Clinical and Demographic Characteristics of Workers with Unspecified Low Back Pain

Briseida B. Bohórquez Cruz,[*] Víctor A. Ricardez Peña,[*] Ana L. Martínez Pérez,[**] Enrique Villarreal Ríos,[#] Liliana Galicia Rodríguez,[#] Jesús Elizarrarás Rivas[##]

[*]*Traumatology and Orthopedics, IMSS Hospital General de Zona No. 1, Oaxaca, Mexico.*
[**]*Internal Medicine, IMSS Hospital General de Zona No. 1, Oaxaca, Mexico.*
[#]*Unidad de Investigación Epidemiológica y en Servicios de Salud, Querétaro, Mexico*
[##]*Coordinación de Investigación en Salud, Jefatura de Prestaciones Médicas Oaxaca, Instituto Mexicano del Seguro Social, Mexico*

ABSTRACT

Objective: To describe the clinical and demographic characteristics of workers with unspecified low back pain treated at a primary care facility. **Materials and Methods:** This was a descriptive, cross-sectional study involving workers diagnosed with unspecified low back pain (ICD-10 M54.50) at a primary care facility. The sample included 269 patients selected through consecutive random sampling. The patient profile was analyzed across nine dimensions: demographic, physical, nutritional, health-related behaviors, occupational, etiological, duration of symptoms, clinical manifestations, and management. Statistical analysis included percentages, means, and 95% confidence intervals for both. **Results:** The majority of patients were female (53.7%; 95% CI: 47.8–59.6), with a mean age of 41 years (95% CI: 40–43). Obesity was present in 37.8% of patients (95% CI: 32.0–43.6). Most patients engaged in moderate physical labor (58.5%; 95% CI: 52.6–64.4). In 22.6% of cases (95% CI: 17.6–27.6), the onset of low back pain followed physical exertion. Limited lumbar mobility was observed in 31.9% (95% CI: 26.3–37.5), and 42.6% (95% CI: 36.7–48.5) were unable to work due to the condition. **Conclusions:** Workers with unspecified low back pain treated in primary care were predominantly women in their forties, with high rates of obesity, low physical activity, and moderate occupational physical demands. In most cases, the underlying cause was not identified, the duration of symptoms was typically under three weeks, and clinical manifestations included motor symptoms, muscle contracture, and work-related disability.

Keywords: Low back pain; clinical characteristics; workers.
Level of Evidence: IV

Perfil epidemiológico del paciente con lumbago no especificado

RESUMEN

Objetivo: Identificar el perfil epidemiológico del trabajador con lumbago no especificado, atendido en una unidad de medicina familiar. **Materiales y Métodos:** Estudio transversal descriptivo en trabajadores con lumbago no especificado (CIE 10 M54.5), atendidos en una unidad médica de primer nivel. El tamaño de la muestra fue de 269, la técnica muestral fue aleatoria por casos consecutivos. El perfil epidemiológico se integró en 9 dimensiones: perfil demográfico, perfil físico, perfil nutricional, perfil de salud y hábitos, perfil laboral, perfil etiológico, perfil del tiempo de evolución, perfil de manifestaciones clínicas y perfil de manejo. El análisis estadístico incluyó porcentajes, promedios e intervalos de confianza para porcentajes y promedios. **Resultados:** Predominó el sexo femenino (53,7%; IC95% 47,8-59,6), la edad promedio era de 41 años (IC95% 40-43), el 37,8% tenía obesidad (IC95% 32,0-43,6), la actividad laboral predominante fue el trabajo moderado (58,5%; IC95% 52,6-64,4), el origen de la lumbalgia después de un esfuerzo representó el 22,6% (IC95% 17,6-27,6), el 31,9% (IC95% 26,3-37,5) tenía una movilidad lumbar limitada, y el 42,6% (IC95% 36,7-48,5), incapacidad laboral. **Conclusiones:** El perfil epidemiológico del trabajador con lumbago asistido en el primer nivel de atención contempla la cuarta década de la vida, el sexo femenino, la obesidad, la escasa actividad física, la actividad laboral moderada; y no identifica la etiología, la evolución inferior a semanas, los síntomas motores, la contractura muscular y la incapacidad para la actividad laboral.

