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Research Article

Prevalence, Risk Factors and Coping Strategies of Low Back Pain among Healthcare Professionals at the Bamenda Regional Hospital, Northwest Region, Cameroon

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Abstract

Introduction: Low back pain (LBP) is a significant concern among healthcare professionals (HCPs) due to constant twisting, bending, standing and sitting for long. Based on global statistics, LBP affected 619 million people worldwide in 2020, and it is approximated that there will be an increase in the number of cases to 843 million cases by 2050. Other recent findings across the globe reveal that the incidence of low back pain (LBP) is on the rise, with African countries being amongst the countries with the highest increase disability rates caused by LBP. In spite of these, there is not much information about the burden of LBP in the Bamenda Regional Hospital (BRH), Northwest Region, Cameroon. The main objective of the study was to assess the prevalence, risk factors and coping mechanisms of LBP among HCPs at the BRH, a third category hospital.

Methods: This was a cross-sectional study conducted among 334 healthcare workers, from February to April 2026. Participants were selected using a convenience sampling technique. Structured questionnaires were used for data collection of socio-demographics, prevalence, risk factors and coping mechanisms of LBP. Data was input into Microsoft Excel version 16 and analysed using Statistical Package for Social Sciences version 26.0.

Results: The prevalence of LBP among HCPs for the past six months was 96.6% (318/334), while only a small fraction (3.4%, 16) indicated that they had not experienced LBP. The most common risk factor associated with LBP was continuous standing while on duty (74.6%), with the least factor being frequent transfer of patients (41%). With respect to coping mechanisms, 82% (274) modified work activities, 75% (245) employed physical therapy and 72.5% (242) went further to receive training on LBP ergonomics.

Conclusion: The overall prevalence rate of LBP among HCPs at the BRH was very high. Continuous standing was the main prominent risk factors of LBP among the HCPs. The main coping strategies was modification of work activities, use of physical therapy and training on LBP ergonomics.

Recommendation: It is recommended that healthcare institutions strengthen ergonomic interventions, provide continuous staff training, and adopt supportive workplace policies aimed at reducing prolonged standing and physical strain among healthcare professionals.

Keywords: Low Back Pain; Healthcare Professionals; Prevalence; Risk Factors; Coping Strategies

Abbreviation

BRH: Bamenda Regional Hospital; HCPs: Healthcare Professionals; LBP: Low Back Pain; STEM-HIHTS: Stem Higher Institute of Health and Technological Sciences; RF: Risk Factors; POP: Population.

Introduction

According to Margetis., *et al.* low back pain (LBP) is pain felt between the lower edge of the ribs and the buttock [1]. This condition can be acute whereby it occurs within a short space of time or for a bit longer (sub-acute), or for a much longer period of time (chronic) [2]. In recent years, global statistics on prevalence and effects of LBP show that 619 million people were affected worldwide. In spite of this, other approximations rather show prospects of an increase in the number of cases to 843 million cases by 2050 [2]. Moreover, different studies reveal that LBP is among the musculoskeletal conditions that have the highest global prevalence, affecting individuals across various professions [3,4]. In European countries and the United States, LBP is one of the most common and expensive health challenges among healthcare professionals. A study confirms this by highlighting a lifetime prevalence (66.6%) of LBP among healthcare workers between ages 30 and 49 years [5]. Moreso, recent findings reveal that across the globe, the incidence of LBP is on the rise, with estimates indicating that about 30% to 80% of the population is affected [6,7]. Additionally, studies show that routine activities of healthcare professionals put them at risk of developing musculoskeletal disorders (MSDs), among which is LBP [4,8,9].

