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# Epidemiology, Clinical Patterns, and Treatment Modalities of Low Back Pain in Non-Pregnant Adult Outpatient Consultations at the Kumba Regional Hospital Annex, Southwest Region of Cameroon

**Ernest K. Ndifor[1], Theophile Nana[2], Maxwell Itambi[3], Vera Ashley[4], Melisa Bokwe[4], Dora Makia[5], Marc L. Guifo[6], Pius Fokam[2]**

[1]Department of Surgery and Specialties, Kumba Regional Hospital Annex, Faculty of Health Sciences, University of Buea, Buea, Cameroon
[2]Department of Surgery and Specialties, Douala General Hospital, Faculty of Health Sciences, University of Buea, Buea, Cameroon
[3]Department of Surgery, Bamenda Regional Hospital, Faculty of Health Sciences, University of Bamenda, Bamenda, Cameroon
[4]Department of General Medicine, Kumba Regional Hospital Annex, Kumba, Cameroon
[5]Department of Radiology, Kumba Regional Hospital Annex, Kumba, Cameroon
[6]Department of Surgery, Faculty of Medicine and Biomedical Sciences, CHU Yaounde, Cameroon, Yaounde, Cameroon
Email: kikahernest@gmail.com

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## Abstract

**Introduction:** Low back pain (LBP) is one of the most common reasons for medical consultation, as most people experience LBP at some point in their lifetime. LBP is also one of the leading causes of disability worldwide, increasingly becoming a major public health concern. Despite the importance of epidemiological data in guiding clinical management, there is a scarcity of such data in the Southwest Region of Cameroon (SWRC). We, therefore aimed to describe the epidemiology, clinical patterns, and treatment modalities of LBP in non-pregnant outpatients at the Kumba Regional Hospital Annex (KRHA), SWRC. **Methods:** We carried out a hospital-based cross-sectional descriptive study from December 1, 2023, to April 1, 2024, at the outpatient department of the KRHA. A structured pre-tested data entry form was used to collect data from adult patients who presented with LBP and who consented to participate in the study. Data obtained included socio-demographic characteristics, relevant past medical history, clinical features, physical examination findings, and the various treatment modalities received after consultation. The data were entered into a Microsoft Excel spreadsheet and analyzed using the Statistical Package for Social Sciences version 26.0. Bivariate analysis was used to describe factors associated with LBP, and a p-value of <0.05 was considered sta-

tistically significant. **Results:** Out of a total of 4009 patients who were consulted during the period, 607 non-pregnant patients presented with LBP (hospital-based prevalence of 15.1%). The mean age (±standard deviation) of the participants was 56.7 (±14.3) years, with female predominance (sex ratio 2:1). The most common clinical pattern of LBP was chronic mechanical LBP (n = 576; 94.9%) associated with radiculopathy (n = 442; 76.7%). Factors that were unadjustably significantly associated with the development of LBP were female gender (OR: 1.48, 95% CI:1.24 - 1.77), overweight (OR: 3, 95% CI: 2.5 - 3.7), and a patient age of >50 years (OR: 3.8, 95% CI: 3.3 - 4.6). The major treatment modalities were lifestyle modification measures combined with the prescription of non-steroidal anti-inflammatory drugs (n = 607; 100.0%), opioids (n = 580; 95.6%) and myorelaxants (n = 576; 94.9%), with less than 10% of the cases requiring any form of medical referral or evacuation for more specialized care. **Conclusion:** LBP is a common problem encountered in outpatient consultations, and most of its patterns can be identified by adequate clinical examination. Proper understanding of the factors associated with the development of LBP greatly helps in the management of this very common outpatient problem in a resource-limited setting.

## Keywords

Low Back Pain, Epidemiology, Clinical Patterns, Treatment Modalities, Outpatient Consultation

## 1. Introduction

Low back pain (LBP) is defined as pain located below the costal margin and above the inferior gluteal folds, with or without radiating down to the lower limb [1]. LBP is one of the most common reasons for consulting a primary health care physician. In 2020, LBP affected 619 million people globally, and it is estimated that this number will increase to 843 million cases by 2050, driven largely by population expansion and aging [2]. LBP is increasingly becoming a major public health concern, with an estimated global lifetime prevalence of 85% [3]. In Africa, LBP is increasingly recognized as a major health problem. A systematic review of epidemiological studies across Africa reported a pooled adult prevalence of 32%, with an average lifetime prevalence of 62% [4]. In Cameroon, a study done at the Rheumatology Service of the Douala General Hospital reported a prevalence of chronic low back pain (CLBP) of 19.1% [5]. Age, gender, body mass index (BMI), lifting heavy objects, and lifestyle have been identified as factors associated with LBP [6]. Management of LBP is multidisciplinary [7], in which treatment plans aiming to achieve pain relief, functional improvement, and minimization of absence from work can be formulated with the patient [8].

