International Journal of Multidisciplinary Research and Publications
ISSN (Online): 2581-6187

Low Back Pain and Work: Crushing effects in some Companies in Yaounde-Cameroon

Ekwin Francis Tabe[1], Njeugna Mireille[2], Tagne Jules Célestin[3]
[1]Health Sciences, Protestant University, Central Africa, Yaounde, Cameroon-4011
[2]Health Sciences, Protestant University, Central Africa, Yaounde, Cameroon-4011
[3]Health Sciences, Protestant University, Central Africa, Yaounde, Cameroon-4011
Email address: [1]ekwintabe@yahoo.fr, [2]mireillenjeugna@yahoo.fr, [3]tajuce@yahoo.fr

Abstract— *Low back pain is any discomfort or pain in the lower back. It is one of the causes of medical consultations and absenteeism from work. The worldwide prevalence of low back pain varies from 23% to 84%; its risk factors also vary. Absenteeism due to low back pain can be as high as 35%. Given the extent of low back pain and the unavailability of local data, we assessed the prevalence of low back pain in a Cameroonian working population. Specifically, we: determined the profile of workers, identified risk factors and determined the rate of absenteeism due to low back pain. We conducted a survey in several companies located in Yaounde. Authorizations were obtained prior to enrolment. We enrolled participants in May (23, 25, 26, 30, 31) and June (01, 12, 19, 23) 2023. Explanations were given to all participants before the survey; those who agreed were given the modified Nordic questionnaire model to fill in. Completed questionnaires were checked and those not consistent were rejected. Epi Info 7.2.5.0 was used for analysis. All missing data were taken into account. The low-back pain prevalence of 81.6% that we obtained is lower than that of other studies. This difference can be explained by the instability of low-back pain and bias in the studies. At least 10% of workers had other musculoskeletal disorders; over 50% were overweight. Risk factors identified: poor posture, body mass index greater or equal to 25Kg/m2, constitutional diseases and irregular working hours. Days lost per year was 204 days; average absenteeism rate was 0.5%. In conclusion, work-related low back pain has risk factors and is a source of absenteeism with reduced productivity, hence the importance of measuring its extent through prevalence studies.*

Keywords— *Absenteeism;low back pain;Prevalence; risk factors.*

I. Introduction

Low back pain is any discomfort or pain in the lower back; varying in intensity, duration and extent. Low back pain is one of the main causes of emergency medical consultations[1, 2,3]. In the workplace, low back pain is one of the main causes of absenteeism[3]. On an individual level, low back pain is a source of reduced quality of life due to chronic pain which hampers activities of daily living: walking, showering, etc., and can even lead to job loss [2,3]. In terms of numbers, almost 4 out of 5 people will suffer from low back pain at some point in their lives; around 20% of accidents at work are triggered by low back pain in manual workers; and absenteeism from work due to low back pain can be as high as 35% [1,4].

Numerous studies have estimated the worldwide prevalence of low back pain in adults at 23%, 39%, 54.5%, and 84% [3,5]. In our Cameroonian context, with few data at our disposal and knowing the importance of prevalence studies[6] and that there are several risk factors for the development of low back pain, we assessed the prevalence of low back pain in a population of Cameroonian workers[7].Our specific objectives were: to provide a profile of workers suffering from low back pain, to determine the risk factors for low back pain, and to evaluate the rate of absenteeism due to low back pain.

II. Methods

We conducted a descriptive cross-sectional study in a number of companies located in Yaoundé. These companies are involved in the sale and distribution of products (food, office, and beauty), translation of religious works and fire safety services. The recruitment of participants within the companies took place on May (23, 25, 26, 30 and 31) 2023 and June (01, 12, 19 and 23) 2023. The inclusion criterion was any worker who agreed to take part in the study at the time of our visit in the company. We obtained verbal authorization from the company managers one week before the survey, and agreed with the human resources managers on the survey dates. On the day of the survey, we explained to the participants how to fill in the survey form. We used the French version of the modified model of the Nordic-type questionnaire[8] for the survey. We distributed these questionnaires to participants who gave their informed consent. All completed questionnaires were returned to us within 2 hours. We created a data entry form in Microsoft Excel and the data was entered into this Excel form and imported into Epi Info version 7.2.5.0 for analysis.

