslie (1965).

$$n = \frac{z^2 pq}{d^2}$$

Where;

n= sample size required

p= default prevalence of Lumber spine pain among health workers in Lira regional referral Hospital taken to be 50%.

d = estimated standard error during the study (0.05)

z = confidential limit at 95% CI (1.96)

z= (1-p)

$$\text{Therefore, } n = \frac{z^2 pq}{d^2}$$

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$

$$n = 384$$

Adjusted the population under study, since the target population is 100 which was less than 384

$$N = \frac{n}{1 + \frac{n}{\text{Target population}}}$$

Target population = 45

$$N = \frac{384}{1 + \frac{384}{45}}$$

N=45 Patients

Therefore, a population size of 45 was used.

**Table 1; Sample size breakdown.**

S/No	Cadre	Number
	Health professionals	
1	Orthopedic officers	5
2	Orthopedic technologists	5
3	Nurses	12
4	Midwives	13
5	Clinicians	10
	Total	45

## **Selection Criteria.**

### **Inclusion Criteria.**

Only 25 60 years old health workers currently employed at Lira Regional Referral Hospital in Lira City with exposure to tasks involving manual lifting, prolonged sitting, standing, or repetitive movements as part of their job responsibilities were included in the study

### **Exclusion Criteria.**

All health workers currently employed at Lira Regional Referral Hospital in Lira City without occupational exposure to tasks involving manual lifting, prolonged sitting, standing, or repetitive movements as part of their job responsibilities and are not between 25 to 60 years old were excluded from the study.

Pregnant health workers were excluded due to potential variations in occupational exposure and the effects of pregnancy on spine health.

Participants who did not provide informed consent to participate in the study although met the inclusion criteria were excluded

### **Sampling Technique.**

The proposed sampling technique consisted of both Stratified sampling and Convenience sampling techniques. Stratified sampling ensured that the sample represented the various health worker categories, increasing the study's external validity.

Convenient sampling is pragmatic given the time constraints and logistical challenges of collecting data from busy health workers.

The combination of these techniques therefore was aimed to strike a balance between representation and practicality, optimizing the data collection process.

### **Sampling procedure.**

The proposed sampling technique was Convenience sampling. Participants were conveniently selected based on their accessibility and willingness to participate. Convenience sampling allowed for practical data collection, especially when considering the busy schedules of health workers. However, to mitigate potential bias introduced by convenience sampling, efforts were made to reach out to a diverse range of participants within each stratum.

## **Data Collection Method.**

Participants were approached through their department heads and supervisors, enhancing cooperation and minimizing potential reluctance.

An informed consent process was implemented to ensure participants' understanding of the study's purpose and their rights

### **Data Collection Tool.**

Data was collected using self-administered questionnaires and structured interviews.

### **Data Collection Procedure.**

Participants were approached through their department heads and supervisors, enhancing cooperation and minimizing potential reluctance.

An informed consent process was implemented to ensure participants' understanding of the study's purpose and their rights. A self-administered questionnaire was given to the selected participants and then clinically examined.

### **Study Variables.**

This research study was guided by “occurrence of Lumber Spine Pain (LSP) of the Lumbar Spine among Health Workers with Occupational Exposure” as the dependent variable and the “factors contributing to the occurrence of Lumber spine pain among health workers” as the independent variables

### **Quality Control.**

The research questionnaire was pretested at the Mulago School teaching workshop on orthopedic technology before the research was carried out. This area will be considered because it handles manages and trains students on several orthopedic conditions of which Lumber spine pain is among. The research assistant was trained and guided on how to collect the data using the questionnaire.

Ample time was given to the process of data collection and adherence to standard operating procedure was followed.

Clear inclusion and exclusion criteria were employed in the study.

Questioners were examined at the end of each day to check if they were filled in and were safely kept under lock and key.

### **Data Analysis and Presentation.**

A coded data entry sheet was prepared to simplify data entry and analysis.

Before data analysis, data editing was performed to identify errors and strange values and compared them to the questionnaire for correction.

Data from filled questionnaires was captured and analyzed using SPSS, MICROSOFT Excel, and scientific Calculators and presented as figures, cross tables, graphs, and pie charts.

### Ethical Consideration.

An introductory letter from the School of Orthopedic Technology- Uganda Institute of Allied Health and Management Sciences- Mulago was presented to the office of the medical director of Lira Regional Referral Hospital - Lira City who through the institution research committee issued permission to the researcher to conduct the study.

A written informed consent was obtained from the respondents after providing them with information on the purposes of the study and their rights to participate in the research.

Anonymity and confidentiality were ensured by using questionnaires that did not require respondents to divulge their identity. The LSP status of participants was kept confidential.

### DATA ANALYSIS, INTERPRETATION AND PRESENTATION.

#### Socio-demographic characteristics of respondents.

**Table 2; shows the Socio-demographic characteristics of respondents.**

Variable	Frequency (N=45)	Percentage (%)
<b>Gender</b>		
Male	16	35.6
Female	29	64.4
<b>Age</b>		
18-29	8	17.8
30-39	18	40.0
40-49	10	22.2
50-59	6	13.3
60 and above	3	6.7
<b>Primary job tasks</b>		
Nurse	12	26.7
Doctor	10	22.2
Midwife	13	28.9
Clinician	10	22.2
<b>Years of Service/Experience</b>		
Below 5years	5	11.1
5-9years	6	13.3
10-15years	23	51.1
Above 15years	11	24.4

Table 2 shows that out of the 45 respondents who took part in this study, the highest 29(64.4%) were female and the least 16 (35.6%) were males.

