
VISIBILITY, IMPACT AND TREND OF SCIENTIFIC ACTIVITY ON LIFESTYLES IN PEOPLE WITH LOW BACK PAIN

MARGOTH M. CAMACHO-MONTES, JOHN BARJA-ORE, LUISA HORTENSIA RIVAS DIAZ AND JOHN B. CASTRO-VILLANUEVA

SUMMARY

Lifestyles have a direct influence on a person's health. Therefore, the objective of the study is to analyze the visibility, impact and tendency of scientific activity on lifestyles in people with low back pain. This bibliometric study is based on a search and compilation of scientific literature indexed in the Scopus database. A total of 319 articles that met the selection criteria were selected. The data were analyzed using bibliometric software tools, including VOSviewer (1.6.20) and SciVal. There has been a notable increase in the production of articles over the past 10 years. Australia and the University of Sydney emerged

as the most productive country and institution, respectively. The journal *BMC Musculoskeletal Disorders* had the highest number of articles published (14). O'Sullivan, P. published the most articles (12). The most frequently occurring keywords in the research were: "low back pain," "physical activity," "exercise," "lifestyle," and "risk factor." Scientific production has increased, particularly in the highest quartile scientific journals (Q1 and Q2). Australian authors and institutions are leaders in this thematic field, and Australia has established collaborative links with countries in North America, Europe, and Asia.

Introduction

Low back pain, or lumbago, is characterized by pain between the lower edge of the twelfth rib and the gluteal fold, which may radiate to one or both lower limbs (GBD, 2021), which represents one of the most common musculoskeletal conditions worldwide (Wu *et al.*, 2020;

Boussaid *et al.*, 2023; Stevenson *et al.*, 2024), since around 70% to 80% of people will experience low back pain at some point in their lives. Consequently, positions this pain as one of the main causes of absenteeism from work, years lived with disability, and one of the five most common diagnoses seen in primary health services (Herrero *et al.*, 2024).

While many individuals with episodes of low back pain see

improvement within six to twelve weeks, the recurrence of pain is common, and some people may develop persistent and disabling pain (Moniz *et al.*, 2024). This is directly associated with multidimensional lifestyle factors (Alshehri *et al.*, 2023); therefore, it is important to timely identify biopsychosocial risk factors that may trigger a poor prognosis for a timely approach and reduce the impact of low back pain (Klyne *et al.*, 2022).

KEYWORDS / Bibliometric Analysis / Life Styles / Low Back Pain /

Received: 06/11/2024. Modified: 07/24/2024. Accepted: 07/29/2024.

Margoth M. Camacho-Montes. Graduate in Medical Technology, Universidad Nacional Mayor de San Marcos, Peru. Academic, Faculty of Medicine, Universidad Nacional Mayor de San Marcos, Peru. Staff physical therapist, Hospital Nacional Guillermo Almenara Irigoyen, Peru.

John Barja-Ore (Corresponding author). Master in Teaching and Research in Health. Universidad Privada del Norte, Lima, Peru. Research professor, Universidad Privada del Norte, Peru. Address: Universidad Privada del Norte, Av. Tingo Maria 1122, Lima Peru. e-mail: john.barja@upn.edu.pe.

Luisa Hortensia Rivas Diaz. Doctor in Education, Universidad Nacional Mayor de San Marcos. Master in Education, Universidad Nacional Mayor de San Marcos, Peru. Graduate in nursing, Universidad Nacional Mayor de San Marcos, Peru. Academic and Researcher, Faculty of Medicine, Universidad Nacional Mayor de San Marcos, Peru.

John B. Castro-Villanueva. Doctor in Physical Therapy, Utica University, United States of America. Clinical specialist, Hospital for Special Surgery. Westchester Rehabilitation and Performance, New York, United States of America.

Several studies highlight the need to explore this problem from a more comprehensive approach (Briggs *et al.*, 2011; Malfliet *et al.*, 2019). The current perspective emphasizes the adoption of healthy lifestyles and the development of resilience to pain (Hartvigsen *et al.*, 2018), which, on the one hand, will improve the patient's quality of life and, on the other, will reduce the socioeconomic costs (Malfliet *et al.*, 2019).

