Prevalence of Low-Back Pain among Police Officers in Ife-Ijesa Senatorial District, Osun State, Nigeria

Oluwabusayo Odunayo Akinbiola, Ajayi Abraham Oluwafemi

Department of Kinesiology, Health Education and Recreation, Obafemi Awolowo University, Ile-Ife, Nigeria

DOI: https://dx.doi.org/10.47772/IJRISS.2025.908000427

Received: 12 August 2025; Accepted: 19 August 2025; Published: 15 September 2025

ABSTRACT

Low-back pain (LBP), commonly described as pain and discomfort localized below the costal margin and above the inferior gluteal folds is a common health concern among the military and paramilitary, often attributed to the high level of physical exertions that typifies their duties. The police job is equally stressful and physically demanding like the military and paramilitary outfits. Studies abound on the prevalence of musculoskeletal disorders among the military and paramilitary, however, there are few studies delineating this problem among members of the police force. This study investigated the prevalence of LBP among personnel of the police force in the Ife-Ijesa Senatorial District of Osun State, Nigeria. The study employed a descriptive survey research design. Sample comprised of 330 police officers conveniently selected from nine Divisions and two Area Commands in the study area. A structured questionnaire titled "Prevalence of Low-Back Pain and Risk Factors Questionnaire" (PLPRFQ). The instrument surveyed socio-demographic characteristics, incidence and prevalence of LBP, lifestyle and habits of police officers and what they perceived as contributors to LBP. The findings revealed a high prevalence of LBP (63.33%) among the police officers sampled. The results also revealed a strong association between policing and LBP, with 96.97% claiming they never had low-back pain before joining the force. Majority of police officers in the study (73.33%) claimed to have been having low-back pain for an upward of one year. The study revealed that police officers (63.90%) perceived job schedules such as desk duties (81.80%), mounting/dismounting a truck (80.90%) as key contributors to the incidence of low-back pain. The study found significant associations between LBP and job schedule ($\chi^2 = 137.93$, $p < 0.05$). The study concluded that low-back pain is prevalent among police officers and that job schedule is perceived as a significant contributor to its incidence. Improving workplace ergonomics and physical fitness training among the police could improve the overall well-being and productivity of personnel of the police force.

Keywords: Low-back pain, Police Officers, Military, Paramilitary, Prevalence

INTRODUCTION

Low-back pain (LBP) is a widespread health issue affecting millions globally. The debilitating nature of the pain made it one of the leading cause of disability, and, is widely implicated for lost workdays. The prevalence of LBP in the general population and among law enforcement agencies varies across studies, but it is consistently high among construction workers and the military where lifting of heavy objects, prolonged stationary postures and repetitive movements are common. People of all ages frequently suffer low back discomfort symptomatically. Hartvigsen, et al., (2018) published that about 540 million people were reported to have experienced low back pain that was activity-limiting as of 2015

The position of the pain, which is commonly between the buttock creases and the lower rib borders, gave rise to the term "low-back pain." Low-back pain is a common and often disabling condition that can range from a dull, constant ache to sharp, intermittent pain. It can be caused by a variety of factors, including muscle strain, poor posture, lifting incorrectly, or a direct injury. It can also happen as a result of certain medical conditions, such as a herniated disc or arthritis (Gibbs, et al., 2023). Low-back pain can cause a range of effects, from mild

discomfort to severe disability. It can affect a person's ability to perform daily activities, such as bending, lifting, and sitting. It can also lead to decreased mobility and a decreased quality of life (Odole, et al., 2011).

In the words of Locatelli (2021) an estimated 60% to 90% of people may have low-back pain at some point in their lives and a substantial number of cases of low-back pain were related to occupational factors. Work-related low back pain is the leading contributor to disability among those under the age of 45 who are employed, which highlights a serious issue that is both social and economic (Rufai, et al., 2019). Also, it is the primary factor in both absenteeism and health issues at work (Rufai, et al., 2019).