Unfortunately, published data on LBP in Cameroon are limited. Therefore, in this study, we aimed to describe the epidemiology, clinical patterns, and treatment modalities in patients presenting with LBP at the Kumba Regional Hospital Annex

(KRHA). This study was carried out at the KRHA because it is a recently upgraded regional hospital located in the Meme Division of the Southwest Region of Cameroon, which serves as a referral center to three other divisions. In addition, Kumba has a population of over 400,000 inhabitants, representing the largest in the Southwest Region, with inhabitants consisting mostly of farmers, petit traders, and laborers. Hence, this study helps to improve the management of these patients and provide information that adds to existing knowledge about LBP in our context.

## 2. Materials and Methods

We carried out a hospital-based cross-sectional descriptive study over four months, from December 1, 2023, to April 1, 2024. The study was carried out at the outpatient consultation department of KRHA. We targeted all adult patients presenting at the outpatient department using a consecutive, non-exhaustive sampling method. Patients were included if they were ≥18 years of age, presented with LBP at outpatient consultations during the study period, and provided consent to participate in the study. All pregnant women and patients with previous spine surgery were excluded from our analysis. Data were collected using a data entry form. The main variables included socio-demographic data (age, gender, marital status, occupation, address, level of education, religion, height, weight); relevant past history (history of neoplasm, systemic corticosteroid use, intravenous drug use, smoking, tuberculosis, post-menopausal, human immunodeficiency virus, prior lumbar surgery); clinical features of LBP (onset, duration, character, aggravating factors, relieving factors, intensity rated from 0 to 10 based on the Verbal Numeric Scale of Pain, level of activity compromise, neurologic symptoms); physical examination findings (deformity of the spine, tenderness in the lumbar area, other neurological findings), investigations requested (imaging: X-ray, computed tomography scan, magnetic resonance imaging of the lumbar spine; biological: Full Blood Count, Erythrocyte Sedimentation Rate, C-Reactive Protein, others), and details regarding the various treatment modalities.

Data collection and analysis: After drafting a concise research protocol, ethical clearance was requested from the institutional review board of the Faculty of Health Sciences, University of Buea. Administrative authorizations were obtained from the Regional Delegate for Health, Southwest Region, and the Director of the KRHA. Patients were received by the nurses at the outpatient department, their vital parameters taken, and major complaints requested. Those who presented with LBP as their chief complaint were then given an explanation of the aim and procedure of the study in English or pidgin English. Consent was requested and obtained from all participants. We then proceeded with the consultation and examination of the patients, during which a one-on-one interview was conducted with the help of a structured, pretested questionnaire. Based on the clinical symptoms presented by the patients and the physical examination, LBP was grouped into three different clinical patterns: Mechanical, Systemic, and Referred LBP, according to the criteria described in **Table 1**.

**Table 1.** Classification of clinical patterns of LBP based on symptoms and signs, as used for this study.

| Type | Clinical symptoms | Physical findings | Most probable clinical pattern |
|---|---|---|---|
| Features of the 1st Clinical Pattern | • Triggered by certain movements<br>• Improves with rest<br>• No constitutional symptoms<br>• ±Radiculopathy of the lower limbs<br>• No symptoms from other systems. | • Deformity on spine<br>• ±Tenderness in the lumbar area<br>• ±Positive straight leg test | Mechanical LBP: LBP from the spine and its surrounding structures |
| Features of the 2nd Clinical Pattern | • LBP at rest<br>• Constitutional symptoms<br>• Past medical history of cancer, TB, systemic diseases<br>• ± Radiculopathy of the lower limbs<br>• ± Symptoms from other systems | • ±Tenderness in the lumbar area<br>• Signs of systemic disease | Systemic LBP: Inflammatory, infectious, and metastasis of cancers to the spine through hematogenous spread |
| Features of the 3rd Clinical Pattern | • No constitutional symptoms<br>• Symptoms from the genitourinary and gastrointestinal systems<br>• No radiculopathy to the lower limbs. | • Tenderness on the abdomen or lower abdomen<br>• ±Costovertebral angle tenderness | Referred LBP: LBP not involving the spine and its surrounding structures; includes abdominal and gynecological pathologies. |

LBP: low back pain, Tb: tuberculosis.