Lifestyle is the individuality of people in each space and period that encompasses their daily habits and activities in their work, entertainment, and nutrition (Farhud, 2015). According to the World Health Organization (WHO), 60% of the factors that impact individual health and quality of life are directly related to lifestyle (WHO, 2004 NO ESTÁ EN REFERENCIAS). Studies show that unhealthy lifestyles are associated with an increased risk and persistence of low back pain (Huijbers *et al.*, 2023; Yoshimoto *et al.*, 2020; Shiri *et al.*, 2010; Choi *et al.*, 2021). Adopting positive behaviors allows people with low back pain to maintain high levels of function and manage their condition purposefully (Roberts *et al.*, 2022; Roberts *et al.*, 2023).

Due to its complex, multifactorial nature and its negative effects on a global level, low back pain has become a topic of interest in the fields of public health and science (Hartvigsen *et al.*, 2018). Despite the increase in scientific production on the subject, there is a lack of comprehensive data that systematically synthesizes and analyzes research on lifestyles in people with low back pain. This knowledge gap impedes the understanding of current research trends and the ability to make informed decisions for improving care and outcomes. Thus, a bibliometric exploration would allow for the evaluation of the current state of scientific production, as well as emerging perspectives in the field, through the analysis and systematization of existing scientific knowledge. It would also promote greater collaboration between authors and institutions, helping research achieve greater visibility and influence not only within the scientific community but also in society, by facilitating the planning and implementation of evidence-based policies (Ullah *et al.*, 2022). Thus, the objective of this study is to analyze the visibility, impact, and trends of scientific activity related to the lifestyles of people with low back pain.

Methodology

A bibliometric study was conducted, focusing on articles published

in scientific journals indexed in Scopus that address lifestyles in people with low back pain.

The data source for this study was Scopus, which is a globally relevant database that also indexes a large number of scientific health journals. For the search in this database, a search strategy was designed, restricted to the title and abstract fields, and included MESH terms and logical operators. Finally, the strategy was: TITLE-ABS ((“Life Style” OR “Life Styles” OR “Lifestyle” OR “Lifestyles” OR “Healthy Lifestyle” OR “Lifestyle Healthy” OR “Lifestyles Healthy” OR “Healthy Life Styles” OR “Healthy Lifestyles” OR “Healthy Life Style” OR “Life Style Healthy” OR “Life Styles Healthy”) AND (“Low Back Pain” OR “Back Pain Low” OR “Back Pains Low” OR “Low Back Pains” OR “Pain Low Back” OR “Pains Low Back” OR “Lumbago” OR “Lower Back Pain” OR “Back Pain Lower” OR “Back Pains Lower” OR “Lower Back Pains” OR “Pain Lower Back” OR “Pains Lower Back” OR “Low Back Ache” OR “Ache Low Back” OR “Aches Low Back” OR “Back Ache Low” OR “Back Aches Low” OR “Low

Back Aches” OR “Low Backache” OR “Backache Low” OR “Backaches Low” OR “Low Backaches” OR “Low Back Pain Postural” OR “Postural Low Back Pain” OR “Low Back Pain Posterior Compartment” OR “Low Back Pain Recurrent” OR “Recurrent Low Back Pain” OR “Low Back Pain Mechanical” OR “Mechanical Low Back Pain”)) AND PUBYEAR > 2012 AND PUBYEAR < 2023. The database search was run on March 27, 2024, and 379 publications were identified.

The study selection was managed by one author (JBO), who reviewed the articles by title and abstract and subsequently examined the full text. Any uncertainties were resolved through discussion with another author (MCM). The inclusion criteria were: (i) original articles that explored the subject of lifestyles in people with low back pain; (ii) published in Scopus between 2013 and 2022; and (iii) in any language. Excluded articles included: (i) reviews; (ii) book chapters; (iii) conference proceedings; (iv) short surveys; (v) notes; (vi) conference reviews; and (vii) books. After applying these criteria, the final sample comprised 319 articles (Figure 1).