Police officers, due to their physically demanding work schedules are at increased risk of experiencing low-back pain. The rigours involved in apprehending restive and sometimes overly aggressive suspects, patrolling and responding to emergencies, carrying heavy equipment and armours, operating in awkward and unfavourable postures and prolonged static positions, as those which typifies sentry and traffic control duties are factors that could precipitate LBP occurrence. Previous studies (Sidiq et al. 2021., Locatelli, 2021., Marins et al. 2022 and Xing et al. 2024) have consistently demonstrated a high level of prevalence of low-back pain among the military, paramilitary, and police officers. However, few studies have delineated this problem among members of the Nigerian police force and no known study has investigated this in the study area.

METHODOLOGY

The study employed a descriptive survey research design. Police officers in Ife-Ijesa Senatorial District formed the population. Sample comprised of 330 police officers selected from nine Divisions and two Area Commands in the study area, using convenience sampling technique. Clearance was obtained from the office of the Commissioner of Police, Osun State prior to data collection. Data were collected through a self-structured questionnaire titled "Prevalence of Low-Back Pain and Risk Factors Questionnaire" (PLPRFQ). The instrument surveyed the respondents' history of musculoskeletal injuries and LBP, prevalence of LBP, and what the officers perceived to be contributory factors to LBP. Two trained research assistants were engaged by the researcher to facilitate prompt administration and retrieval of the research questionnaires. Data were summarised in frequencies and percentages. Chi-square statistics and Spearman-rho correlational statistics were used to test relationships.

RESULTS AND DISCUSSION

Table 1: Demographic Characteristics of the Respondents

S/N	Characteristics	Categories	f (%)
1.	Length of Service	1-5	14 (4.24)
		6-10	20 (6.10)
		11-15	120 (36.36)
		16 and above	176 (53.33)
2.	Job Schedules	Patrol	57 (17.27)
		Investigation	194 (58.79)
		Administrative	33 (10.00)
		Desk Duty	46 (13.94)
3.	Cadre	Constable	19 (5.76)
		Corporal	52 (15.76)
		Sergeant	153 (46.36)
		Inspector	74 (22.42)

		ASP-CSP	31 (9.39)
		ACP	1 (0.30)
4.	Body Mass Index (BMI)	Under weight	12 (3.64)
		Normal	289 (87.58)
		Overweight	23 (6.97)
		Obese	6 (1.82)
5.	Waist-Hip ratio (WHR) cm	Normal	303 (91.82)
		Overweight	19 (5.76)
		Obese	8 (2.42)

Source: Field Survey, 2022

The data summarised in Table 1 revealed that most of the respondents (46.36%) were in the ranks of sergeant and inspector (22.42%). Majority of the respondents (53.33%) had spent more than sixteen years in service about 120(36.36%) of the sample had been in the service for a period of 11-15 years. Few others, 14(4.24%) and 20(6.1%) have been in service between 1-5 years and 6-10 years respectively. Data in the Table also showed that 57(17.2%) of the officers were in the patrol unit, a large majority of them 194(58.79%) were in the investigation unit, 33(10.00%) were in administration, while 46(13.94%) were in desk duties. With respect to body composition characteristics, analysis of the participants' BMI revealed that majority 289(87.58%) were in the normal range of BMI. Twelve others (3.64%) were underweighted, 23(6.97%) were overweight and 6(1.82%) were obese. Analysis of their waist-hip ratio (WHR) revealed that 303(91.82%) were normal, 19(5.76%) were overweight and 8(2.42%) were obese.

Table 2: Prevalence of Low Back Pain among Police Officers in the Study Area

S/N	Items	f (%)
1.	**Did you experience LBP before you were enlisted in the police?**	
	Yes	10 (3.03)
	No	320 (96.97)
2.	**Since you joined the force have you ever experience low back pain**	
	Yes	209 (63.33)
	No	121 (36.67)
3.	**How frequently do you experience low back pain**	
	Occasional	87 (26.67)
	Very Often	237 (71.82)
	All the time	6 (1.82)
4.	**What period of the day do you experience low back pain**	
	During work	29 (8.79)
	Morning	228 (69.09)
	Afternoon	30 (9.09)
	Night	8 (2.42)
	Midnight	35 (10.61)
5.	**How long have you been experiencing low back pain**	