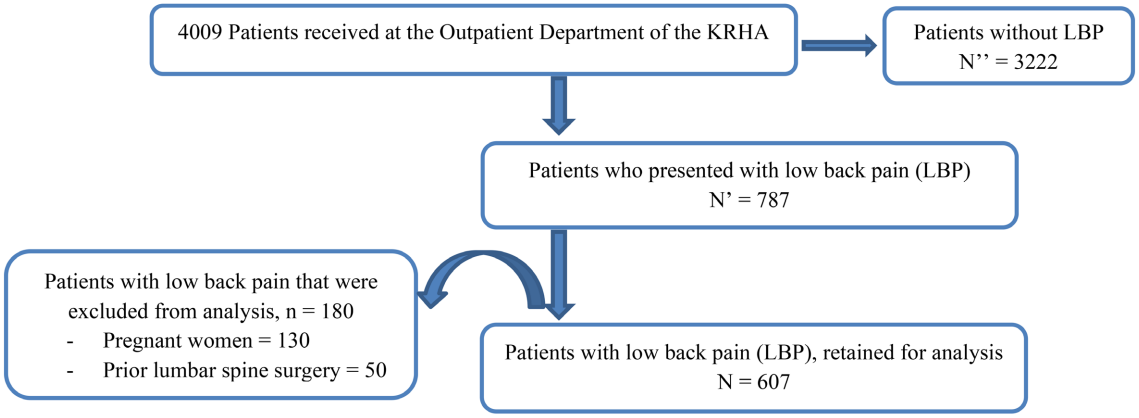
The treatment modalities for the patients were divided into three groups: pharmacological methods such as nonsteroidal anti-inflammatory drugs (NSAIDs), steroids, and muscle relaxants; non-pharmacological methods such as lifestyle modification and physical therapy/rehabilitation; and surgical methods. Data were collected daily, and then coded and entered into Microsoft Excel spreadsheets to ensure data completeness. The entered data were always cross-checked to minimize errors. The data were analyzed using Statistical Package for Social Sciences version 26.0. Prevalence was calculated as the proportion of the number of adult outpatients presenting with LBP to the total number of outpatient consultations during the study period multiplied by 100. The various clinical patterns were grouped into mechanical, systemic, and referred LBP. These variables are presented as frequencies and percentages. The factors associated with LBP were analyzed using a bivariate logistic regression model by comparing gender, age, occupation, and BMI between patients with LBP and those who consulted at the same period without LBP (obtained from consultation records/registers), and factors with a p-value of $<0.05$ at a 95% confidence interval were considered statistically significant.

## 3. Results

### 3.1. Prevalence of Low Back Pain

Out of the 4009 participants, 787 were reported to have LBP. Of these patients presenting with LBP, 180 were excluded from our analysis because they were either pregnant women or had undergone previous spine surgeries (**Figure 1**), leaving 607 patients with LBP for our final analysis and a hospital-based prevalence of LBP of

15.1% in the Outpatient Department of the Kumba Regional Hospital Annex.




LBP: Low Back Pain, OPD: Outpatient Department, KRHA: Kumba Regional Hospital Annex.

**Figure 1.** Recruitment flow chart.

### 3.2. Socio-Demographic Characteristics of Patients with Low Back Pain (LBP)

The mean age (±standard deviation, SD) of the 607 patients with LBP was 56.7 (±14.3) years. More than half of the participants were female (n = 353; 68%) with a sex ratio of 2:1, and the most common age group was >50 years (n = 386; 63.6%). Mean BMI (±SD) was 27.2 (±4.3) kg/m$^2$, with the majority of participants (n = 333; 54.9%) being overweight. Most participants reported that they were married (n = 532; 87.6%), and 249 patients (41.0%) had at least a primary-school education level. More than half (n = 408; 67.2%) of the participants were farmers (Table 2).

**Table 2.** Socio-demographic characteristics of patients with LBP (N = 607).

| Variable | Category | n (%) |
|---|---|---|
| Sex | Male | 254 (32.0) |
| | Female | 353 (68.0) |
| Age group (years) | ≤50 | 221 (36.4) |
| | >50 | 386 (63.6) |
| BMI | <18.5 (underweight) | 11 (1.8) |
| | 18.5 - 24.9 (normal weight) | 150 (24.7) |
| | 25 - 29.9 (overweight) | 333 (54.9) |
| | ≥30 (obese) | 113 (18.6) |
| Marital status | Married | 532 (87.6) |
| | Single | 75 (12.4) |
| Education | Primary school | 249 (41.0) |
| | Secondary school | 219 (36.1) |

**Continued**

| | | |
|---|---|---|
| | University | 57 (9.4) |
| | Did not go to school. | 82 (13.5) |
| Occupation | Farmer | 408 (67.2) |
| | Driver | 33 (5.4) |
| | Business | 95 (15.7) |
| | Teacher | 35 (5.8) |
| | Others | 36 (5.9) |
| Religion | Christian | 606 (99.8) |
| | Muslim | 1 (0.2) |

### 3.3. Clinical Patterns of Low Back Pain (LBP)

Mechanical LBP accounted for the vast majority of LBP cases (n = 576; 94.9%) (Table 3), with over 91% (n = 556) of the participants reporting chronic LBP lasting for >12 weeks (Figure 2).