Palabras clave: Lumbago; perfil; trabajador.
Nivel de Evidencia: IV

Received on January 18th, 2024. Accepted after evaluation on February 27th, 2025 • Dr. ENRIQUE VILLARREAL RÍOS • enriquevillarrealrios@gmail.com https://orcid.org/0000-0002-5455-2383

How to cite this article: Bohórquez Cruz BB, Ricardez Peña VA, Martínez Pérez AL, Villarreal Ríos E, Galicia Rodríguez L, Elizarrarás Rivas J. Clinical and Demographic Characteristics of Workers with Unspecified Low Back Pain. *Rev Asoc Argent Ortop Traumatol* 2025;90(3):246-252. https://doi.org/10.15417/issn.1852-7434.2025.90.3.1910

INTRODUCTION

Low back pain is a globally prevalent musculoskeletal condition, characterized by acute or chronic pain and attributed to various causes, including poor posture, excessive physical load, or inadequate movements. Additionally, individual physical condition—particularly overweight and obesity—has been identified as a contributing factor.[2,3]

This condition is recognized as a public health problem due to its impact on individuals, the strain it places on healthcare services, and the associated costs of care. It is estimated that approximately 80% of individuals will experience low back pain at least once in their lifetime.[4-7]

Prevalence rates reported in the literature vary widely, ranging from 6% to 13%,[8,9] with some studies indicating a prevalence as high as 42% among working populations.[10]

Describing the characteristics of low back pain involves the concept of an epidemiological profile, which encompasses population-specific attributes. Although a universal definition does not exist, this profile generally includes clinical features, etiology, healthcare-seeking behaviors, and personal habits.[11-14]

Identifying the epidemiological profile of low back pain may offer clinical insights; however, its primary value lies in generating knowledge to better understand and characterize affected populations.

In this context, the objective of the present study was to identify the epidemiological profile of workers with unspecified low back pain treated at a family medicine unit.

MATERIALS AND METHODS

A descriptive, cross-sectional study was conducted using clinical records of workers diagnosed with unspecified low back pain (ICD-10: M54.5)[15] at a family medicine unit in the city of Oaxaca, Mexico. The study period spanned from September 2021 to August 2022.

Inclusion criteria comprised clinical records of active workers over 18 years of age, engaged in any form of employment, and with complete medical documentation. Exclusion criteria included patients with a history of lumbar spine surgery, cauda equina syndrome, terminal illness, or pregnancy.

The sample size was determined using the formula for an infinite population with a 95% confidence interval (CI) for a critical region with $Z_{alpha} = 1.64$. Assuming a prevalence of 50% for Skill level 1 (p = 0.50%) and a margin of error of 5% (d = 0.05), the calculated sample size was 269 participants.

A non-randomized consecutive sampling technique was employed. The sampling frame was derived from the list of patients diagnosed with unspecified lumbago maintained by the statistics department of the medical unit.

The epidemiological profile of low back pain was structured into the following nine dimensions:

- Demographic profile (age and sex).
- Physical profile (weight, height, and body mass index (BMI)).
- Nutritional profile (underweight, normal weight, overweight, or obesity).
- Health/Habits profile (presence of chronic diseases and physical activity (defined as ≥30 minutes/day, 5 days/week)).
- Occupational profile: Based on the *International Standard Classification of Occupations* (ISCO-88):[16] Skill Level 1, Simple, routine physical or manual tasks; Skill Level 2, Tasks involving operation and repair of electronic/manual machinery or data processing; Skill Level 3, Specialized technical tasks requiring skills and procedures in a specific field; Skill Level 4, Complex problem-solving and decision-making based on extensive theoretical knowledge.
- Background profile (strain, trauma, postural factors (e.g., heavy lifting, static postures, repetitive work, frequent flexion), or no apparent cause).[17]
- Evolution profile (duration of illness (in weeks) and time from symptom onset to seeking medical attention (in days)).
- Clinical manifestations profile (accompanying symptoms, sensory and motor signs (e.g., mobility limitation due to pain), genitourinary symptoms, radiating pain, restricted lumbar ROM, radiculopathy, and muscle contracture).
- Management profile (medical-administrative procedures and support services).

