Asian Journal of Medical Principles and Clinical Practice

Volume 7, Issue 2, Page 490-501, 2024; Article no.AJMPCP.126589

Evaluation of Occurrences of Low Back Pain among Health Care Workers in University of Port Harcourt Teaching Hospital, Nigeria

Grend, A. E. [a*], Ugbebor, J. N. [a] and Agi, C. E. [a]

[a] *Centre of Occupational Health, Safety and Environment, University of Port Harcourt, Nigeria.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: https://doi.org/10.9734/ajmpcp/2024/v7i2258

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/126589

Original Research Article

Received: 30/09/2024
Accepted: 02/12/2024
Published: 05/12/2024

ABSTRACT

Low Back Pain is a common musculoskeletal health condition that affects 50 to 80 per cent of people at some point during their lifetime. It is said to be one of the leading causes of activity restriction and job loss worldwide, imposing enormous financial hardship on individuals, families, communities, corporations, and governments. It is a widespread and challenging problem among healthcare workers that might have a significant impact on the lives of other colleagues they work with. The present study investigated the occurrences of low back pain among healthcare workers at the University of Port Harcourt (UPTH), Nigeria. The study population comprised all 2424 healthcare workers in UPTH from which 334 were used following the application of the Krejcie and

**Corresponding author: E-mail: anwurigrend@gmail.com;*

Cite as: *A. E., Grend, Ugbebor, J. N., and Agi, C. E. 2024. "Evaluation of Occurrences of Low Back Pain Among Health Care Workers in University of Port Harcourt Teaching Hospital, Nigeria". Asian Journal of Medical Principles and Clinical Practice 7 (2):490-501. https://doi.org/10.9734/ajmpcp/2024/v7i2258.*

Morgan sampling technique. The methodology used was a descriptive research design. A research questionnaire was used to obtain data from the respondents, while Pearson Product Moment Correlation aided by Statistical Package for Social Sciences (SPSS) was used for data analysis. The study consequently revealed a high prevalence of low back pain (81%) among healthcare workers in the University of Port Harcourt Teaching Hospital and that the physical work environment might contribute to the occurrences of low back pain. There was a negative relationship between general health conditions and the occurrence of low back pain in healthcare workers in UPTH (R^2 = -0.61). There was a relationship between the years of engagement at work of the healthcare workers and the occurrence of low back pain with a chi-square value of 313.655; however, there was no relationship between the sociodemographic characteristics and the prevalence of low back pain among healthcare workers in UPTH. The study concludes that prolonged sitting or standing without ergonomic breaks can increase the risk of occurrence of low back pain. The study recommends the provision of ergonomic breaks for healthcare workers in UPTH in addition to regular health examinations to improve the general health conditions of healthcare workers. Education and training courses on back care ergonomics and patient transfer should be regularly implemented and reviewed for healthcare workers.

Keywords: Ergonomic; healthcare workers; low back pain; teaching hospital.

1. INTRODUCTION

Pain is an unpleasant emotional state that starts in one body part but can be perceived by the mind. It is a self-defence process in which a person defends a wounded component from further harm [1]. Pain, muscle tension, or stiffness in the lower section of the spine (lumbosacral area) is known as Low Back Pain (LBP) [2].

LBP is one of the most common types of work-related musculoskeletal disorders [3,4]. It is said to be one of the leading causes of activity restriction and job loss worldwide, imposing enormous financial hardship on individuals, families, communities, corporations, and governments. Despite significant efforts in primary prevention in various countries, a high prevalence of back pain, especially low back pain, among healthcare workers has persisted for years [5]. LBP is not only the most common cause of functional disability worldwide, but it is also known to affect around 90 per cent of the world's population at some point in their lifetime [6-8]. Low back pain is also thought to be one of the most frequently occurring musculoskeletal disorders affecting the working population in both the developed and developing countries of the world [9].

LBP is recognized as a cause of morbidity in developed countries across various occupational settings, particularly among healthcare workers (HCWs) such as physicians, nurses, and technicians, who are especially susceptible to LBP [10]. According to the US Department of Labor, approximately one million injuries and illnesses caused by private industry, and state and local government employees resulted in days off work. Low back pain (LBP) and low back problems generally accounted for 16.6% of all injuries and illnesses, resulting in 191,479 days absent from work [11]. The cost of pain surpassed the cost of cancer and diabetes by 30%, according to a study funded by the National Institute of Health. The authors went on to say that medications for pain management cost $16.4 billion per year, and lumbar operations cost $2.9 billion. Indirect expenses for pain were estimated to be $18.9 billion in disability compensation and $6.9 billion in lost productivity [12].