Table 3. Patient distribution according to clinical patterns of LBP, as described in Table 1 (N = 607).

| Clinical pattern of LBP | n (%) |
|---|---|
| Mechanical | 576 (94.9) |
| Systemic | 11 (1.8) |
| Referred | 20 (3.3) |

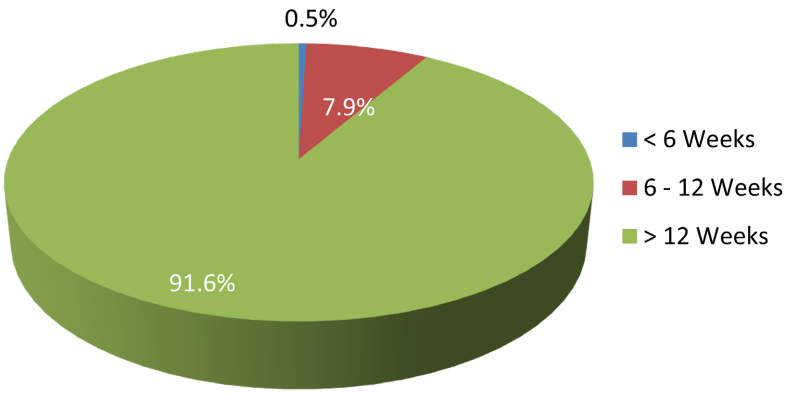



Figure 2. Duration of low back pain.

442 patients (76.7%) with mechanical LBP had radiculopathy, either crural or sciatic (Table 4).

### 3.4. Factors Associated with Low Back Pain

According to the bivariate analysis, female gender (OR: 1.48, 95% CI: 1.24 - 1.77), age of >50 years (OR: 3.8, 95% CI: 3.3 - 4.6), and a BMI of 25 - 29.9 kg/m$^2$ (OR: 3,

95% CI: 2.5 - 3.7) were all factors unadjustably identified to be significantly associated with the development of LBP (Table 5).

Table 4. Distribution of clinical patterns of low back pain according to the presence or absence of radiculopathy (N = 607).

| Clinical pattern | Number examined | Radiculopathy | |
|---|---|---|---|
| | | Yes n (%) | No n (%) |
| Mechanical | 576 (94.9) | 442 (76.7) | 134 (23.3) |
| Systemic | 11 (1.8) | 7 (63.6) | 4 (36.4) |
| Referred | 20 (3.3) | 0 (0.0) | 20 (100.0) |

Table 5. Factors unadjustably associated with the development of LBP according to bivariate analysis.

| Variable | LBP, n (%) | No LBP, n (%) | Bivariate logistic regression | |
|---|---|---|---|---|
| | | | p-value | OR (95% CI) |
| Gender | | | | |
| Female | 353 (18.5) | 1559 (81.5) | 0.004 | 1.48 (1.24 - 1.77) |
| Male | 254 (13.2) | 1663 (86.8) | Ref. | Ref. |
| Age group (years) | | | | |
| ≤50 | 221 (9.1) | 2207 (90.9) | Ref. | Ref. |
| >50 | 386 (27.6) | 1015 (72.4) | <0.00001 | 3.8 (3.3 - 4.6) |
| Occupation | | | | |
| Farmer | 408 (16.2) | 2107 (83.8) | 0.07 | (1) |
| Driver | 33 (15.1) | 186 (84.9) | 0.74 | 0.94 (0.64 - 1.38) |
| Business | 95 (11.9) | 701 (88.1) | 0.35 | 0.67 (0.53 - 0.85) |
| Teacher | 35 (31.0) | 78 (69.0) | <0.00001 | 2.47 (1.64 - 3.71) |
| Others | 36 (19.4) | 150 (80.6) | Ref. | Ref. |
| BMI (Kg/m$^2$) | | | | |
| Obese (>30) | 113 (18.0) | 516 (82.0) | 0.13 | 1.2 (0.96 - 1.50) |
| Overweight (25 - 29.9) | 333 (25.1) | 1024 (74.9) | <0.001 | 3 (2.5 - 3.7) |
| Normal (18.5 - 24.9) | 150 (8.2) | 1682 (91.8) | Ref. | Ref. |
| Underweight (<18.5) | 11 (0) | 0 (0) | | |

LBP: Low back pain, BMI: Body mass index, OR: Odds ratio, CI: Confidence interval.