After obtaining authorization from the research committee, data collection was carried out at the statistics department of the medical unit. All records with a diagnosis of unspecified low back pain between September 2021 and August 2022 were identified. Subsequently, the family medicine information system was accessed, and data were extracted from records that met the selection criteria. Throughout the process, patient confidentiality and anonymity were strictly maintained.

The statistical analysis included the calculation of percentages with corresponding confidence intervals (CI), as well as means with their respective confidence intervals.

RESULTS

Demographic, Physical, Nutritional, and Health/Habits Profiles

Among the studied population, women represented the majority (53.7%; 95%CI: 47.8–59.6). The mean age was 41 years (95%CI: 40–43), and the mean weight was 73.38 kg (95%CI: 71.68–75.08). Based on body mass index (BMI), 44.4% (95%CI: 38.5–50.3) were classified as overweight (BMI 25–29.99 kg/m²). The prevalence of arterial hypertension was 12.2% (95%CI: 8.3–16.1), and 24.4% (95%CI: 19.3–29.5) reported engaging in regular physical activity. These variables are detailed in Table 1.

Table 1. Demographic profile, physical profile, nutritional profile and health/habits profile of patients with unspecified low back pain.

Characteristics	Average % (n = 269)	95%CI	
		Lower	Upper
Demographic profile			
Age (years)	41.61	40.22	43.01
Sex (female)	53.7	47.8	59.6
Physical profile			
Weight (kg)	73.38	71.68	75.08
Height (m)	1.59	1.58	1.61
BMI (kg/m^2)	28.60	28.07	29.13
Nutritional profile			
Underweight	2.2	0.5	3.9
Normal weight	15.6	11.3	19.9
Overweight	44.4	38.5	50.3
Obesity	37.8	32.0	43.6
Health/Habits profile			
Comorbidities			
Diabetes mellitus*	3.0	1.0	5.0
Arterial hypertension**	12.2	8.3	16.1
Diabetes mellitus/arterial hypertension***	2.2	0.5	3.9
None	82.6	78.1	87.1
Habits			
Physical activity (30 min per day, 5 days per week)	24.4	19.3	29.5

*Prevalence of diabetes, regardless of whether the patient has hypertension or not.
**Prevalence of hypertension, regardless of whether the patient has diabetes or not.
***Prevalence of both diabetes and hypertension.
BMI = body mass index; 95%CI = 95% confidence interval.

Occupational Profile

According to the ISCO-88 classification, 42.6% (95%CI: 36.7–48.5) of participants performed tasks associated with Skill Level 1. Further occupational characteristics are presented in Table 2.

Table 2. Occupational profile in patients with unspecified low back pain.

Characteristics	% (n = 269)	95%CI	
		Lower	Upper
Job position			
Skill level 1	42.6	36.7	48.5
Skill level 2	38.9	33.1	44.7
Skill level 3	15.9	11.5	20.3
Skill level 4	2.6	0.7	4.5

95%CI = 95% confidence interval.

Background Profile

A history of strain was reported in 22.6% (95%CI: 17.6–27.6) of cases. The remaining antecedents are shown in Table 3.

Table 3. Background profile of low back pain in patients with unspecified low back pain.

Background of low back pain	% (n = 269)	95%CI	
		Lower	Upper
Strain	22.6	17.6	27.6
Trauma	21.5	16.6	26.4
Posture	7.4	4.3	10.5
No apparent cause	48.5	42.5	54.5

95%CI = 95% confidence interval.