In the past two decades, African countries were among the countries that recorded the greatest increase in disability resulting from LBP [4]. In sub-Saharan Africa, there are disparities in the prevalence of LBP; a recent study by Atalay., *et al.* also highlights LBP as the main problem in most musculoskeletal disorders [6, 10]. In the same study, the researchers found that the overall estimated prevalence of LBP among the working population in sub-Saharan Africa was 55.05% [6]. More studies done in Africa precisely in Nigeria highlight the challenge of a very high prevalence of LBP noted both among healthcare workers (73.53%), and other occupational groups [11,12]. Unfortunately, such a situation constitutes one of the major causes of morbidity in numerous working populations, which includes health workers.

In Cameroon, there is not much information about the burden of LBP yet, healthcare workers (HCWs) are more at risk of developing LBP due to physical and emotional factors [10,13]. Among the few Cameroonian studies, some researchers in Douala-Cameroon highlighted in their study that work related musculoskeletal disorders (WRMSDs) among which is LBP, are important public health concerns which have forced many workers to quit their jobs prematurely [14]. Another of such studies reveals a high prevalence of WRMSDs among Nurses (69.9%) and 73.5% of Laboratory technicians (LTs) [15,16]. Although such evidences exist to show that many healthcare professionals suffer from WRMSDs, particularly LBP [15,17,18], no published work is available on its prevalence, possible predisposing factors and the coping strategies at the BRH, a category 3 hospital in the city of Bamenda, Northwest region, Cameroon.

Materials and Methods

Study design

The study employed a cross-sectional study design from February to April 2026.

Study area

The study was conducted at the BRH, North West Region of Cameroon. It is a Category 3 referral hospital serving as a primary teaching and clinical site for the region.

Target population

The study targeted all HCPs working at the BRH. This included all full-time clinical staff including Doctors, Nurses, Midwives, Laboratory Technicians, Physiotherapists, and others.

Sampling and procedure

A total of 334 healthcare professionals were selected from various units in the BRH, Northwest region-Cameroon, using a non-probability convenience sampling method.

The sample size was determined using the Cochran formula: $N = p\ (1\text{-}p)\ z^2/d^2$, where N is the minimum sample size, P is the prevalence of LBP from a previous study (P = 0.7988), z is the statistic for the desired confidence level (z=1.96 for confidence at 95%) and d is the accepted margin of error (d = 0.05). After calculation, the estimated sample size was n = 247. Taking non-response rate of 10% (24.6 = 25). Final estimated sample size was 247 + 25 = 275 participants, however, 334 participants were recruited in view of adding credibility to the study.

Selection criteria

Inclusion criteria

All full-time clinical healthcare workers in BRH including Doctors, Nurses, Midwives, Laboratory Technicians, Physiotherapists, and others, who have been working for at least 6months.

Exclusion criteria

Healthcare workers with less than six months of work experience at the facility, those who did not sign the consent form, those on maternity or long-term sick leave, and individuals with congenital spinal deformities or previous major spinal trauma unrelated to work and those who never gave their consents were excluded from the study.

Data collection

Socio-demographic features

Data on demographics and risk factors, were collected using a well-designed questionnaire, which was administered face-to-face. The data obtained included: demographic and personal profiles such as age, sex, profession, level of education and body mass index.

Low back pain

LBP was assessed by use of questions adopted from previous studies. This included questions to assess duration of work, positioning during work activities and nature of work.

Validity and reliability of the research questionnaires

The content of the questionnaire was validated and accepted by the authors and a Physiotherapist.

Coping mechanisms

The possible coping mechanisms assessed in this study included the use of physical therapy such as stretching or physical exercise, consulting medical professionals, modifying work activities and use of medications.

Data analysis

Data was input into Microsoft Excel version 26, cleaned and later analysed using Statistical Package for Social Sciences (SPSS Inc., Chicago, and IL., USA) version 26.0. Quantitative variables were presented as frequencies and percentages. Results were displayed using tables and pie charts.

Ethical consideration

Research authorization and clearance (160/ATT/NWR/RDPH) was obtained from the Bamenda regional delegation of public health which is in charge of reviewing public health research protocols. Also, an administrative authorization was obtained from the Bamenda Regional Hospital. Participant information was coded for ethical reasons, and all the participants gave their signed consent. This study respected ethical principles of the European Union. The fundamental principles of medical research according to Helsinki's Declaration were strictly respected.