In recent decades, occupational health issues involving the musculoskeletal system have received a lot of attention. LBP is one of them and has been described as a worldwide problem with a particularly high prevalence rate [13]. The word "pain" describes an uncomfortable and emotional sensation brought about by a real or probable tissue injury [14]. It is a common symptom of a wide range of illnesses and is known to have a significant influence on a person's quality of life and general functioning [15].

LBP mostly affects the working population in both developed and developing countries, resulting in individual impairment (World Health Organization) [16,17]. Chronic back pain can be caused by an injury, an illness, or strains on multiple bodily components, and it can range in severity from mild to severe. Nursing profession has a reputation for being a high-risk profession for musculoskeletal issues, particularly LBP.

Back pain is thought to be the reason why about 3.5 per cent of nurses resign from their jobs [6].

LBP is the most common cause of temporary disability among the general population under 45 years of age, and it is the third most common cause of physical activity restriction in people who have had heart problems or rheumatic diseases in the age group under 45 years, according to studies conducted in the United States [18].

According to the World Health Organization [12], "health care personnel" include "all paid workers in organizations or institutions whose primary goal is to improve health, as well as those whose personal activities are mostly intended to improve but who work for other sorts of organizations". Health workers as professionals have major cases of occupational LBP and injuries in the lumbar area since their career is unique with intense emotional and physical strain, and they are subjected to a combination of mechanical and psychological stress at work [19]. This may be due to a lack of space or movement limits imposed by unique working conditions, working positions in dialysis units, operating rooms, and intensive care units which are usually uncomfortable. During their shifts, nurses are obliged to walk and stand up more than warehouse personnel, typically for more than 6 hours each day [20]. Despite the fact that several risk factors, such as working posture, melancholy moods, obesity, body height, and age, have been identified among healthcare workers, the exact causes of back pain remain unknown, and reaching a precise diagnosis is also known to be difficult [21].

Back pain is proposed to be caused by a variety of personal physical variables such as decreased cardiovascular fitness, low back muscular endurance, changed motor control patterns, poor spinal posture, and limited sagittal range of motion in workers in the healthcare industry [22-24]. Physical inactivity and excessive levels of vigorous physical activity especially when repetitive movements such as vibrations are involved have also been connected to back discomfort.

LBP has a direct impact on the amount and quality of health care offered to clients, as well as the productivity of healthcare workers at work. This condition (LBP) is a source of significant financial burden because it is a major cause of medical expenses, absenteeism from work which is the source of income (with consequent risk of being laid off work and job loss), and disability.

If this problem is not addressed effectively, it can result in psychological despair and suffering, as well as financial and societal costs. Other consequences of this condition include reduced quality of life, work disability, incessant need for sick leave, and early retirement which further reduces the number of manpower available in the already depleted workforce in the healthcare industry. In light of this, the occurrence of LBP among healthcare professionals at the University of Port Harcourt Teaching Hospital in Nigeria was investigated.

2. MATERIALS AND METHODS

2.1 Area of Study

This study was conducted in the state of Rivers. Rivers State, usually known as just Rivers, is one of Nigeria's 36 states. According to figures from the 2006 National Population Census, the state has a population of 5,185,400 people, making it the sixth most populated in the country. Port Harcourt, Rivers State's capital, is the country's largest metropolis and the centre of the country's oil sector. The Atlantic Ocean borders Rivers State on the south, Imo, Abita, and Anambra states on the north, Akwa Ibom State on the east, and Bayelsa and Delta states on the west. Many indigenous ethnic groups live there, including the Ikwerre, Ibani, Opobo, Eleme, Okrika, and Kalabari, as well as Etche, Ogba, Ogoni, Engenni, Obolo, and others. Fig. 1 shows the map of Rivers State.

2.2 Population of the Study

The participants in this study were all of the healthcare workers at the University of Teaching Hospital in Rivers State, a total of 2424 people. Doctors, nurses, therapists, laboratory scientists, cleaning staff and technicians were among those who consented to participate in the research data collection process for four (4) weeks. From October 8 to October 29, 2021, a four-week period was in effect.

Convenience, accessibility, and participant willingness were among the selection criteria. Participants' participation in the study is explained by the practicalities of selecting participants within a reasonable driving distance as well as those who indicate a desire to participate. The researcher was not aiming for a precise trait of "excellence," as this is difficult to define and determine.