III. Results

A total of 171 questionnaires were distributed, 162 were completed and returned,12 completed questionnaires were rejected for lack of consistency. We analyzed 150 questionnaires. Missing data in the 150 questionnaires analyzed were taken into account in the analysis.

1. Prevalence of low back pain

The prevalence of low back pain in the last 7 days was 44.0% (66/150), with a female predominance of 26.0% (39/150). The point prevalence of low back pain was 42.0% (63/150), with a female predominance of 22.0% (33/150).
The prevalence of low back pain in the last 12 months was 62.0% (93/150), with a female predominance of 32.0%(48/150). The prevalence of low-back pain at least once in a lifetime was 81.6% (120/147), with a male predominance of 42.8% (63/147).

Ekwin Francis Tabe, Njeugna Mireille, and Tagne Jules, "Low Back Pain and Work: Crushing effects in some Companies in Yaounde-Cameroon," *International Journal of Multidisciplinary Research and Publications (IJMRAP)*, Volume 6, Issue 3, pp. 35-39, 2023.

2. Profile of workers with low-back pain at least once in their lives (N=147)

TABLE 1: Profile of workers with low-back pain at least once in their lives (N=147)

Variable		Frequency
Sex	Male	63(42.8%)
	Female	57(38.8%)
Age (Years)	18-28	33(22.4%)
	29-38	57(38.8%)
	39-48	24(16.3%)
	49-58	3(2.0%)
Body mass index (kg/m^2)	18.5-24.9	21(14.3%)
	25.0-29.9	51(34.7%)
	≥30	18(12.2%)
Nature of duty post	Manual workers	30(20.4%)
	Office work with a screen interface	57(38.8%)
	Driver	6(4.1%)
	Prolonged standing position	27(18.4%)
Domestic or/and farm work at least once a week	Yes	12(8.2%)
	No	108(73.5%)
Length of service (years)	<1	33(22.4%)
	1-5	36(24.5%)
	6-10	33(22.4%)
	11-15	6(4.1%)
	>15	9(6.1%)
Number of hours of work per week	≤48	48(32.7%)
	49-61	36(24.5%)
	62-74	33(22.4%)
	75-87	3(2.0%)
Number of days of work per week	05	15(10.2%)
	06	99(67.3%)
	07	06(4.1%)
Work schedule	Regular	96(65.3%)
	Irregular	24(16.3%)
Requested for help in last 12 months to ease low back discomfort/pain (from health worker or other professionals)	Yes	9(6.1%)
	No	102(69.4%)

