COMMON RISK FACTORS ASSOCIATED WITH LUMBER SPINE PAIN AMONG HEALTH WORKERS WITH OCCUPATIONAL EXPOSURE AT LIRA REGIONAL REFERRAL HOSPITAL-LIRA CITY. A CROSS-SECTIONAL STUDY.

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Page | 1 — ABSTRACT.

Background:

Objectives: To establish the common risk factors associated with lumber spine pain 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:

Out of the 45 respondents interviewed, the highest 29(64.4%) were female and the least 16 (35.6%) were males.38 (84.4%) responded that their job responsibility involved lifting and assisting patients and a greater number of them 35 (77.8%) spent more than 8 hours in such activities. Additionally,43 (95.6%) which was a greater percentage reported performing their job tasks always doing repetitive movements when performing their job tasks.

Conclusion:

The common risk factors associated with lumber spine pain were contributed by activities involving lifting and assisting patients (77.8%), job tasks involving repetitive movement, absence of proper equipment and tools to assist in routine job tasks, and improper workplace design and layout

Recommendation:

Hospital Administrators: The administrators should employ more porters to help in lifting and transferring patients to reduce the potential risks of Lumber Spine Pain on the Health Workers.

Keywords: Lumber spine pain, Occupational exposure, Lira Regional Referral Hospital, Lira City Submitted: 2024-04-12 Accepted: 2024-04-12

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BACKGROUND TO THE STUDY.

Lumbar spine pain (LSP) is a prevalent concern among health workers due to their occupational exposure to physically demanding tasks. This literature review aims to explore the prevalence of LSP among health workers by examining studies conducted in Uganda, Ethiopia, Nigeria, Tanzania, the United States, India, South Africa, Canada, and other regions, focusing on study design, sample size, data collection methods, study areas, and data collection tools.

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.

In Uganda, a cross-sectional study conducted was carried out to identify the risk factors contributing to LSP among health workers. The study included 350 participants from various healthcare facilities in Uganda. Data were collected using structured interviews and self-administered questionnaires focusing on occupational tasks, ergonomic facilities, and the presence of back pain. Inadequate ergonomic facilities and improper lifting techniques emerged as significant risk factors contributing to LSP.

Atnafu et al. (2019) conducted a cross-sectional study in Ethiopia among nurses to explore the risk factors associated with LSP. The study included 400 nurses from different healthcare settings. Tasks involving lifting and prolonged standing were identified as key risk factors contributing to the development of LSP among health workers.

The study aims to establish the common risk factors associated with lumber spine pain among health workers with occupational exposure at Lira Regional Referral Hospital-Lira City.

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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 km2. 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).

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n = \frac{z^2 pq}{d^2}
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Where:
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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)

Therefore, $n = \frac{z^2 p q}{d^2}$

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

n=384

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

 $N = \frac{n}{1 + \frac{n}{1 + \frac{n}{Target population}}}$ 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 to 60 years 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.

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e 3 Participants who did not provide informed consent to participate in the study although meeting 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.

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 (%) Page | 4 Gender Male 16 35.6 Female 29 64.4 Age 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 Primary job tasks Nurse 12 26.7 Doctor 22.2 10 Midwife 13 28.9 Clinician 10 22.2 Years of Service/Experience Below 5years 5 11.1 5-9years 6 13.3 10-15 years 23 51.1 Above 15 years 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 common risk factors associated with lumber spine pain among health workers with occupational exposure at Lira Regional **Referral Hospital-Lira City.**

Variable	Frequency N=45	Percentage (%)
Is lifting or assisting patients		
your job responsibility?		
Yes		
No	38	84.4
	7	15.6
If yes, the frequency of the activity		
Rarely	4	8.9
Occasionally	6	13.3
Frequently	25	55.6
How long are you engaged in		
lifting?		
Less than 1 hour	0	0.0
1-3 hours	5	11.1
5 hours	5	11.1
More than 8 hours	35	77.8
Do you do repetitive		
movements?		
Never	0	0.0
Rarely	2	4.4
Always	43	95.6
Are there proper equipment		
and tools to assist in job		
tasks		
Yes	10	22.2
No	35	77.8
Rate the design and layout of		
your workspace		
Excellent		
Good	2	4.4
Fair	5	11.1
Poor	29	64.4
	9	20.0

Table 1 shows the common risk factors associated with lumber spine pain among health workers.

Table 3 shows that 45 health workers were interviewed with a questionnaire containing closed-ended questions to assess common risk factors associated with lumber spine pain.

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Out of the 45 respondents interviewed, 38 (84.4%) responded that their job responsibility involved lifting and assisting patients and a greater number of them 35 (77.8%) spent more than 8 hours in such activities. Additionally,43 (95.6%) which was a greater percentage reported performing their job tasks always doing repetitive movements when performing their job tasks.

Furthermore 35(77.8%) of the health workers who were interviewed reported the absence of proper equipment and tools to assist in their routine job tasks. Finally, based on respondents' ratings of their workplace design and layout,29 (64.4%) rated fair, and 2 (4.4%) rating as excellent.

DISCUSSION OF RESULTS.

Data analysis and interpretation revealed that the occurrence of LSP among health workers at LRRH was significantly contributed by activities involving lifting and assisting patients (77.8%) (table 3), job tasks involving repetitive movement (95.6%) (table 3), absence of proper equipment and tools (77.8%) (table 3) to assist in routine job tasks and improper workplace design and layout (64.4%), table 3. These findings are so probably because most of the health workers in LRRH worked for more than 8 hours (77.8%) (table 3) per shift exposing them to long hours of strenuous work where they do repetitive movements, in addition to the lack of modern ergonomic tools and workspace design and layout correlating to each staff.

These results were in agreement with studies by Atnafu et al. (2019) in their cross-sectional study in Ethiopia among nurses to explore the risk factors for LSP which revealed that tasks involving lifting and prolonged standing were identified as key risk factors contributing to the

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development of LSP among health workers. Similarly, the findings of this study also agreed with a study by Mhina et al. (2019) in Tanzania which aimed to identify the risk factors contributing to LSP among healthcare workers and revealed that patient handling, long working hours, and inadequate ergonomic measures were significant risk factors associated with LSP among health workers.

CONCLUSION.

The common risk factors associated with lumber spine pain were contributed by activities involving lifting and assisting patients (77.8%), job tasks involving repetitive movement, absence of proper equipment and tools to assist in routine job tasks, and improper workplace design and layout

RECOMMENDATIONS.

Hospital Administrators: The administrators should employ more porters to help in lifting and transferring patients to reduce the potential risks of LSP on the HWs.

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ABBREVIATIONS AND ACRONYMS.

- LRRH:Lira Regional Referral HospitalLSP:Lumbar Spine PainMOH:Ministry of Health
- SPSS: Statistical Package for the Social Sciences

UIAHMS: Uganda Institute of Allied Health and Management Science

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CONFLICT OF INTEREST.

No conflict of interest

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