	Less than a month	27 (8.18)
	Between 3-6month	30 (9.10)
	Between 6-12	31 (9.39)
	More than a year	242 (73.33)
6.	**Prior to working in your current department, did you experience back pain?**	
	Yes	283 (85.76)
	No	47 (14.24)

Source: Field Survey

Data summarised in Table 2 depicts the prevalence and characteristics of low back pain (LBP) among the sampled population. While only 3.03% of police officers reported experiencing LBP before enlisting in the force, a huge majority (96.97%) of them claimed they never experienced LBP prior to enlisting. This suggest that the occupational environment and demands significantly contribute to the LBP incidence. This aligns with findings from other studies showing low prevalence of LBP in non-occupational settings prior to physically demanding jobs. A substantial number, (63.33%) of the police officers sampled had experienced low back pain since they joined the Nigerian Police Force. This finding highlights the occupational strain typical of the job of policing. Previous research (Ohlendorf et al. 2023., Kwan Zher et al. 2023., & Venancio et al. 2024) have established that jobs that are physically demanding, such as those requiring prolonged sitting, standing, and carrying heavy equipment are significant risk factors for LBP. With regards to frequency of LBP episodes, though majority of the respondents (71.82%) said they experience the pain very often, a few (1.82%) expressed that the pain occurs all the time, thereby suggesting that some might be battling with very chronic or debilitating LBP. The timing of the pain among the officers afflicted with LBP in the study (69.09%) reporting that they experience LBP mostly in the morning could be due to poor recovery after daily duty rigors, or the cumulative effects of daily occupational activities. This pattern agrees with what some authours (Sato, 2023., Heikkala, et al. 2023., & McMaster et al. 2024) reported as diurnal variations in musculoskeletal pain, often accompanied with stiffness and discomfort upon waking. A significant 73.33% of police officers in the current study reported that they have experienced LBP for over a year, a finding that also points to the chronic nature of the pain. Repetitive strain, inadequate ergonomics, and delayed or inadequate medical intervention have all been implicated as causative factors of chronic pain in occupational settings. Interestingly, 85.76% of participants in the study claimed they didn't experience LBP before being deployed to their current department. This lends credence to the role of specific job functions and environmental factors in LBP onset and exacerbation.

When police officers were asked what they perceived as contributory factors to their LBP experience, they implicated a number of factors ranging from job-schedule, body armour, arms and weapons, and accoutrements. Table 2 presents a summary of the perceived contributory factors in LBP among the sampled population.

Table 2: Contributors to Low Back Pain

S/N	Factors triggering / contributing to LBP	f (%)
1.	**How often do you wear a body armour, bulletproof vest, headgear and helmet?**	
	Once in a while	48 (14.55)
	Very often	232 (70.30)
	All the time	28 (8.49)
	Never	22 (6.67)

2.	**How often do you carry arms, weapon (baton, riffles, short gun, pistol, tear gas riffle, stun gun)?**	
	Once in a while	25 (7.58)
	Very often	269 (81.52)
	All the time	16 (4.85)
	Never	20 (6.06)
3.	**How often do you wear accoutrements (hoisters, ammunition and magazine belt, magazines, bullet casings, tear gas canisters)?**	
	Once in a while	42 (12.72)
	Very often	253 (76.67)
	All the time	18 (5.46)
	Never	17 (5.15)
4.	**In the past one month, have you experienced any sign of low back pain when wearing or carrying the job equipment like the ones mentioned above?**	
	Yes	236 (71.52)
	No	94 (28.49)
5.	**Do you experience such symptom frequently?**	
	Yes	276 (83.64)
	No	54 (16.36)
6.	**Have you talked to a medical doctor concerning the pain felt when wearing or bearing this job equipment**	
	Yes	218 (66.06)
	No	112 (33.94)
7.	**Do you perceive these gears and equipment as contributing to your LBP experience?**	
	Yes	276 (83.64)
	No	54 (16.36)