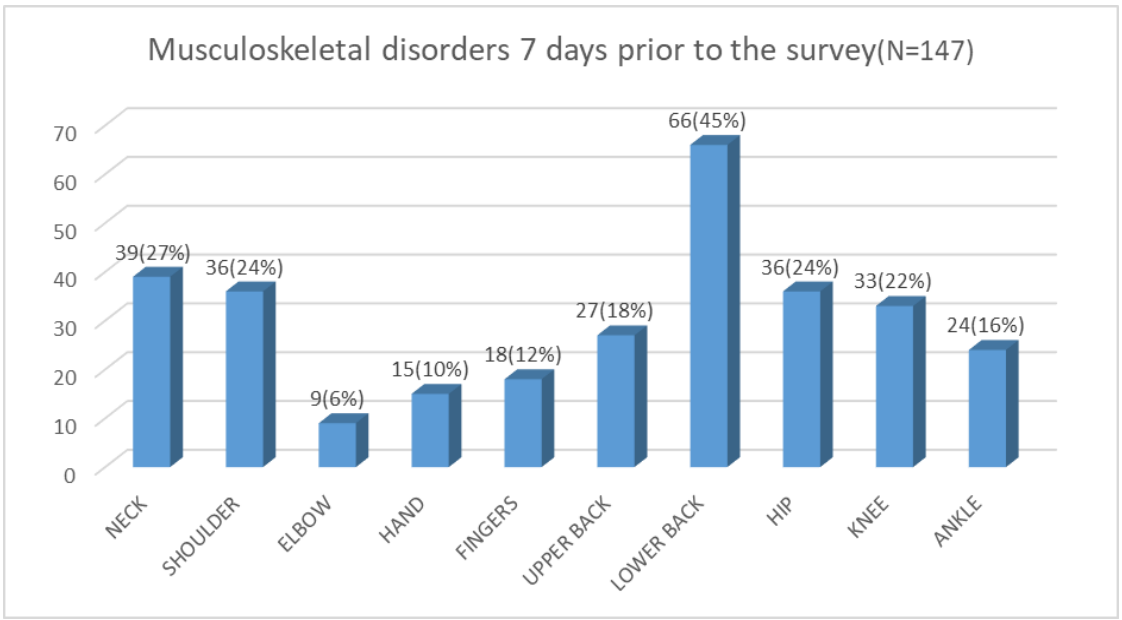

Figure 1: Musculoskeletal disorders 7 days prior to the survey

Ekwin Francis Tabe, Njeugna Mireille, and Tagne Jules, "Low Back Pain and Work: Crushing effects in some Companies in Yaounde-Cameroon," *International Journal of Multidisciplinary Research and Publications (IJMRAP)*, Volume 6, Issue 3, pp. 35-39, 2023.

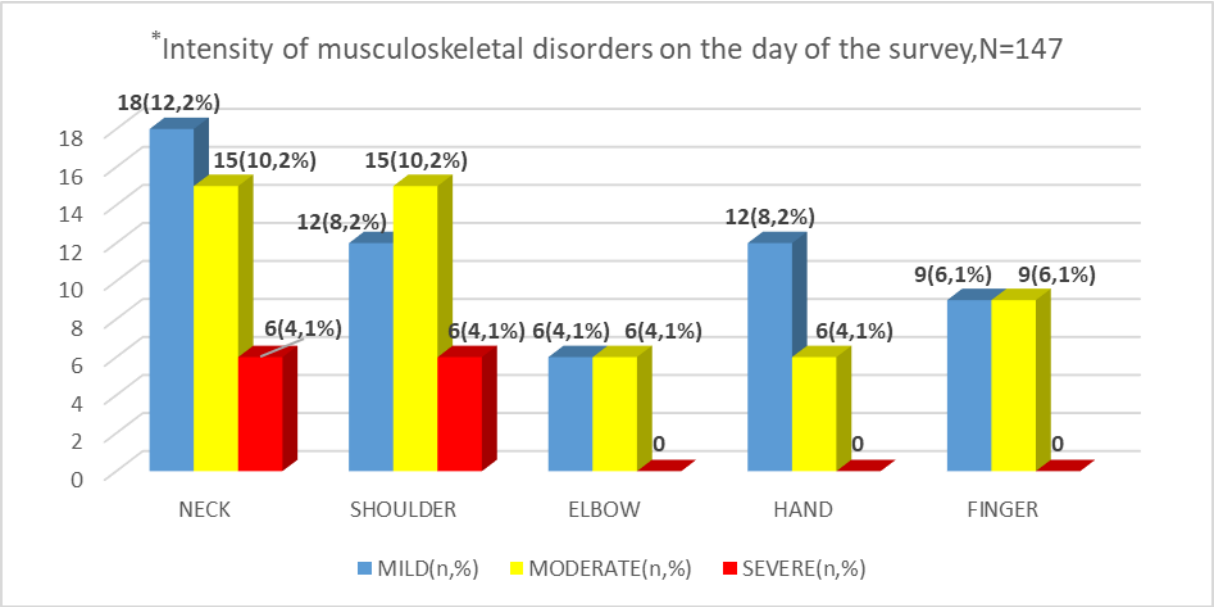

Figure 2(a): Intensity of musculoskeletal disorders on the day of the survey
*On a scale of 0 to 10; Mild=1 to 4, Moderate=5 to 7, Severe=8 to 10.