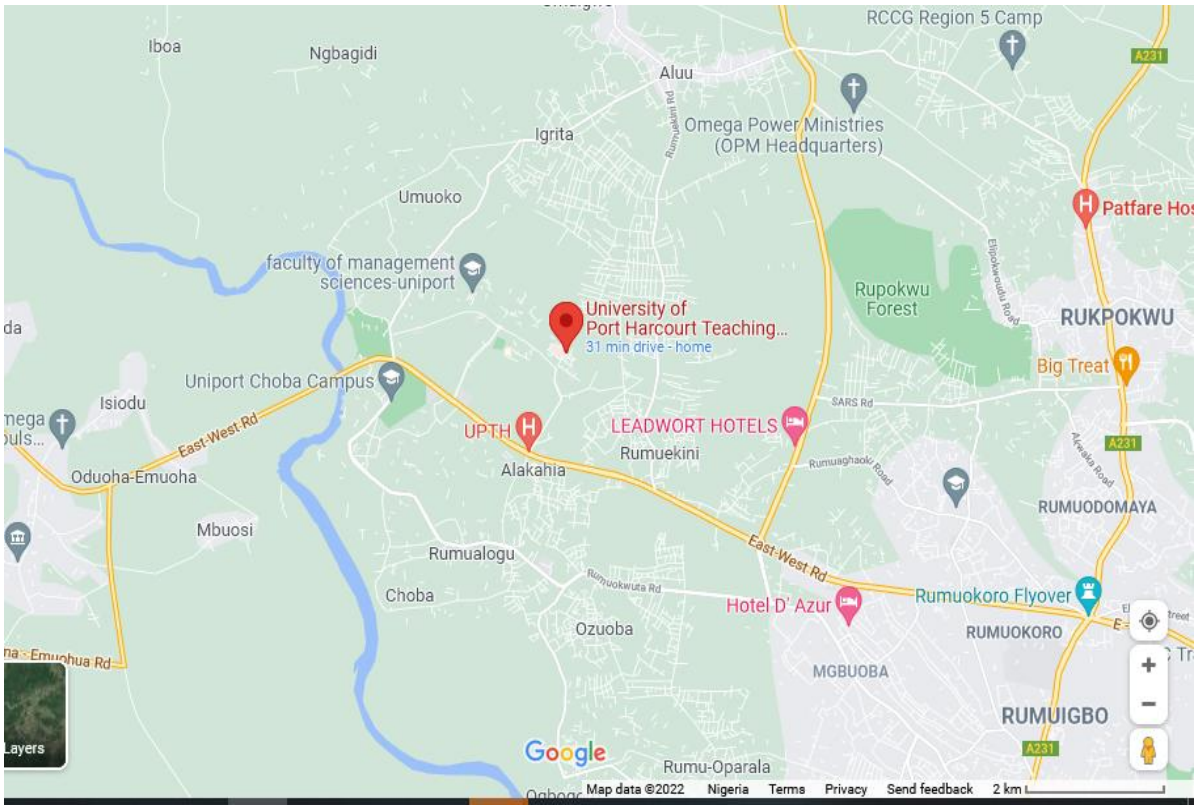

Fig. 1. Map of Rivers State showing the location of UPTH

2.3 Participant Solicitation/ Gaining Access

The researcher used a script/solicitation letter to invite people to participate. The participants needed to be aware of the study's expectations. Both verbally and in writing, these expectations were communicated. The participants were informed that they might withdraw at any moment during the study.

2.4 Sample and Sampling Techniques

The study used a random sampling technique. To arrive at a sample size of 334, the researcher used the Krejcie and Morgan [25] sampling method. This is shown in Equation 1.

$$S = \frac{X^2 NP(1-p)}{d^2(N-1)+X^2P(1-P)} \quad (1)$$

S is the sample size required, X^2 represents the chi-square table value for 1 degree of freedom at the desired confidence level (3.841), N is the number of people, P is the proportion of the population (assumed to be 0.50 since this would provide the maximum sample size), d i= the degree of precision represented as a percentage (0.05).

The Krejcie and Morgan [25] table was also used to establish the sample size for the study, which is displayed in Table 1.

In this case study, there are 2424 health workers in the institution. From the Table 1, the sample size is 334.31 respondents. Thus, a total of 334 respondents were chosen as the sample size.

2.5 Instrument for Data Collection

For this study, a research questionnaire titled "Questionnaire on Occurrence of LBP among Health Workers in UNIPORT Teaching Hospital (QOLBHW)" was created for the participants the participants in this study were given copies of the questionnaire. The questionnaire was divided into sections. Section A took ideographic information from respondents, while section B was left open-ended, with B1, B2, and B3 sections enabling participants to rely on the occurrence of LBP among health workers at their health facility.