Source: Field Survey, 2022

Data in Table 2 provided a summary of factors such as occupational gear and equipment, contributing to low back pain (LBP) among police officers in the study area. The results revealed that police officers in the study wear protective equipment such as body armour, bullet-proof vest, headgear and helmet very often (70.30%). The frequent use of this equipment may likely correlate with occupational demands, and their weight or designs may contribute to musculoskeletal strain in the population. Majority of them (81.52%) also bear arms and weapons such as batons, riffles, short gun, pistol, tear gas riffle and stun gun very often, and similar number (76.67%) wear accoutrements such as hoisters, ammunition and magazine-belt, magazines, bullet casings and tear-gas canisters very often. The continuous handling of weapons can cause postural imbalance and increase LBP risks. This finding is consistent with prior research (Odebiyi and Okafor, 2023., Gonçalves, et al. 2022., Pozzi, et al. 2022., Shahnawaz, et al. 2021., Tuček and Vaněček, 2020) linking repetitive tasks and heavy loads to musculoskeletal issues. These items may add cumulative strain, possibly exacerbating LBP. Majority of the police officers in the study (71.52%) reported experiencing LBP while

wearing or carrying their job equipment as those listed in Table 2, within the last one month. This finding highlights the ergonomic challenges associated with the job of police officers and aligns with data on occupational health hazards in similar fields. A significantly high numbers (83.64%) of them affirmed that they have had the symptom frequently. Persistent symptoms such as the one indicated by police officers in this study could lead to long-term health implications if not addressed. Also, worthy of note is the fact that while many of respondents (66.06%) said they have talked to a medical doctor concerning their LBP problem, about 33.94% others had not, this seems to underscore a gap in health-seeking behaviour among the officers. Barriers to accessing care or underestimating the problem could be contributing factors to LBP. Majority of the officers sampled (83.64%) perceived the protective gears, arms, weapons and other equipment carried by them on a regular basis as contributing to their LBP experience. This perception is significant, as it reflects how police officers perceived their occupational gears and equipment as impacting on their health.

CONCLUSION

The study concluded that low-back pain is highly prevalent among police officers in Ife-Ijesa Senatorial District, and the affected officers perceived their duty equipment and protective gears as contributors to the incidence of low-back pain.

REFERENCES

1. Abeler, K., Sand, T., Friborg, O., & Bergvik, S. (2020). Seasonality in pain, sleep and mental distress in patients with chronic musculoskeletal pain at latitude 69° N. Chronobiology International, 37(11),1650–1661. https://doi.org/10.1080/07420528.2020.1764011
2. Cardoso, Edeildo & Fernandes, Sabrina & Cortez, Luana & Dantas, Glauko & Câmara, Saionara. (2018). Low back pain and disability in military police: an epidemiological study. Fisioterapia em Movimento. 31. 10.1590/1980-5918.031.
3. Gibbs, D., McGahan, B. G., Ropper, A. E., & Xu, D. S. (2023). Back Pain: Differential Diagnosis and Management. Neurologic Clinics, 41(1), 61-76.
4. Gonçalves, H. et al. (2022). Assessment of Work-Related Musculoskeletal Disorders by Observational Methods in Repetitive Tasks—A Systematic Review. In: Arezes, P.M., et al. Occupational and Environmental Safety and Health III. Studies in Systems, Decision and Control, vol 406. Springer, Cham. https://doi.org/10.1007/978-3-030-89617-1_41
5. Hartvigsen, J., Hancock, M., Kongsted, A., Louw, Q., Ferreira, M., Genevay, S., Hoy, D., Karppinen, J., Pransky, G., Sieper, J., Smeets, R., Underwood, M., Buchbinder, R., Cherkin, D., Foster, N., Maher, C., Tulder, M., Anema, J., Chou, R. and Woolf, A. (2018). What low back pain is and why we need to pay attention. The Lancet. 391. 10.1016/S0140-6736(18)30480-X.
6. Heikkala, E., Oura, P., Ruokolainen, O., Ala-Mursula, L., Linton, S. J., & Karppinen, J. (2023). The Örebro Musculoskeletal Pain Screening Questionnaire-Short Form and 2-year follow-up of registered work disability. European journal of public health, 33(3), 442–447. https://doi.org/10.1093/eurpub/ckad079
7. Kadota, J. L., McCoy, S. I., Bates, M. N., Mnyippembe, A., Njau, P. F., Prata, N., & Harris-Adamson, C. (2020). The Impact of Heavy Load Carrying on Musculoskeletal Pain and Disability Among Women in Shinyanga Region, Tanzania. Annals of global health, 86(1), 17. https://doi.org/10.5334/aogh.2470
8. Kwan Zher, A. T., Maakip, I., & Voo, P. (2023). The prevalence rate of musculoskeletal disorders among police personnel in West Coast, Sabah: A preliminary investigation. Journal of Islamic, Social, Economics and Development (JISED), 8 (55), 92 – 99.
9. Locatelli M. C. (2021). Low back pain in military police activity: analysis of prevalence, associated factors, and ergonomics. Revista brasileira de medicina do trabalho : publicacao official da Associacao Nacional de Medicina do Trabalho-ANAMT, 19(4), 482–490. https://doi.org/10.47626/1679-4435-2021-626
10. Marins, E. F., Caputo, E. L., Freitas, F. C., Rombaldi, A. J., da Silva, M. C., & Alberton, C. L. (2023). Chronic low back pain prevalence in Federal Highway Police Officers: A cross-sectional study. WORK, 74(2), 539-547. https://doi.org/10.3233/WOR-211289