Evolution and Clinical Manifestations Profiles

Limited lumbar range of motion was documented in 31.9% (95%CI: 26.3–37.5) of patients. The predominant time of evolution was less than 6 weeks in 70.4% (95%CI: 65.0–75.8) of cases. These data are summarized in Table 4.

Management Profile

Work incapacity was reported in 42.6% (95%CI: 36.7–48.5) of patients. The mean number of days of work leave for the entire population was 1.26 days (95%CI: 1.05–1.47). Detailed information on medical-administrative management and the use of support services is provided in Table 5.

DISCUSSION

It has been reported that the likelihood of experiencing low back pain increases with age.[10] However, this finding contrasts with the results of the present study, where the mean age was approximately 40 years—corresponding to a younger population. This discrepancy can be attributed to the nature of the sample, composed exclusively of working individuals, primarily within the young adult demographic. This characteristic inherently influences the age at presentation of low back pain in this study.

Table 4. Profiles of time of evolution and clinical manifestations in patients with unspecified low back pain.

Characteristics	% (n = 269)	95%CI	
		Lower	Upper
Profile of time of evolution			
Time of disease evolution			
Less than 6 weeks	70.4	65.0	75.8
6 to 12 weeks	4.1	1.7	6.5
More than 12 weeks	25.6	20.4	30.8
Onset of symptoms and request for care			
1 to 7 days	56.7	50.8	62.6
1 week to 1 month	17.0	12.5	21.5
More than 1 month	26.3	21.0	31.6
Profile of clinical manifestations			
Accompanying symptoms			
Sensitive	25.6	20.4	30.8
Motor	71.5	66.1	76.9
Genitourinary and gastrointestinal	3.0	1.0	5.0
Irradiation of pain	22.2	17.2	27.2
Lumbar range of motion			
Limited	31.9	26.3	37.5
Radiculopathy	13.7	9.6	17.8
Muscle contracture	67.8	62.2	73.4

95%CI = 95% confidence interval.

Table 5. Management profile of the patient with unspecified low back pain

Characteristics	%/Average (n = 269)	95%CI	
		Lower	Upper
Medical-administrative management			
Analgesics (exclusively)	16.7	12.2	21.2
Posture hygiene	40.7	34.8	46.6
Work incapacity	42.6	36.7	48.5
Leave (days, all patients)	1.26	1.05	1.47
Support services			
Orthopedics and Traumatology	7.8	4.6	11
Rehabilitation	5.6	2.9	8.3
Emergencies	0.4	0.4	1.2

95%CI = 95% confidence interval.

Overweight and obesity are also well-documented components of the epidemiological profile of low back pain. The rationale for this association is twofold: first, abdominal prominence in overweight individuals promotes lumbar hyperlordosis, leading to increased tension in the lumbar musculature. Second, excess body weight increases the mechanical load on vertebral structures, accelerating degenerative processes.[3,18,19] This relationship is compounded by physical inactivity—another prevalent trait within the study population—which may further contribute to the development of low back pain.

In terms of occupational classification, skill levels 1 and 2—representing physically demanding jobs—were the most prevalent. In contrast, occupations requiring complex decision-making (skill levels 3 and 4) were less represented. This distribution suggests that the sample primarily comprises manual laborers rather than knowledge-based workers. While these findings do not allow us to infer a higher prevalence of low back pain among manual laborers per se, they do highlight the specific job profile of the population studied. Notably, training in spinal care has been consistently recommended for physically active workers to mitigate the risk of musculoskeletal disorders.[16]

The observed prevalence rates for diabetes mellitus and arterial hypertension were lower than those reported in the general population, which is consistent with the younger age profile of the cohort. Previous research has shown that the prevalence of these conditions increases with age. Among the two, hypertension tends to appear earlier than diabetes, explaining its relatively higher frequency in this group.[20-22]

Although the low prevalence of regular physical activity may contribute to the risk of low back pain, this study did not investigate causality or association between these variables. Thus, physical activity is reported here as a descriptive characteristic of the study population.