Results

Socio-Demographic characteristics of the study population

Table 1 presents the socio-demographic characteristics of respondents which were analyzed, and included age, professional designation and years of experience. From the table below, we find that majority (55.5%) of the respondents were aged 31–40 years (55.9%), followed by those aged 20–30 years (26.6%), while only 17.4% were aged 41 years and above. This indicates that most participants were in their active working age group.

Prevalence of LBP among healthcare professionals

The overall prevalence of LBP among healthcare professionals was analyzed which included; experience of pain or discomfort in the lower back for the past 6months, experience of pain or discomfort in the lower back for the past 6months and first experience of LBP. The table below describes the prevalence and characteristics of low back pain (LBP) among respondents. A high proportion (96.6%) reported experiencing LBP Yes, indicating that LBP is highly prevalent among healthcare professionals. Only 3.4% reported never experiencing LBP.

The figure above indicates that majority (96.6%) of the healthcare workers have had LBP in the past 6 months, with just a few (3.4%) expressing not to have had.

Possible risk factors associated with LBP among healthcare professionals

The risk factors of LBP among healthcare professionals were analyzed which include: frequency of lifting heavy loads at work, frequency of transfering patient and job related stress. The table below outlines the occupational and lifestyle risk factors

Variable	Category	Frequency (n)	Percentage (%)
Age	20-30 years	89	26.6
	31-40 years	187	55.9
	41 years and above	58	17.4
	Total	334	100
Professional designation	Nurse	160	47.7
	Doctor	32	9.6
	Other HCPs	142	42.7
	Total	334	100
Years of experience	Less than 5 years	91	27.2
	5-10 years	136	40.7
	More than 10 years	107	32
	Total	334	100
Average work shift duration	Less than 8 hours	68	20.4
	8-10 hours	8	2.4
	8-12 hours	238	73
	More than 12 hours	14	4.2
	Total	334	100
BMI category	Normal (18.5-24.9)	237	71
	Overweight (25-29.9)	85	25.4
	Obese (30 and above)	17	5.1
	Total	334	100

Table 1: Socio-Demographic Characteristics of the Study Population.

Variable	Category	Frequency (n)	Percentage (%)
Experience of pain or discomfort in the lower back for the past 6months	No	16	3.4
	Yes	318	96.6
	Total	334	100
Interference of LBP with work duties	Not at all	99	19.5
	Sometimes	193	69.3
	Significantly	42	11.2
	Total	334	100
Taking time off duty due to low back pain	Not at all	92	27.5
	To a certain extent	46	13.8
	Significantly	196	58.7
	Total	334	100

Table 2: Prevalence of LBP among HCP.

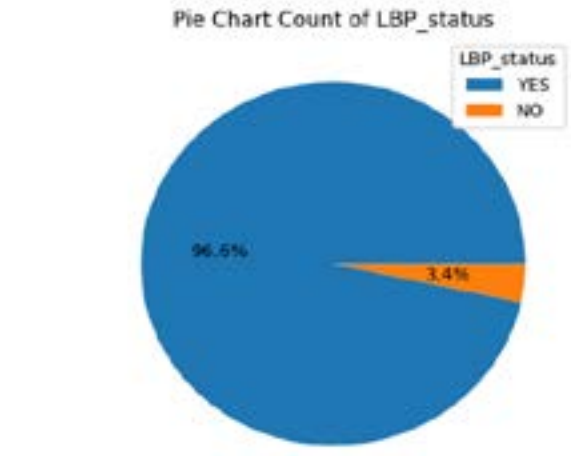

Figure 1: Prevalence of LBP.

contributing to LBP. A considerable number of respondents reported frequent heavy lifting (48.2%) and patient transfer (41%), both of which are major physical risk factors. Additionally, 50% of Alternate to participants reported high job-related stress, indicating a strong psychosocial component.