Table 1. Population and corresponding sample size

S	N	S	N	S	N	S	N	S
10	100	80	280	162	800	260	2800	338
14	110	86	290	165	850	265	3000	341
19	120	92	300	169	900	269	3500	346
24	130	97	320	175	950	274	4000	351
28	140	103	340	181	1000	278	4500	354
32	150	108	360	186	1100	285	5000	358
36	160	113	380	191	1200	291	6000	361
40	170	118	400	196	1300	297	7000	364
44	180	123	420	201	1400	302	8000	367
48	190	127	440	205	1500	306	9000	368
52	200	132	460	210	1600	310	10000	370
56	210	136	480	214	1700	313	15000	375
59	220	140	500	217	1800	317	20000	377
63	230	144	550	226	1900	320	30000	379
66	240	148	600	234	2000	322	40000	380
70	250	152	650	242	2200	328	50000	381
73	260	155	700	248	2400	331	75000	382
76	270	159	750	254	2600	335	1000000	384

Note: N is population size; S is sample size (Source: Krejcie & Morgan, [21])

2.6 Validation of the Instrument

The magnitude to which a test is measured is referred to as validation. The term "validity" is used by some researchers. "Validity is a subjective judgment made on the basis of experience and empirical indications," Afolabi and Adeleke [26] stated. “Validity asks "Is the test measuring what you think it’s measuring? As a result, to validate the instrument, a face and content authentication test was performed on the questionnaire created for this study. Face validity is the idea that a test should look valid on the surface to test what it is designed to test, whereas content validity is the extent to which the test items cover the behavioural objectives represented by the theoretical concept being evaluated, according to Okoye [27].

2.7 Reliability of the Instrument

The test-retest approach was used to determine the instrument’s reliability. The first exam was given to ten (10) healthcare employees who were not part of the study's target population. A week later, the same responders were given the second exam. Cronbach Alpha was used to link the results of the two tests. The reliability of the instrument was then determined by the value obtained. The purpose of the dependability test was to find out the following:

1) The clarity of the items utilized in the study
2) The feasibility of the proposed data analysis method
3) Uncertainty of items, to which the respondent was unable to respond to
4) The necessity to expand some sections of the questionnaire.

The instrument's reliability was determined according to Borg and Gall's [28] guideline of using the Cronbach Alpha for instruments that are likely to give dichotomous responses and have various parts that require section-by-section dependability. As a result, Cronbach Alpha was used to examine the data from the pre-test (pilot research) conducted on health workers picked from outside the study area. The IBM Statistical Package for the Social Sciences (SPSS) software version 20.0 was used to calculate the dependability coefficients for various parts. The instrument as a whole, however, received a score of 0.76. This figure was deemed high enough to demonstrate the instrument's reliability, as the higher the reliability coefficient, the more trustworthy the device is for data collecting. Cronbach Alpha (α) is calculated as shown in Equation 2

$$\alpha = \frac{N.\bar{c}}{\bar{v}+(N-1).\bar{c}} \quad (2)$$

The average inter-item covariance among the items is $\bar{c}$, the average variance is $\bar{v}$, and N is the number of items. However, the IBM statistical package for the social sciences (SPSS) software version i20.0 was used to determine the Cronbach alpha for the study’s instrument.

Therefore:

If α ≥ 0.5, accept the instrument as being reliable

If α ≤ 0.5, reject the instrument as being unreliable

2.8 Methods of Data Collection

A total of three hundred and thirty-four (334) questionnaires were sent out. Three hundred and twenty (320) questionnaires were filled and returned (about 97.3% of the questionnaires sent out were returned). Out of the 320 questionnaires received, only three hundred (300) questionnaires were considered fit for analysis by the researcher (about 90% of the questionnaires sent out were fit for data analysis). The questionnaire used was created with Google Forms, and a link was created and shared with case study participants via the health institution's Whatsapp group.

2.9 Methods of Data Analysis

Data was analyzed using mean and standard deviations, and hypotheses were tested using Spearman Correlation and Pearson Product Moment Correlation (PPMC).

3. RESULTS AND DISCUSSION

3.1 Demographic Variables

Table 2 displays the cross-tabulation between the gender and job roles of the respondents sampled in the study. Among the administrative staff, 21 were females while 5 were males. Among the cleaning staff sampled, 7 were females while 3 were males. Among the medical practitioners who responded, 95 were females and 121 were males while among the nurses there were 21 females and 10 males. Finally, the porters sampled in this study were 6 females and 11 males respectively. Thus, a total of 26 administrative staff, 10 cleaners, 216 medical practitioners, 31 nurses and 17 porters were sampled respectively for this study. In summary, 150 (50%) respondents were males and another 150 (50%) respondents were females. Table 3 displays the years of engagement of all staff, from the cleaners to the medical practitioners.