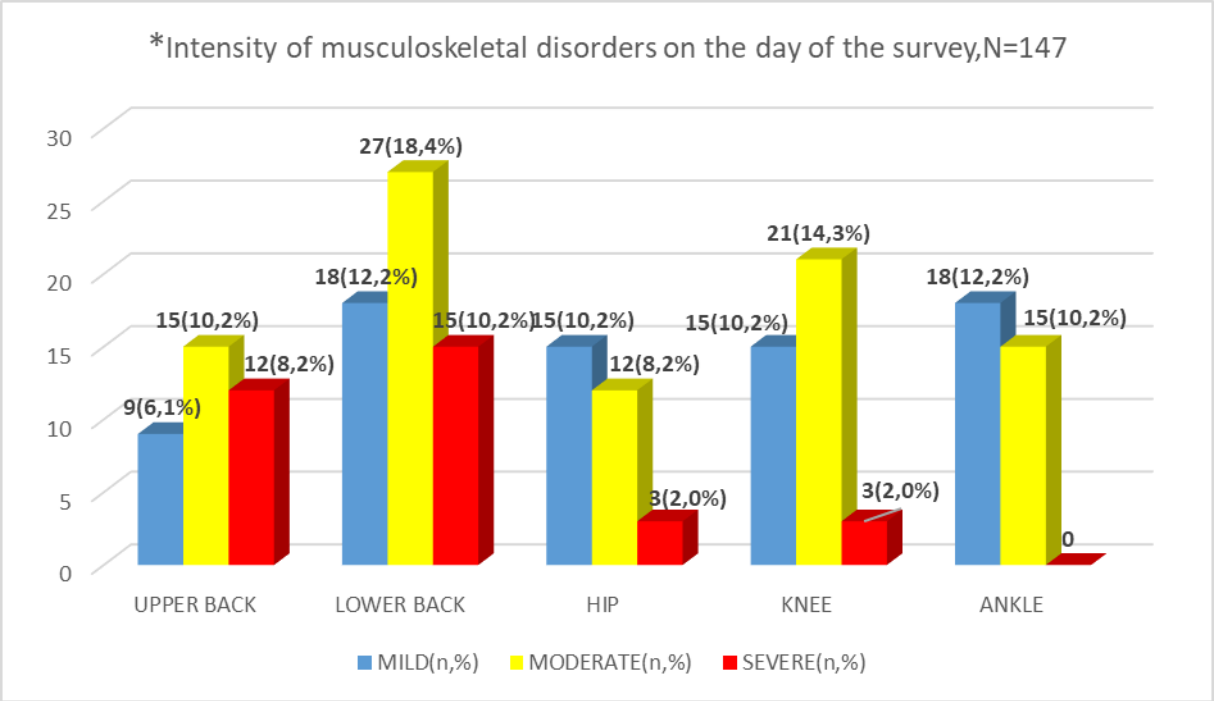

Figure 2(b): Intensity of musculoskeletal disorders on the day of the survey
*On a scale of 0 to 10; Mild=1 to 4, Moderate=5 to 7, Severe=8 to 10.

3. *Risk factors for low back pain*

TABLE 2: Workers with at least one episode of low-back pain in their lifetime and risk factors for low-back pain

At least one episode of low back pain in life	Risk factor present	Risk factor absent	Odds ratio	FISCHER test	P value
Poor postures					
Yes	84	36	1,2	0,82	>0.05
No	18	9			
Body mass index≥25					
Yes	75	27	2,1	0,19	>0.05
No	12	9			
Constitutional disease					
Yes	9	110	2,2	0,69	>0.05

No	1	27			
Past history of back injury					
Yes	9	106	0,5	0,34	>0.05
No	2	12			
Work≥ 10 hours per day					
Yes	87	33	0,3	0,09	>0.05
No	24	3			
Work ≥48 hours per week					
Yes	72	48	1,2	0,67	>0.05
No	15	12			
Irregular work schedule					
Yes	24	93	2,3	0,29	>0.05
No	3	27			
Number of child births≥3					
Yes	30	27	1,1	1,0	>0.05
No	3	3			

4. Absenteeism due to low back pain

TABLE 3: Absenteeism due to low-back pain (N=147)

Variable		Frequency
Change of job in last 12 months because of low back pain	Yes	18(12.24 %)
	No	102(69.39%)
Reduction in work activities during last 12 months	Yes	60(40.81%)
	No	57(38.78%)
Number of days of absence from work in last 12 months	0	48(32.65%)
	1 à 7	*45(30.61%)
	8 à 30	*12(8.16%)
	>30	*6(4.08%)

*The mean number of days lost~204 days in last 12 months
* Mean rate of absenteeism~0.5% in last 12 months.