### 3.5. Treatment of Low Back Pain (LBP)

Pharmacological treatment modalities showed that NSAIDs were prescribed to all patients who presented with low back pain. Weak opioids and muscle relaxants were also prescribed in over 95% and 94% of cases, respectively. The most com-

monly reported non-pharmacological treatment modality was lifestyle modification, which was recommended to 98.0% of patients (Table 6). No patients were operated upon at our study site, and less than 10% of patients who presented with LBP were referred to higher facilities in other towns for more specialized management procedures (Figure 3).

Table 6. Treatment modalities of low back pain (LBP) (N = 607).

| Treatment modality | | Effective, n | % |
|---|---|---|---|
| Pharmacological | NSAIDs | 607 | 100.0 |
| | Steroids | 14 | 2.3 |
| | Opioids | 580 | 95.6 |
| | Muscle relaxants | 576 | 94.9 |
| Non-Pharmacological | Physiotherapy | 19 | 3.1 |
| | Back support measures | 3 | 0.5 |
| | Lifestyle modification | 595 | 98.0 |
| Surgery | | 0 | 0.0 |

NSAIDs: nonsteroidal anti-inflammatory drugs.

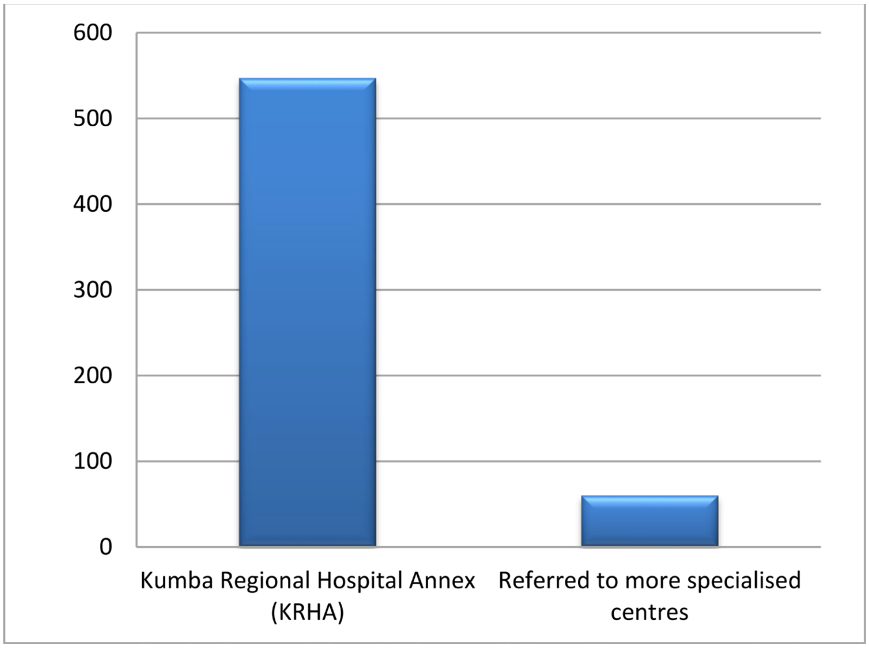



Figure 3. Place of low back pain management (N = 607).

## 4. Discussion

This study aimed to determine the prevalence of low back pain (LBP), describe its most common clinical patterns, identify the factors associated with the development of LBP, and describe the treatment modalities of LBP in adult non-pregnant outpatients consulting at the Outpatient Department of the Kumba Regional Hos-

pital Annex, a resource-limited setting in the South-west Region of Cameroon.

In this study, the prevalence of LBP was found to be 15.1% in non-pregnant out patients, similar to that reported by Doualla and collaborators in Douala, Cameroon [5] and that reported in Ghana (15.7%) [9]. However, our reported prevalence was lower than those reported in Nigeria, Rwanda, Ethiopia and Bamenda (46.8%, 55.4%, 66.1%, and 36.1%, respectively) [10]-[13]. These discrepancies are most likely due to differences in study designs, target population included, and differences in study settings.

The most common clinical pattern observed was mechanical LBP (94.9%), similar to what was described in studies from the Netherlands (90.0%) and India (95.0%) [14] [15]. In this study, 91.6% of patients presented with LBP with a duration of >12 weeks (chronic), which was similar to results from a study in Nigeria [16]. Radicular neuropathic pain to the lower limbs was found in 76.7% of the participants, which was lower than that found in Tanzania (84.2%) but higher than that found in Nigeria (32.5%) [16]. The neuropathic component of chronic LBP can be caused by a nociceptive stimulus related to nerve sprouting inside degenerated vertebral discs, mechanical compression of the nerve root, and release of inflammatory mediators by injured discs but with no mechanical involvement [17].