Coping strategies of LBP among healthcare professionals

Coping mechanisms of LBP among healthcare professionals were analyzed including; management of LBP, relaxation techniques, modification of work activities. Table 4 presents the coping strategies adopted by respondents to manage LBP. The majority (75%) relied on physical therapy, making it the most common management method.

Variable	Category	Frequency (n)	Percentage (%)
Lift heavy loads at work	Rarely	9	1.1
	Occasionally	4	0.6
	Frequently	157	48.2
	Sometimes	106	36.7
	Never	58	13.4
	Total	334	100
Frequency of transferring patients	Frequently	137	41
	Never	45	13.4
	Occasionally	2	0.6
	Rarely	42	12.5
	Sometimes	108	32.5
	Total	334	100
Job related stress	Moderate	138	41.3
	Low	28	8.3
	High	166	50
	Occasionally	3	0.5
	Total	334	100
Engagement in regular physical exercise	2-5hrs	3	0.9
	Occasionally	257	76.9
	Frequently	58	17
	Never	14	5.2
	High	2	0.6
	Total	334	100

Continuous standing while on shifts	2-5hrs	248	74.3
	less than 2hrs	39	11.7
	more than 5hrs	47	14.1
	Total	334	100

Table 3: Risk Factors of LBP among Healthcare Professionals.

Variable	Category	Frequency (n)	Percentage (%)
Management of LBP	Self-medication	39	10
	Physical therapy	245	75
	Seek medical attention	4	1
	Self-medication and physical therapy	22	6
	Physical therapy and self-medications	24	8
	Total	334	100
Relaxation techniques	Stretching	179	58.6
	Massage	89	22.4
	Stretching and massage	42	12
	Deep breathing	24	7
	Total	334	100
Modification of work activities	No	34	10
	Sometimes	274	82
	Often	26	8
	Total	334	100
Receive any training	No	242	72.5
	Yes, basic	63	18.8
	Yes, advanced	29	8.7
	Total	334	100
Any alternative therapies	No	192	57.4
	Yes frequently	23	6.6
	Yes occasionally	119	36
	Total	334	100

Table 4: Coping strategies of LBP among Healthcare Professional who practiced self-medication (10%), while very few sought formal medical attention (1%).

Discussion

The main objective of this study was to determine the prevalence, associated risk factors and identify coping strategies of LBP among healthcare workers in BRH. Findings reveal that the prevalence of LBP among healthcare workers in the past six months is very high (96.6%), and corroborates regional studies conducted in Cameroon [10,14-18,20]. To elaborate, homogeneity was observed with a study conducted in Nigeria, where the prevalence of LBP was

84.7% in the past twelve months [11]. A Ghanian study revealed prevalence of LBP at 81.6%, while Abel., *et al.* found that it was also high (80%) in Ethiopia divulgating a general high prevalence amongst healthcare workers [12,13]. In the same vein, Jacquier-Bret and Gorce identified a relatively high prevalence (60%) during their systematic review among surgeons and dentists, with African and European physiotherapists presenting rates of LBP three times higher than those in Asia and America [4]. Nonetheless, the finding is contrary to that of Ge., *et al.* in Singapore, who revealed a very low prevalence of 8.1% [19]. This could be due to the differences in geographical area, target population, duration of the study, socio cultural factors, as well as the differences in sample size.