Table 4 outlines the different department and job roles of the respondents sampled in this study. Among the administrative staff, 4 worked in the Internal medicine unit, 3 in the Paediatrics department/unit, 4 in the Community medicine unit, 7 in the Family medicine department, 2 in the Obstetrics and Gynaecology (O&G) unit, 4 in the Surgery unit and 2 in the Pathology unit. Among the cleaners, 3 were in the Internal medicine unit, 1 in the Paediatrics unit, 1 in the Community medicine unit, 1 in the Family medicine unit, 1 in the O&G unit, 2 in the Surgery unit and 2 in the Pathology unit. Among the medical practitioners, 62 were in the Internal medicine unit, 16 were in the Paediatrics unit, 20 were in the Community medicine unit, 7 were in the Family medicine unit, 15 were in the O&G unit, 79 were in the Surgery unit and 17 were in the Pathology unit. Among the nurses, 9 were in the Internal medicine unit, 3 were in the Paediatrics unit, 3 were in the Community medicine unit, 2 were in the Family medicine unit, 3 were in the O&G unit, 9 were in the Surgery unit and 2 were in the Pathology unit. Finally, among the porters, 4 were in the Internal medicine department, 4 were in the Paediatrics department, 1 was in the Community medicine unit, 1 was in the Family medicine unit, 2 were in the O&G unit, 3 were in the Surgery unit and 2 were in the Pathology unit.

According to the responses from the respondents, about 88 per cent which represented a total of 264 respondents agreed that they were not satisfied with the physical environment (structural facilities) in their workplace. Based on their responses, the researcher concluded that the structural facilities were inadequate and that this was a contributing factor in the occurrence of LBP among healthcare workers who used the facility.

Table 2. Gender and Job Role Cross tabulation

		Job role					Total
		Administrative Staff	Cleaners	Medical practitioners	Nurses	Porters	
Gender	Female	21(81%)	7(70%)	95(44%)	21(68%)	6(35%)	150
	Male	5(19%)	3(30%)	121(56%)	10(32%)	11(65%)	150
Total		26	10	216	31	17	300

Table 3. Years of Engagement at Work and Job Role Cross tabulation

		Job role					Total
		Administrative Staff	Cleaner	Medical practitioner	Nurse	Porter	
Years of engagement at work	1 – 5 yrs	18	2	32	4	4	60
	11 – 15yrs	3	4	78	9	6	100
	16 – 20 yrs	1	0	15	3	1	20
	21 – 25 yrs	1	3	12	4	0	20
	6 – 10 yrs	3	1	79	11	6	100
Total		**26**	**10**	**216**	**31**	**17**	**300**

Table 4. Department and Job Role Cross tabulation

		Job role					Total
		Administrative Staff	Cleaner	Medical practitioner	Nurse	Porter	
Department	Internal medicine	4	3	62	9	4	82
	Paediatrics	3	1	16	3	4	27
	Community Medicine	4	1	20	3	1	29
	Family Medicine	7	1	7	2	1	18
	O&G	2	1	15	3	2	23
	Surgery	4	2	79	9	3	97
	Pathology	2	1	17	2	2	24
Total		**26**	**10**	**216**	**31**	**17**	**300**

Table 5. Responses on satisfaction with the physical environment

Items	Frequency	per cent	Cumulative Percent
No	264	88.0	88.0
Yes	36	12.0	100.0
Total	**300**	**100.0**	

Table 6. Responses on the likelihood of pain associated with clinical practices

Items	Frequency	Per cent	Cumulative Percent
Not associated at all	32	10.7	10.7
Weakly associated	49	16.3	27.0
Strongly associated	219	73.0	100.0
Total	**300**	**100.0**	

Table 7. Respondent with LBP and duration

	Frequency	Per cent	Cumulative Percent
<1 month	55	18.3	18.3
1-6 months	75	25.0	43.3
7-12 months	32	10.7	54.0
>1 year	138	46.0	100.0
Total	300	100.0	

Table 8. Visual analog scale for measuring pain

	Frequency	Per cent	Cumulative Percent
1-4	122	40.7	40.7
5-7	79	26.3	67.0
8-10	38	12.7	79.7
Not applicable	61	20.3	100.0
Total	**300**	**100.0**	

From the responses in Table 6, about 73 per cent (219) of the respondents agreed that there is a likelihood of pain being strongly associated with their current clinical practices. 16.3 per cent (49) said that there is a weak association between pain and their current clinical practice while 10.7 per cent (32) of the respondents asserted that pain was not associated at all with their current clinical practices. Based on the responses, there is a strong association between pain and the respondents' current clinical practices. In another study, Trinkoff et al. reported LBP as the most common musculoskeletal disorder in nurses at the University of Maryland, USA [29].