Finally, although nearly half of the patients required medical leave due to their condition, the average number of days of leave was low. This may suggest that medical leave was primarily intended to manage acute symptoms. Moreover, the short duration of leave could be influenced by the potential economic consequences of extended work absence.

CONCLUSIONS

The epidemiological profile of low back pain among workers treated in a primary care setting is characterized by individuals in their fourth decade of life, with a high prevalence of obesity, low levels of physical activity, and employment involving physical exertion. The condition commonly presents with symptom evolution of less than six weeks, associated muscle contracture, and work incapacity.

Conflict of interest: The authors declare no conflicts of interest.

B. B. Bohórquez Cruz ORCID ID: https://orcid.org/0009-0007-2635-2142
V. A. Ricardez Peña ORCID ID: https://orcid.org/0009-0003-3406-0909
A. L. Martínez Pérez ORCID ID: https://orcid.org/0009-0001-8204-0916
L. Galicia Rodríguez ORCID ID: https://orcid.org/0000-0001-5140-8434
J. Elizarrarás Rivas ORCID ID: https://orcid.org/0000-0003-3416-0267

REFERENCES

1. Casado Morales MI, Moix Queraltó J, Vidal Fernández J. Etiología, cronificación y tratamiento del dolor lumbar. *Clínica y Salud* 2008;19(3):379-92. Available at: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1130-52742008000300007&lng=es
2. Garro Vargas K. Lumbalgias. *Med Leg Costa Rica* 2012;29(2):103-9. Available at: http://www.scielo.sa.cr/scielo.php?script=sci_arttext&pid=S1409-00152012000200011&lng=en.
3. Ribeiro RP, Sedrez JA, Candotti CT, Vieira A. Relação entre a dor lombar crônica não específica com a incapacidade, a postura estática e a flexibilidade. *Fisioter Pesqui* 2018;25(4):425-31. https://doi.org/10.1590/1809-2950/18001925042018