IV. Discussion

The prevalence of 07-day low back pain of 44.0% that we obtained was higher than that obtained by Mihretu *and* Mekbeb in Ethiopia (37.48%) [5]. This difference may be attributed to the study design, as Mihretu *and* Mekbeb's study was a systematic review of several studies that included workers from several job categories (healthcare, hairdressers, automobiles, stone jammers) [5].Our point prevalence (42.0%) was higher than that of Mihretu and Mekbeb (32.0%)[5] and Mohamed Elleuch et al (20.0%)[7].Our annual prevalence of low back pain (62.0%) was higher than that of several studies: Mohamed Elleuch et al(30.0%)[7], Mihretu and Mekbeb (38.0%)[5] and J. Gourmelen et al (50.0%)[9].The prevalence of low back pain at least once in a lifetime that we obtained (81.6%) is lower than that obtained by Mihretu and Mekbeb(84%)[5] and Mohamed Elleuch et al(85%)[7] but higher than that obtained by Vincent E. Casiano (33%)[3] and France's National Institute of Research and Safety(80%)[1]. All these differences in prevalence in these studies can be explained by the unstable nature of low back pain, bias in study methodology (surveys), different methodologies (systematic reviews, surveys), the nature of occupational activities, the diversity of risk factors, the country of study and the episodic nature of low back pain[5,6,7,9].Males (42.8%) were the most affected by low back pain, and the most affected age group was the 29 to 38 year age group (38.8%).More than half of those with low back pain were overweight (body mass index>25 Kg/m2). Office work with screens as one of the tools was the type of occupational activity mostly affected by low back pain. Workers with 1 to 10 years seniority were the most affected by low back pain. Workers who worked more than 48 hours a week were the most affected. Workers with a regular work schedule were the most affected. More than two-thirds of workers suffering from low-back pain do not seek help from a health facility or other professionals. It should be noted that at least 10% of workers with low back pain had other musculoskeletal disorders in different areas of the body (neck, shoulder, hand, finger, upper back, hip, knee and ankle).Workers who adopt poor postural hygiene (e.g. material handlers, hostesses, billing agents, accountants, housekeepers) were 1.2 times more likely to develop low back pain than those without this risk factor (e.g. saleswomen, supervisors, warehouse managers, marketing managers, Human resource managers). Our results are similar to those of Mihretu and Mekbeb, who found an Odds ratio of 2.97[5] and Mohamed *et al* who demonstrated this as a risk factor[7].Workers with body mass index>25kg/m^2 were 2.1 times more likely to develop low back pain than those with body mass index < 25 Kg/m^2. This result is similar to that of Mihretu and Mekbeb, who obtained an odds ratio of 1.62[5]. Workers with a constitutional disease (Glucose-6-phosphate Dehydrogenase deficiency, herniated disc) were 2.2 times more likely to develop low back pain than those without this risk factor. Our results are similar to those of Mihretu and Mekbeb, who obtained an odds ratio of 5.06[5]. Working more than 48 hours a week was 1.2 times more likely to cause low back pain. Our results are similar to those obtained by Mihretu and Mekbeb (odds ratio=2.69)[5]. Irregular working hours were 2.3 times more likely to cause low back pain; this result is close to that obtained by Mihretu and Mekbeb (odds ratio=1.61)[5]. Women with at least 03 child deliveries were 1.1 times more likely to develop low back pain than those without 03 deliveries. This result is close to that obtained by Vincent E. Casiano et al, who identified childbirth as a risk factor for low back pain[3].