It was observed that 21.3 per cent (64) of the respondents spent 0-1 hour sitting, 34 per cent (102) respondents spent 2-4 hours sitting down, 32 per cent (96) of the respondents spent 5-6 hours sitting down while 12.7 per cent (38) of the respondents spent more than 6 hours sitting down. Also, 17.3 per cent (52) of the respondents spent 0-1 hour standing, 53 per cent (159) of the respondents spent 2-4 hours standing, 22 per cent (66) of the respondents and 7.7 per cent (23) of the respondents spent more than 6 hours standing. More so, 58.3 per cent (175) of the respondents spent 0-1 hour walking, 23 per cent (69) of the respondents spent 2-4 hours walking, 13.3 per cent (40) of the respondents spent 5-6 hours walking and 5.3 per cent (16) of the respondents spent more than 6 hours walking. Thus, the respondents spend 0-1 hour of their time walking, 2-4 hours standing and 5-6 hours sitting. The findings corroborate with another study by Mohd et al. [30], which found that prolonged sitting, poor fitness, a sedentary lifestyle, and uncomfortable work postures are all risk factors for LBP. When compared to those who work for less than 4 hours by standing, Simsek et al. [31] found that those who work for 4–8 hours by standing have 0.145 times greater risk while those who work for more than 8 hours by standing have 0.185 times more risk. When compared to those who worked for less than 4 hours by sitting, those who worked for 4–8 hours by sitting had 4.7 times the risk.

In Table 7, 18.3% (55) of the respondents claimed to have experienced low back discomfort for less than a month. Low back discomfort was reported by 25% of respondents (75%) to have been present for at least 1-6 months. 10.7% (32) of the respondents said they had been suffering from LBP for 7-12 months, while 46% (138) said they had been suffering from LBP for more than a year. As a result, the prevalence of lower back pain among health workers is significantly high. This is in line with the findings of Fayzi et al [8].

Table 8 displays the visual analogue scale for measuring pain among healthcare workers. 40.7 per cent (122) of the respondents rated 1-4, 26.3 per cent (79) of the respondents rated 5-7, 12.7 per cent (38) of the respondents rated 8-10 and 20.3 per cent (61) said it did not apply to them. The number of responders that confirmed the prevalence of LBP they had using the VAS was significant, indicating that LBP was common among healthcare employees. Johnson & Edward [32] complement the findings of this study by reporting that 37.8% of 648 Greek public office workers had one-year prevalence. Pain-related sleep disruptions were reported by 37% of office clerks with persistent LBP. Age, gender, BMI, adjustable back support, clerk body position when sitting, sitting time of more than 6 hours, job satisfaction, repetitive labour, and anger within 30 days before the trial were all significant factors for LBP recurrence, according to multiple logistic regression models [32].

The correlation coefficient between general health and LBP was obtained to be -0.61. It indicates that there is a negative association between general health and the occurrence of LBP. This suggests that if health care workers' overall health improves the occurrence of LBP decreases, and vice versa. The findings support the findings of Bohman et al. [33] showing a healthy lifestyle is linked to a reduction in long-term LBP among women with intermittent LBP. Mierswa and Kellmann [34] found an elevated

risk of acquiring LBP among smokers in a sample of 60 pain-free administrative staff from German universities.

To investigate the relationship between the prevalence of LBP and job role, a test of significance was done and the chi-square value of 3.30 was obtained which is less than the critical value of 9.49 at 4 degrees of freedom. So there is no relationship between the prevalence of LBP and job role at the University of Port Harcourt.

Similarly, there is no correlation between the incidence of LBP and the age of health workers in the University of Teaching Hospital because the calculated chi-square value obtained was 5.515 which is less than the chi-square critical value of 9.49 at 4 degrees of freedom. In conclusion, there is no link between sociodemographic factors and the prevalence of LBP among health workers at the University of Teaching Hospital. This supports the findings of Kwon et al. [35], who found no statistically significant link between LBP and age when other characteristics such as obesity, smoking, degree of activity, educational attainment, and stress level were held constant. Furthermore, there is no link between employment role and the occurrence of low back discomfort. As a result, there is no link between socio-demographic factors and the prevalence of LBP among healthcare professionals at the University of Teaching Hospital.

The relationship between years of work engagement and LBP among health workers was investigated. There is a link between years of job engagement and LBP among health workers at the University of Teaching Hospital, as the computed Chi-square value of 313.655 is more than the Chi-square critical value of 21.03 at degree of freedom 12.

4. CONCLUSION

For academics, the study has produced empirical data on the occurrence of LBP at the University of Teaching Hospital, which can be used in comparison studies by other researchers. This study also gave management at the University of Teaching Hospital information on how their employees feel about their physical work environment, allowing them to set up appropriate workstations and increase their workers' welfare and well-being. Based on the findings of the study, the following conclusions were made for the study;

1. Long periods of sitting or standing without taking ergonomic breaks can raise the risk of LBP.
2. Because most of the healthcare professionals at the University of Teaching Hospital are constantly exposed, there is a significant prevalence of LBP among them.
3. At the University of Teaching Hospital, there is a link between general health and the occurrence of LBP among healthcare employees.
4. The incidence of LBP among health workers at the University of Teaching Hospital is unrelated to the respondents' socio-demographic factors.
5. Among the health workers at the University of Teaching Hospital, there is a link between years of work engagement and low back discomfort.