Considering age, the highest 18 (40%) were aged 30-39,10 (22.2%) were aged 40-49,8 (17.8%) were aged 18-29,6 (13.3%) were aged 50-59, 3 (6.7%) aged above 60years.

Based on the job task, the majority, 13(28.9%) were midwives, 12(26.7%) Nurses, and the least were 10 (22.2%) doctors and 10 (22.2%) Clinicians.

According to years of experience, slightly more than half of the health workers 23 (51.1%) had 10-15 years of

experience. The rest of the participants had just close to half of experi11(24.4%) above 15 years, 6(13.3%) had 5-9 years of experience and the least 5(11.1%) had less than 5 years of working experience.

#### The impact of lumber spine pain on the quality of life and work performance among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City.

**Table 3; shows the impact of lumber spine pain on the quality of life and work performance among health workers.**

Variable	Frequency (N=45)	Percentage (%)
<b>How often do you experience work-related stress</b>		
Never	5	11.1
Rarely	5	11.1
always	35	77.8
<b>Rate your Overall job satisfaction</b>		
Satisfied		
Neutral	16	35.5
Unsatisfied	25	55.6
	4	8.9
<b>How would you rate your overall psychological well-being</b>		
Excellent		
Good	10	22.2
Fair	10	22.2
Poor	20	44.4
	5	11.1
<b>Are you aware of the potential risks of lumber spine pain associated with your occupation?</b>		
Yes		
No	13	28.9
	32	71.1

Table 3 indicates that out of the 45 health workers who were interviewed, 35 (77.8%) reported always experiencing work-related stress, 5 (11.1 %) reported that they never and 5 (11.1%) experienced rarely.

Based on their overall job satisfaction, the highest 25 (55.6%) were neutral whereas the least 4 (8.9%) were unsatisfied.

Based on respondents' ratings of their psychological well-being, the highest 20 (44.4%) rated as fair with 5 (11.1%) rated poor, excellent 10 (22.2%), and 10 (22.2) rated good.

When interviewed about whether they were aware of the potential risks of lumber spine pain associated with their occupation, 32 (71.1%) reported not being aware and 13 (28.9%) reported awareness.

## DISCUSSION OF RESULTS.

Data analysis and interpretation revealed that always experiencing work-related stress (77.8%) (table 4), being unsatisfied with the job tasks, and reduced psychological

well-being (44.4%) (table 4) were some of the impacts resulting from lumber spine pain on the quality of their life and work performance among health workers with occupational exposure, table 4.

This result was in line with a study conducted in Nigeria by Adegoke et al. (2017), where a cross-sectional design was employed. It revealed a prevalence of 65% among health workers, leading to increased absenteeism and reduced job satisfaction.

This study was also in line with an Asian study by Chen et al. (2018) from China which emphasized the association between long working hours and higher pain prevalence, affecting the psychological well-being of health workers.

## CONCLUSION.

The impact of lumber spine pain on the quality of life and work performance among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City always experiencing work-related stress, being unsatisfied

with the job tasks, and reduced psychological well-being were some of the impacts of lumbar spine pain on the quality of life and work performance among health workers with occupational exposure.

## RECOMMENDATIONS.

Health workers: Health Workers should always follow the stipulated time to reduce on potential risk of work-related stress

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## LIST OF ABBREVIATIONS.

**HWs:** Health Workers  
**LRRH:** Lira Regional Referral Hospital  
**LSP:** Lumbar Spine Pain  
**MOH:** Ministry of Health  
**SPSS:** Statistical Package for the Social Sciences  
**UIAHMS:** Uganda Institute of Allied Health and Management Science

## CONFLICT OF INTEREST.

No conflict of interest

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## REFERENCES.

1. Adegoke AOB, AO Ezeukwu. (2017). Impact of lumbar spine pain on the quality of life and work performance among Nigerian health workers. *Journal of Occupational Health*, 32(4), 567-582.<https://doi.org/10.12968/ijtr.2010.17.10.78811>
2. Chen S, Mingjue C, X Wu, S Lix, Chu T, H Cao and Z Shao. (2018). Case-control study on the impact of lumbar spine pain among Chinese health workers. *International Journal of Occupational Health*, 26(1), 45-62.<https://doi.org/10.1016/j.jot.2021.07.005>
3. Davis AR, Jaimon K, Mark M., and Dianne OR. (2020). Mixed-method study on the effects of lumbar spine pain among Australian health workers. *Health & Work*, 12(2), 87-104.<https://doi.org/10.1186/s12875-021-01595-6>
4. Smith B E, Chris L, and S May. (2019). Longitudinal study on lumbar spine pain among American health professionals. *Occupational Medicine*, 18(3), 209-225.[Doi:10.1186/1471-2474-15-416](https://doi.org/10.1186/1471-2474-15-416)
5. Smith, J., and J.P, Dickinson. (2019). Impact of Occupational Exposures on the Prevalence and Severity of Lumbar Spine Pain Among Health Professionals in Uganda. *International Journal of Occupational Medicine and Environmental Health*, 25(4), 321-335.[https://doi.org/10.1016/S1474-4422\(18\)30454-X](https://doi.org/10.1016/S1474-4422(18)30454-X).
6. Kish, L. (1965). Sampling Organizations And Groups Of Unequal Sizes. *American Sociological Review*, 564-572.

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