On bivariate analysis, the female gender, age > 50 years, and BMI > 25 kg/m$^2$ were unadjustably significantly associated with LBP. These findings were similar to those of studies done in Douala, Cameroon, India, Ethiopia, and Kuwait [5] [13] [18] and [19]. In this study, female gender was associated with developing LBP (OR 1.48, 95% CI 1.24 - 1.77), similar to findings from Southwest Nigeria, China, Ethiopia, and Iran [20]-[23]. This gender-based difference can be explained by the fact that related conditions specific to women, such as premenstrual syndrome, premenstrual dysmorphic disorder, and dysmenorrhea, could mimic certain clinical presentations of LBP [24]. Furthermore, heightened pain sensitivity among women, menstrual cycle fluctuations, biological response to pregnancy and childbearing, and the physical stress of child-raising may make women more prone to LBP compared to men [25]. However, our findings were in sharp contrast with those of other studies in which the male gender was found to be associated with LBP [17] [26] and [27].

Furthermore, in our study, a BMI of >25 kg/m$^2$ was also found to be unadjustably significantly associated with LBP (OR: 3, 95%CI: 2.5 - 3.7), the same as seen in a study carried out in Southern Nigeria [9]. One explanation for this association is that a gain in mass in the upper body area due to overweight could increase the load on the vertebral discs, leading to LBP development. In contrast, one study conducted in Malaysia revealed that BMI had no significant association with LBP [6].

Moreover, we found that patients aged >50 years were at greater unadjusted odds (OR: 3.8, 95% CI: 3.3 - 4.6) for developing LBP than younger patients, similar to findings in studies conducted in Brazil and China [26] [28]. An observation noted in a study carried out in Nigeria found that aging increases the risk of LBP due to senile spinal degeneration processes that accompany increased age [9]. In

contrast, some studies conducted in Ethiopia and Nigeria found no association between age and the development of LBP [18] [20].

Finally, our results showed that professions requiring manual labor such as farming were not associated with developing LBP ($p = 0.07$), contrary to findings obtained in studies done in Southwest Nigeria and Brazil [15] [29]. These authors explained that, due to the working postures and movements of the lower back during the work process, load is generated on the lumbar region, which can overload tissues and exceed their thresholds of tolerable stress, causing injury due to overexertion or imbalance. These conflicting results are mainly attributed to our relatively smaller sample size and to the differences in the various study designs, which were either prospective cohort designs or case-control studies, compared to our cross-sectional design.

Treatment modalities of low back pain: Over 90% of patients with low back pain were managed in the limited resource setting of the Kumba Regional Hospital Annex, without needing any further, more specialized procedures or referrals to higher level health facilities. The most common treatment modalities employed were pharmacological (NSAIDs, weak opioids, myorelaxants) and non-pharmacological (modification of activities of daily living and physical therapy). Similar results have been reported in Rwanda and the United Kingdom [10] [17].

Less than 10% of the patients with low back pain needed more specialized medical management and care at higher healthcare facilities in other towns.

## 5. Conclusion

The prevalence of LBP is high (15.1%) in outpatient consultations, with the most common clinical pattern being chronic mechanical LBP associated with bilateral sciatica and paresthesia. The main factors unadjustably associated with the development of LBP were female gender, age of >50 years, and a BMI of ≥25 kg/m$^2$. The most common treatment modalities were lifestyle modification and prescription of NSAIDs in combination with weak opioids and myorelaxants. Therefore, proper understanding of factors associated with low back pain and an appropriate management approach will better curb this very frequent health challenge in local resource-limited areas.

## 6. Limitations of Our Study

Our study was a single-centered, cross-sectional study, using a proposed clinical description of low back pain based on symptoms/signs without any radiologic confirmation. Also, the non-exhaustive sampling method constitutes a limitation in our study. The factors unadjustably associated with LBP were evaluated only using the bivariate regression model; multivariate analysis was not done to rule out confounders.

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## Authors' Contributions

All authors have reviewed the final version to be published and agree to be accountable for all aspects of the work.

**Concept and design:** Ernest K. Ndifor, Ashley Vera, Bokwe Melissa.

**Acquisition, analysis, or interpretation of data:** Ernest K. Ndifor, Ashley Vera

**Drafting of the manuscript:** Ernest K. Ndifor, Nana Theophile, Ashley Vera, Bokwe Melissa, Fokam Pius.

**Critical review of the manuscript for important intellectual content:** Ernest K. Ndifor, Nana Theophile, Itambi Maxwell, Dora Makia, Marc L. Guifo, Fokam Pius.