The prevalence of the issue is notably high, making it crucial to implement a strict no-weight-lifting policy. Hospitals should be adequately equipped with the necessary lifting equipment, as these measures could significantly help reduce the high incidence of LBP among healthcare workers.

It is therefore recommended that UPTH's management guarantee that its employees' workstations are as pleasant as possible to limit the incidence of LBP in these healthcare workers. To reduce the occurrence of LBP, healthcare professionals should take ergonomic pauses. Due to the high frequency of LBP in healthcare workers, primary medical caregivers should have a high index of suspicion to implement management early and perhaps improve the quality of life of healthcare workers. Regular health discussions and health education for UPTH healthcare personnel to raise awareness of the causes of LBP and how to avoid it should be held. The health talks will also cover how to ensure that the ergonomic breaks put in place are followed. Regular health checks to screen for and treat other health disorders, as there is a link between the occurrence of other health conditions and the occurrence of LBP.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image

generators have been used during writing or editing of this manuscript.

CONSENT

As per international standards or university standards, Participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Sikiru L, Hanifa S. Prevalence and risk factors of low back pain among nurses in a typical Nigerian hospital. African Health Sciences. 2010;10(1):26–30.
2. Chou R, Qaseem A, Owens D, Shekelle P. Diagnostic Imaging for Low Back Pain: Advice for High-Value Health Care From the American College of Physicians. Annals of internal Medicine. 2011;154:181-9.
   DOI:10.1059/0003-4819-154-3-201102010-00008.
3. Nair RS. Prevalence and risk factors associated with low back pain among nurses in a tertiary care hospital in south India. Int J Orthop. 2020;6(1):301–6.
   DOI:10.22271/ortho.2020.v6.i1f.1878
4. Tavakkol R, Kavi E, Hassanipour S, Rabiei H, Malakoutikhah M. The global prevalence of musculoskeletal disorders among operating room personnel: A systematic review and meta-analysis. Clin Epidemiol Global Health. 2020;8(4):1053–61.
   DOI:10.1016/j.cegh.2020.03.019
5. Rasmussen C, Holtermann A, Mortensen O, Søgaard K, Jørgensen M. Prevention of low back pain and its consequences among nurses' aides in elderly care: A stepped-wedge multi-faceted cluster-randomized controlled trial. BMC Public Health. 2013;13(1):1088.
   DOI:10.1186/1471-2458-13-1088.
6. Asadi P, Monsef Kasmaei V, Zia Ziabari S, zohrevandi B. The prevalence of low back pain among nurses working in poursina hospital in rasht, iran. Journal of Emergency Practice and Trauma. 2016;2 (1):11-15.
   Available:https://www.sid.ir/en/journal/ViewPaper.aspx?id=496508
7. Wu A, March L, Zheng X, Huang J, Wang X, Zhao J, Blyth F, Smith E, Buchbinder R, Hoy D. Global low back pain prevalence and years lived with disability from 1990 to 2017: estimates from the Global Burden of Disease Study 2017. Annals of Translational Medicine. 2020;8:299-299.
   DOI:10.21037/atm.2020.02.175
8. Fayzi R, Karimi A, Fereidouni A, Salavatian A, Imani B, Tavakkol R. Prevalence and Clinical Characteristics of Low Back Pain among Operating Room Personnel: A Cross-Sectional Study in South of Iran. Front Surg. 2022;9 :841339.
   DOI: 10.3389/fsurg.2022.841339. PMID: 35903262; PMCID: PMC9316587.
9. Roffey DM, Wai EK, Bishop P, Kwon BK, Dagenais S. Causal assessment of occupational sitting and low back pain: Results of a systematic review. The spine journal: official journal of the North American Spine Society. 2010;10(3):252–261.
   Available:https://doi.org/10.1016/j.spinee.2009.12.005
10. Mukhtad, Amal, Mohamed, Huda. Lower back pain among health care workers in operating room at Al-Fateh Children's Hospital: Prevalence and Risk Factors. 2018;1-11.
    DOI:10.9734/AJRNH/2018/43644.
11. US Department of Labor Bureau of Labor Statistics: Standing or walking versus sitting on the job in 2016 (March 01, 2017);
    Available:https://www.bls.gov/opub/ted/2017/standing-or-walking-versus-sitting-on-thejob-in-2016.htm; Accessed 12/08/2017.
12. Gaskin DJ, Richard P. The economic costs of pain in the United States. The Journal of Pain. 2012;13(8):715–724.
    Available:https://doi.org/10.1016/j.jpain.2012.03.009.
13. Bener A, Dafeeah EE, Alnaqbi K. Prevalence and correlates of low back pain in primary care: What are the contributing factors in a rapidly developing country. Asian spine Journal. 2014;8(3):227–236.
    Available:https://doi.org/10.4184/asj.2014.8.3.227