Based on comprehensive literature review, a list of predisposing factors of LBP was made which includes bending during work, frequent standing, frequent lifting of patient and/or heavy objects, and job stress. The findings of this study indicate that continuous standing while on duty (74.6%) and long work hours (more than 8 hours, 73%) are the most significant risk factors for low back pain within this professional group. These results are consistent with existing research in the field, aligning with findings in Ghana reported by Tawiah., *et al.* and Abel., *et al.* in Ethiopia, who also found lifting heavy objects (43.8% and 67.9% respectively) as a risk factor [13]. With respect to posture, standing for long periods while on duty was also a risk factor of LBP, and aligns with a systematic review by Jacquier-Bret and Gorce [4]. Moreso, studies in Yaounde and Douala confirm these findings by also highlighting the role played by lifting heavy objects, job stress (69.8%), working for more than 8 hours (70%), standing for long periods (71.1%) and transferring of patients as risk factors of LBP [10]. In Ethiopia, prolonged standing (45.7%) and frequent bending positions (53.6%) were also risk factors [13,14]. In another study conducted in Douala, Cameroon, it was highlighted that job stress (89.6%) was related to nearly two times the risk of having WRMSDs including LBP [15].

Regarding coping strategies, this study highlights several coping mechanisms beyond conventional medication, which most participants reportedly used. Overall, the most prominent and effective strategies identified include engaging in physical therapy, relaxation techniques like stretching, modifying work activities and getting trainings in ergonomics. These findings are coherent to those carried out in Yaounde and Ghana, where stretching (30%) and training on work machinery (81.7%), on transport aids (51.2%), and good work posture (62.9%) were significant strategies in coping with LBP [12,20]. In Singapore, participants revealed that LBP had an impact on their physical functioning, while up to 42.9% of participants in Ethiopia record absences from work due to the pain [13,19]. Olatubi and his collaborators in Nigeria, and Moumeni and others in a rural community in Cameroon reported that regular exercise (54.2%) and taking days off work (88.0%) were relevant in coping with LBP [21,22]. Similarly, another study in Nigeria revealed that massage (78.3%), exercise (72.0%), use of medication (69.3%), modifying work activity (54.5%) and seeking medical attention (34.9%) were coping mechanisms employed by participants in the country [23].

Strengths and limitations of the study

A significant value provided by this study is that it assessed LBP among HCPs, who occupy a central position in the procurement of health and sustenance of human livelihood. Before now, no study had been conducted on the subject matter in the city of Bamenda, Northwest region of Cameroon. Notwithstanding, some limitations to the study exist: firstly, the cross-sectional nature of the study may hinder the establishment of causal relationships. Recall bias may also affect findings, as participants were expected to provide data from previous months. Also, self-reported questionnaires may create a gap between what is written on the questionnaire and what is actually being practiced by the respondent. Despite these, findings from this study are valuable due to the relatively large sample size used for the study, the pivotal position occupied by the BRH and novelty, being the first study of its kind in the study area.

Conclusion

The overall prevalence of LBP among healthcare professionals at the BRH was very high. Lack of engagement in regular physical exercise, continuous standing while on duty and long work hours were prominent risk factors of LBP among the healthcare professionals. They cope with this challenge by use of physical therapy, modifying their work activities and getting trained on LBP ergonomics.

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of the BRH for the authorization to conduct this study in their prestigious hospital.

Ethical Consideration

Research authorization and clearance (160/ATT/NWR/RDPH) was obtained from the Bamenda regional delegation of public health, which is in charge of reviewing public health research protocols. Also, an administrative authorization was obtained from the Bamenda Regional Hospital. Participant information was coded for ethical reasons, and all the participants gave their signed consent. This study respected ethical principles of the European Union. The fundamental principles of medical research according to Helsinki's Declaration were strictly respected.

Consent for Publication

All the authors accepted for this article to be submitted for publication.

Availability of Data and Materials

Most data generated or analyzed during this study are included in this Article. Also, all findings that support the result of this study are included.

Conflict of Interest

The authors certify there is no conflict of interest.

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Author's Contributions

B.K.M**:** Study conception, design, writing and submission of article. A.S.B: Data collection, writing and editing. S-R.C.A: Study conception, results interpretation, writing and editing. B.Z.A: Data analysis, Results interpretation, and editing. M.P.S: results interpretation, writing, and editing. G.M.A: Data collection, writing and editing. All Authors fully reviewed the manuscript.

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