**Supervision:** Marc L. Guifo, Fokam Pius.

## Disclosures

Informed consent for treatment and open access publication was obtained or waived by all participants in this study. The Faculty of Health Sciences Institutional Review Board issued approval 2023/21811/UB/SG/IRB/FHS. After drafting a concise research protocol, ethical clearance and administrative authorizations from the Regional Delegate for Health Southwest Region, the Dean of the Faculty of Health Sciences, University of Buea, and the Director of the Kumba Regional Hospital Annex were obtained.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

[1] Hartvigsen, J., Hancock, M.J., Kongsted, A., Louw, Q., Ferreira, M.L., Genevay, S., *et al.* (2018) What Low Back Pain Is and Why We Need to Pay Attention. *The Lancet*, **391**, 2356-2367. https://doi.org/10.1016/s0140-6736(18)30480-x

[2] Ferreira, M.L., de Luca, K., Haile, L.M., *et al.* (2023) Global, Regional, and National Burden of Low Back Pain, 1990-2020, Its Attributable Risk Factors, and Projections to 2050: A Systematic Analysis of the Global Burden of Disease Study 2021. *The Lancet Rheumatology*, **5**, e316-e329.

[3] Kahere, M., Hlongwa, M. and Ginindza, T.G. (2022) A Scoping Review on the Epidemiology of Chronic Low Back Pain among Adults in Sub-Saharan Africa. *International Journal of Environmental Research and Public Health*, **19**, Article 2964. https://doi.org/10.3390/ijerph19052964

[4] Louw, Q.A., Morris, L.D. and Grimmer-Somers, K. (2007) The Prevalence of Low Back Pain in Africa: A Systematic Review. *BMC Musculoskeletal Disorders*, **8**, Article No. 105. https://doi.org/10.1186/1471-2474-8-105

[5] Doualla, M., Aminde, J., Aminde, L.N., Lekpa, F.K., Kwedi, F.M., Yenshu, E.V., *et al.* (2019) Factors Influencing Disability in Patients with Chronic Low Back Pain Attending a Tertiary Hospital in Sub-Saharan Africa. *BMC Musculoskeletal Disorders*,

**20**, Article No. 25. https://doi.org/10.1186/s12891-019-2403-9

[6] Abas, A.H., Daud, A., Mohd Hairon, S. and Shafei, M.N. (2023) Prevalence and Risk Factors of Low Back Pain in Malaysia: A Scoping Review. *Malaysian Journal of Medical Sciences*, **30**, 32-41. https://doi.org/10.21315/mjms2023.30.3.3

[7] Nyiendo, J., Haas, M., Goldberg, B. and Sexton, G. (2001) Pain, Disability, and Satisfation Outcomes and Predictors of Outcomes: A Practice-Based Study of Chronic Low Back Pain Patients Attending Primary Care and Chiropractic Physicians. *Journal of Manipulative and Physiological Therapeutics*, **24**, 433-439. https://doi.org/10.1016/s0161-4754(01)77689-0

[8] See, Q., Tan, B. and Kumar, D. (2021) Acute Low Back Pain: Diagnosis and Management. *Singapore Medical Journal*, **62**, 271-275. https://doi.org/10.11622/smedj.2021086

[9] Muly, M.M., Shah, H. and Shaikh, A. (2021) Association of Mechanical Low Back Pain and Quality of Life in Security Guards. *International Journal of Health Sciences and Research*, **11**, 153-156. https://doi.org/10.52403/ijhsr.20210420

[10] Ogunsanya, G.I. (2020) Prevalence and Associated Factors of Low Back Pain in an Urban Nigerian Community. *Revista Pesquisa em Fisioterapia*, **10**, 599-609. https://doi.org/10.17267/2238-2704rpf.v10i4.3206

[11] Paul, N. (2011) The Prevalence and Management of Low Back Pain among High school Children in Nyamasheke District, Rwanda. In: Frantz, J., Ed., *ETD-Repository*, *University of the Western Cape*, UWCScholar.

[12] Jegnie, M. and Afework, M. (2021) Prevalence of Self-Reported Work-Related Lower Back Pain and Its Associated Factors in Ethiopia: A Systematic Review and Meta-analysis. *Journal of Environmental and Public Health*, **2021**, Article ID: 633271. https://doi.org/10.1155/2021/6633271

[13] Bassong, P.Y., Magang Sado, A.D., Nguemaïm Ngoufo, F., Laah Njoyo, S. and Kamga, H.L. (2019) Prevalence of Low Back Pain and Associated Risk Factors in Health Workers of Bamenda Health District-Cameroon. *Journal of the Neurological Sciences*, **405**, Article 135. https://doi.org/10.1016/j.jns.2019.10.1831

[14] Omoke, N. and Amaraegbulam, P. (2016) Low Back Pain as Seen in Orthopedic Clinics of a Nigerian Teaching Hospital. *Nigerian Journal of Clinical Practice*, **19**, 212-217. https://doi.org/10.4103/1119-3077.175964