4. Covarrubias-Gómez A. Lumbalgia: Un problema de salud pública. *Rev Mex Anestesiol* 2010;33(1):S106-S109. Available at: https://www.medigraphic.com/pdfs/rma/cma-2010/cmas101y.pdf
5. Douglas CSA, Rodríguez JD, Zumbado VS. Lumbalgia: principal consulta en los servicios de salud. *Revista Médica Sinergia* 2023;8(03):e987. Available at: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=110567
6. Carpio R, Goicochea-Lugo S, Chávez Corrales J, Santayana Calizaya N, Collins JA, Robles Recalde J, et al. Guía de práctica clínica para el diagnóstico y tratamiento de lumbalgia aguda y subaguda en el Seguro Social del Perú (EsSalud). *An Fac Med* 2018;79(4):351-9. https://doi.org/10.15381/anales.v79i4.15643.
7. Diagnóstico, Tratamiento y Prevención de Lumbalgia Aguda y Crónica en el primer nivel de atención. México: Instituto Mexicano del Seguro Social; 2009. Available at: http://www.imss.gob.mx/profesionales/guiasclinicas/gpc.htm
8. Freitas Sant'Anna PCd, Anselmo Olinto MT, Souza de Bairros F, Garcez A, Soares Dias da Costa J. Lumbalgia crónica en mujeres de la región Sur de Brasil: prevalencia y factores asociados. *Fisioter Pesqui* 2021;28(1):9-17. https://doi.org/10.1590/1809-2950/19011628012021
9. Torres LM, Jiménez AJ, Cabezón A, Rodríguez MJ. Prevalencia del dolor irruptivo asociado al dolor crónico por lumbalgia en Andalucía (estudio COLUMBUS*). Rev Soc Esp Dolor* 2017;24(3):116-24. https://doi.org/10.20986/resed.2017.3548/2016
10. Saldívar González AH, Cruz Torres DL, Serviere Zaragoza L, Vázquez Nava F, Joffre Velázquez VM. Lumbalgia en trabajadores. Epidemiología. *Rev Med IMSS* 2003;41(3):203-9. Available at: https://www.medigraphic.com/pdfs/imss/im-2003/im033c.pdf
11. Fuseau M, Garrido D, Toapanta E. Características de los pacientes con lumbalgia atendidos en un centro de atención primaria en Ecuador. *Rev Bionatura* 2022;7(1):22. https://doi.org/10.21931/RB/2022.07.01.22
12. Aguilera A, Herrera A. Lumbalgía: una dolencia muy popular y a la vez desconocida. *Comunidad y Salud* 2013;11(2):8089. Available at: http://ve.scielo.org/scielo.php?script=sci_arttext&pid=S1690-32932013000200010&lng=es.
13. Centro Estatal de Vigilancia Epidemiológica y Control de Enfermedades. Dirección de Diagnóstico y Evaluación de riesgos de salud. *Metodología para la Elaboración del Perfil Epidemiológico*. Available at: https://www.studocu.com/es-mx/document/preparatoria-4-vidal-castaneda-y-najera-unam/gestion-de-calidad-en-el-laboratorio/metodologia-elaboracion-perfil-epidemilogico/68501710
14. Di Cesare M. El perfil epidemiológico de América Latina y el Caribe: desafíos, límites y acciones. Naciones Unidas, Chile. Comisión Económica para América Latina y el Caribe (CEPAL), 2011. Available at: https://www.cepal.org/sites/default/files/publication/files/3852/S2011938.pdf
15. Organización Panamericana de la Salud. Publicación Científica No. 554. *Clasificación Estadística Internacional de Enfermedades y Problemas Relacionados con la Salud Décima Revisión*. Washington, DC, 2008. Available at: https://ais.paho.org/classifications/chapters/pdf/volume1.pdf
16. Organización Internacional del Trabajo, *Clasificación Internacional Uniforme de Ocupaciones*. CIUO 88. Available at: https://www.ilo.org/public/spanish/bureau/stat/isco/isco88/index.htm
17. Jiménez-Ávila JM, Rubio-Flores EN, González-Cisneros AC, Guzmán-Pantoja JE, Gutiérrez-Román EA. Directrices en la aplicación de la guía de práctica clínica en la lumbalgia. *Cirugía y Cirujanos* 2018;86:29-37. Available at: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=66911.
18. Cano-Gómez C, de la Rúa JR, García-Guerrero G, Juliá-Bueno J, Marante-Fuertes J. Fisiopatología de la degeneración y del dolor de la columna lumbar. *Rev Esp Cir Ortop Traumatol* 2008;52(1):37-46. https://doi.org/10.1016/S1888-4415(08)74792-1
19. Matta Ibarra JE, Arrieta María VE, Andrade Rodríguez JC, Uruchi Limachi DM, Lara Taveras JA, Trouchón Jiménez SDC. Relación entre lumbalgia y sobrepeso/obesidad: dos problemas de salud pública. *Revista Med* 2019;27(1):53-60. https://doi.org/10.18359/rmed.4755
20. Araya-Orozco Max. Hipertensión arterial y diabetes mellitus. *Rev Costarric Cienc Med* 2004;25(3-4):65-71. Available at: http://www.scielo.sa.cr/scielo.php?script=sci_arttext&pid=S0253-29482004000200007&lng=en.
21. Basto-Abreu A, López-Olmedo N, Rojas-Martínez R, Aguilar-Salinas CA, Moreno-Banda GL, Carnalla M, et al. Prevalencia de prediabetes y diabetes en México: Ensanut 2022. *Salud Pública Mex* 2023;65(supl 1):S163-S168. https://doi.org/10.21149/14832
22. Campos-Nonato I, Oviedo-Solís C, Vargas-Meza J, Ramírez-Villalobos D, Medina-García C, Gómez-Álvarez E, et al. Prevalencia, tratamiento y control de la hipertensión arterial en adultos mexicanos: resultados de la Ensanut 2022. *Salud Pública Mex* 2023;65(supl 1):S169-S180. https://doi.org/10.21149/1477