14. Williams AC, Craig KD. Updating the definition of Pain. Pain Review. 2014;157 (11):2420-2423.
15. Greve KW, Bianchini KJ, Ord JS. The psychological assessment of persons with chronic pain; 2012.
16. World Health Organization. International Classification of Functioning, Disability and Health (ICF); 2010.
Available:http:www.who.int/classifications/icf/en
17. Lela M, Josee F. The relationship between low back pain and physical activity among nurses at Rwanda Military Hospital. In 9th WCPT Africa Region Congress. African Journal of Physiotherapy and Rehabilitation Sciences. 2012;4(1-2):63-67.
18. Smedley J, Cooper C. Prospective cohort study of predictors on incident low back pain in nurses. British Medical Journal. 1997;314(7089):1225- 1228.
19. Engkvist IL, Kjellberg A, Wigaeus H, Hagberg M, Menckel E, Ekenvall L. Back injuries among nursing personnel — identification of work conditions with cluster analysis. Safety Science. 2001;37, 1-18.
20. de-Bono JP, Hudsmith LE, de-Bono AM. Back pain in pre-registration house officers, Occupational Medicine. 2001;51 (1):62–65.
Available:https://doi.org/10.1093/occmed/51.1.62
21. Costa BR, Vieira ER Risk factors for work related musculoskeletal disorders: A systematic review of recent longitudinal studies. American Journal of Industrial Medicine. 2010;53(3):285-323.
22. Hodder JN, Holmes MW, Keir PJ. Continuous assessment of work activities and posture in long-term care nurses. Ergonomics. 2010;53(9):1097-107.
23. Van-Dienn J, Kuijer P, Burdorf A. Non-specific low back pain. Lancet. 2012;379 (19):1874
24. Boden LI, Sembajwe G, Tveito TH. Occupational injuries among nurses and aides in a hospital setting. American Journal of Industrial Medicine. 2012;55(2): 117-26.
25. Krejcie RV, Morgan DW. Determining Sample Size for Research Activities. Educational and Psychological Measurement; 1970.
26. Afolabi SS, Adeleke JO. Assessment of resources and instructional materials status in the teaching of mathematics in Southwestern Nigeria. European Journal of Scientific Research. 1970;43(3), 406-410.
Available:http://www.eurojournals.com/ejsr.htm). Assessment of resources and instructional materials status in the teaching of mathematics in southwestern Nigeria. 43”406-410.
27. Okoye RO. Educational and psychological measurement and evaluation. Lagos: Ed-Solid Foundations; 1996.
28. Borg WR, Gall MD. Educational research: An Introduction. Longman Education; 1983.
29. Trinkoff AM, Lipscomb JA, Geiger-Brown J, Brady B. Musculoskeletal problems of the neck, shoulder, and back and functional consequences in nurses. Am J Ind Med. 2002;41(3):170–8.
DOI:10.1002/ajim.10048
30. Mohd N, Surender MR, Simmi S, Ravinder M, Ramakranthi T, Syamala B. Low back pain in South Indians: Causative factors and preventive measures. Scholars Journal of Applied Medical Sciences. 2015; 3(1D):234-243.
31. Simsek S, Yagci N, Senol H. Prevalence and Risk Factors of Low Back Pain among Healthcare Workers in Denizli. Agri Pain. 2017;29(2):71-178.
DOI: 10.5505/agri.2017.32549
32. Johnson O, Edward E. Prevalence and Risk Factors of Low Back Pain among Workers in a Health Facility in South–South Nigeria. British Journal of Medicine and Medical Research. 2016;11: 1-8.
DOI:10.9734/BJMMR/2016/20785.
33. Bohman T, Alfredsson L, Jensen I, Hallqvist J, Vingård E, Skillgate E. Does a healthy lifestyle behaviour influence the prognosis of low back pain among men and women in a general population? A population-based cohort study. BMJ Open. 2014;4:e005713.
DOI:10.1136/bmjopen-2014-005713.
34. Mierswa T, Kellmann M. Psychological detachment as moderator between psychosocial work conditions and low back pain development. International Journal of Occupational Medicine and Environmental Health. 2017;30.
DOI:10.13075/ijomeh.1896.00861.
35. Kwon MA, Shim WS, Kim MH, Gwak MS, Hahm TS, Kim AS, Kim CS, Chai YLL,

Park JH, Cho HS, Kim TH. A correlation between low back pain and associated factors: A study involving 722 patients who had undergone general physical examination, Journal of Korean Medicine. 2006;21(6);1086-1091.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/126589