[15] Ogunbode, A.M., Adebusoye, L.A. and Alonge, T.O. (2013) Prevalence of Low Back Pain and Associated Risk Factors Amongst Adult Patients Presenting to a Nigerian Family Practice Clinic, a Hospital-Based Study. *African Journal of Primary Health Care & Family Medicine*, **5**, Article No. 441. https://doi.org/10.4102/phcfm.v5i1.441

[16] Freynhagen, R. and Baron, R. (2009) The Evaluation of Neuropathic Components in Low Back Pain. *Current Pain and Headache Reports*, **13**, 185-190. https://doi.org/10.1007/s11916-009-0032-y

[17] Macfarlane, G.J., Beasley, M., Jones, E.A., Prescott, G.J., Docking, R., Keeley, P., *et al.* (2012) The Prevalence and Management of Low Back Pain across Adulthood: Results from a Population-Based Cross-Sectional Study (The MUSICIAN Study). *Pain*, **153**, 27-32. https://doi.org/10.1016/j.pain.2011.08.005

[18] Workneh, B.S. and Mekonen, E.G. (2021) Prevalence and Associated Factors of Low Back Pain among Bank Workers in Gondar City, Northwest Ethiopia. *Orthopedic Research and Reviews*, **13**, 25-33. https://doi.org/10.2147/orr.s300823

[19] Akrouf, Q.A.S., Crawford, J.O., Al Shatti, A.S. and Kamel, M.I. (2010) Musculoskeletal Disorders among Bank Office Workers in Kuwait. *Eastern Mediterranean Health*

*Journal*, **16**, 94-100. https://doi.org/10.26719/2010.16.1.94

[20] Akodu, A.K., Okafor, U.A.C. and Adebayo, A.V. (2016) Prevalence of Low Back Pain among Filling Stations Attendants in Lagos, Southwest Nigeria. *African Journal of Biomedical Research*, **19**, 109-115.

[21] Wáng, Y.X.J., Wáng, J. and Káplár, Z. (2016) Increased Low Back Pain Prevalence in Females than in Males after Menopause Age: Evidences Based on Synthetic Literature Review. *Quantitative Imaging in Medicine and Surgery*, **6**, 199-206. https://doi.org/10.21037/qims.2016.04.06

[22] Deksisa Abebe, A. (2015) Prevalence of Low Back Pain and Associated Risk Factors among Adama Hospital Medical College Staff, Ethiopia. *European Journal of Preventive Medicine*, **3**, 188-192. https://doi.org/10.11648/j.ejpm.20150306.15

[23] Biglarian, A., Seifi, B., Bakhshi, E., Mohammad, K., Rahgozar, M., Karimlou, M., *et al.* (2012) Low Back Pain Prevalence and Associated Factors in Iranian Population: Findings from the National Health Survey. *Pain Research and Treatment*, **2012**, Article ID: 653060. https://doi.org/10.1155/2012/653060

[24] (2023) What Can Cause Lower Back Pain in Women? http://www.healthline.com/health/lower-back-pain-causes-female

[25] Ghaffar, T., Sultan, S., Khalid, A., Anjum, H., Irum, A., Fawad, M., *et al.* (2023) Association of Low Back Pain with Body Mass Index and Stress among House Officers in Different Rotational Placements. *THE THERAPIST* (*Journal of Therapies & Rehabilitation Sciences*), **4**, 52-56. https://doi.org/10.54393/tt.v4i1.114

[26] de Souza, I.M.B., Merini, L.R., Ramos, L.A.V., Pássaro, A.d.C., França, J.I.D. and Marques, A.P. (2021) Prevalence of Low Back Pain and Associated Factors in Older Adults: Amazonia Brazilian Community Study. *Healthcare*, **9**, Article 539. https://doi.org/10.3390/healthcare9050539

[27] Keawduangdee, P., Puntumetakul, R., Swangnetr, M., Laohasiriwong, W., Settheetham, D., Yamauchi, J., *et al.* (2015) Prevalence of Low Back Pain and Associated Factors among Farmers during the Rice Transplanting Process. *Journal of Physical Therapy Science*, **27**, 2239-2245. https://doi.org/10.1589/jpts.27.2239

[28] Jia, N., Zhang, M., Zhang, H., Ling, R., Liu, Y., Li, G., *et al.* (2022) Prevalence and Risk Factors Analysis for Low Back Pain among Occupational Groups in Key Industries of China. *BMC Public Health*, **22**, Article No. 1493. https://doi.org/10.1186/s12889-022-13730-8

[29] Bento, T.P.F., Genebra, C.V.D.S., Maciel, N.M., Cornelio, G.P., Simeão, S.F.A.P. and Vitta, A.D. (2020) Low Back Pain and Some Associated Factors: Is There Any Difference between Genders? *Brazilian Journal of Physical Therapy*, **24**, 79-87. https://doi.org/10.1016/j.bjpt.2019.01.012