Ekwin Francis Tabe, Njeugna Mireille, and Tagne Jules, "Low Back Pain and Work: Crushing effects in some Companies in Yaounde-Cameroon," *International Journal of Multidisciplinary Research and Publications (IJMRAP)*, Volume 6, Issue 3, pp. 35-39, 2023.

We also found that low back pain is a source of job change (more than 10%), reduced professional activity (40%) and absenteeism from work (90%), all of which lead to loss of skills, longer lead times and delivery of products to customers, loss of customer confidence and a damaged brand if the situation persists.

In conclusion, low back pain is a prevalent symptom in the workplace. If nothing is done, almost half of the working population will experience episodes of low-back pain, as the presence of risk factors obliges them to do. The consequences of low back pain include inconvenience, discomfort, workplace accidents, occupational illnesses, absenteeism and job loss.

ACKNOWLEDGMENT

The authors wish to extend their sincere gratitude to the board of Directors of Bethesda Hospital, New Road Bastos Yaounde-Cameroon. The board of directors authorised the authors to put in time destined for hospital activities and hospital resources (office equipment and consumables) for this survey to be carried out.

REFERENCES

[1] Lower back pains; understand them, prevent them [French]. National Institute of research and prevention of work related accidents and diseases.65, boulevard Richard-Lenoir 75011 Paris. (Online-accessed on 17 May 2023). www.inrs.fr

[2] Back pain: symptoms, causes, treatment and prevention [French].VIDAL. (Online-accessed on May 17, 2023) https://www.vidal.fr/imprimer/maladies/appareil-locomoteur/mal-dos-lombalgie.html

[3] Back Pain.Vincent E. Casiano, Gurpreet Sarwan, Alexander M. Dydy, Matthew Varacallo . NCBI Bookshelf. A service of the National Library of Medicine, National Institutes of Health. StatPearls [IOnlinet-accessed on 17 May 2023] .https://creativecommons.org/licenses/by-nc-nd/4.0/

[4] Rheumatic diseases and work. Dr MC Gaye Fall. Lectures on Health at Work (2013/2014 school year). Cheikh Anta Diop University, Dakar-Senegal

[5] Prevalence of Self-Reported Work-Related Lower Back Pain and Its Associated Factors in Ethiopia: A Systematic Review and Meta-Analysis. Mihretu Jegnie and Mekbeb Afework. Hindawi Journal of Environmental and Public Health Volume 2021, Article ID 6633271, 19 pages https://doi.org/10.1155/2021/6633271. (Online- accessed 10 June 2023)

[6] Buitrago-Garcia D, Salanti G, Low N. Studies of prevalence: how a basic epidemiology concept has gained recognition in the COVID-19 pandemic. BMJ Open 2022;12:e061497. doi:10.1136/ bmjopen-2022-061497[Online-accessed 23 Juin 2023)http://bmjopen.bmj.com/

[7] Formalized consensus: clinical practice recommendations for the Management of acute low back pain in the African patient[French]. Mohamed Elleuch, Abdellah El Maghraoui , Brahim Griene , Mati Nejmi,&, Souhaibou Ndongo, Alain Serrie. Pan African Medical Journal.2015;22:240doi:10.11604/pamj.2015.22.240.8120.http://www.panafrican-med-journal.com/content/article/22/240/full/(Online-accessed on 23 June 2023)

[8] Nordic type questionnaire for the monitoring of hyperactivity musculo-skeletal disorders [French].Destined for the Occupational Physician, Number 112. National Institute for research on safety and the prevention of work related accidents and diseases 65, boulevard Richard-Lenoir 75011 Paris. (Online-accessed 17 May 2023). www.inrs.fr

[9] Frequency of low back pain in the French population aged 30 to 64. Results from two national surveys [French]. J.Gourmelen a , JF. Chastang a , A. Ozguler a , JL. Lanoë a , JF. Ravaud b , A. Leclerc. a INSERM, Unité 687 – IFR69, 14 rue du Val d'Osne, 94415 Saint-Maurice Cedex, France.(Online-Accessed on 12 April 2023).