11. Odebiyi, Daniel & Okafor, Udoka. (2023). Musculoskeletal Disorders, Workplace Ergonomics and Injury Prevention. 10.5772/intechopen.106031.
12. Odole, A., Akinpelu, A.A., Adekanla, B., & Obisanya, O.B. (2011). Economic Burden of Low Back Pain on Patients Seen.
13. Ohlendorf et al. (2023). Journal of Occupational Medicine and Toxicology. 18:6 https://doi.org
14. Pozzi, Federico et al. (2022). Development of shoulder pain with job-related repetitive load: mechanisms of tendon pathology and anxiety. J Shoulder Elbow Surg. 31(2):225-23431(2). http://dx.doi.org/10.1016/j.jse.2021.09.007
15. Rufai, A. A., Oyeyemi, A. L., Maduagwu, S. M., Fredrick, A. D., Aliyu, S. U., & Lawan, A. (2019). Work-related musculoskeletal disorders among Nigerian police force. Nigerian Journal of Basic and Clinical Sciences, 16(2), 127
16. Sato T. O. (2023). Editorial: Insights in musculoskeletal pain: 2022. Frontiers in pain research (Lausanne, Switzerland), 4, 1205253. https://doi.org/10.3389/fpain.2023.1205253
17. Shahnawaz Anwer, Heng Li, Maxwell Fordjour Antwi-Afari, Arnold Yu Lok Wong, (2021). Associations between physical or psychosocial risk factors and work-related musculoskeletal disorders in construction workers based on literature in the last 20 years: A systematic review, International Journal of Industrial Ergonomics, 83, 103113, ISSN 0169-8141, https://doi.org/10.1016/j.ergon.2021.103113.
18. Tuček, M., & Vaněček, V. (2020). Musculoskeletal disorders and working risk factors. Central European journal of public health, 28 Suppl, S06–S11. https://doi.org/10.21101/cejph.a6183
19. Sidiq, M., Alenazi, W., Kashoo, F. Z., Qasim, M., Lopez, M. P., Ahmad, M., Mani, S., Shaphe, M. A., Khodairi, O., Almutairi, A., & Mir, S. A. (2021). Prevalence of non-specific chronic low-back pain and risk factors among male soldiers in Saudi Arabia. PeerJ, 9, e12249. https://doi.org/10.7717/peerj.12249
20. Venancio, Francia & Quinte, Jessille & Sengco, Bea Teresa. (2024). Blue-Collar Workers: Study on Physically Demanding Jobs. 18. 264-276. 10.5281/zenodo.10875909.
21. Xing, W. Y., Zhang, Y. H., Yang, Q. H., & Wang, X. Q. (2024). Prevalence and risk factors of low back pain in military personnel: a systematic review. EFORT open reviews, 9(10), 1002–1012. https://doi.org/10.1530/EOR-22-0113