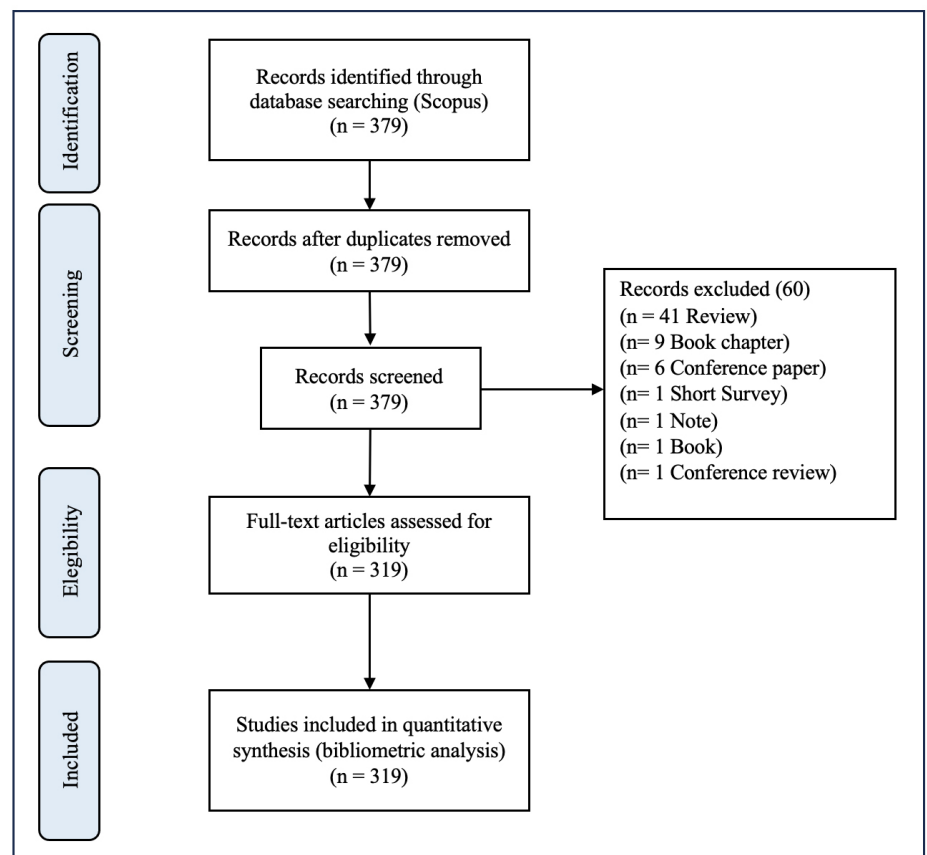


Figure 1. Flowchart for the selection of scientific publications.

Following article selection, the data were exported in .csv format to create thematic co-occurrence maps based on keywords and co-authorship by country using VOSviewer version 1.6.20. The SciVal tool, developed by Elsevier, was employed to calculate and report bibliometric parameters related to productivity, impact, and visibility of the most productive authors, institutions, and scientific journal. In addition, using MS Excel 2019, a bar chart was created to evaluate the trend of scientific production according to the quartile of the journal.

Ethical approval was not required for this research as it utilized publicly available, de-identified data and did not involve human subject.

Results

The number of published articles increased from 2013 to 2022. Each year, a higher proportion of articles were published in Q1 (top 25%) and Q2 (top 26% - 50%) journals. Q4 quartile journals were less frequently chosen by authors for disseminating their research (Figure 2).

Australia is the country with the most institutions positioned among the most productive. Among these, the University of Sydney and Curtin University have the highest number of publications. However, the Finnish institutions, Finnish Institute of Occupational Health (FWCI: 2.87) and University of Oulu (FWCI: 2.72), have a better weighted impact in relation to the global average of citations (Table I).

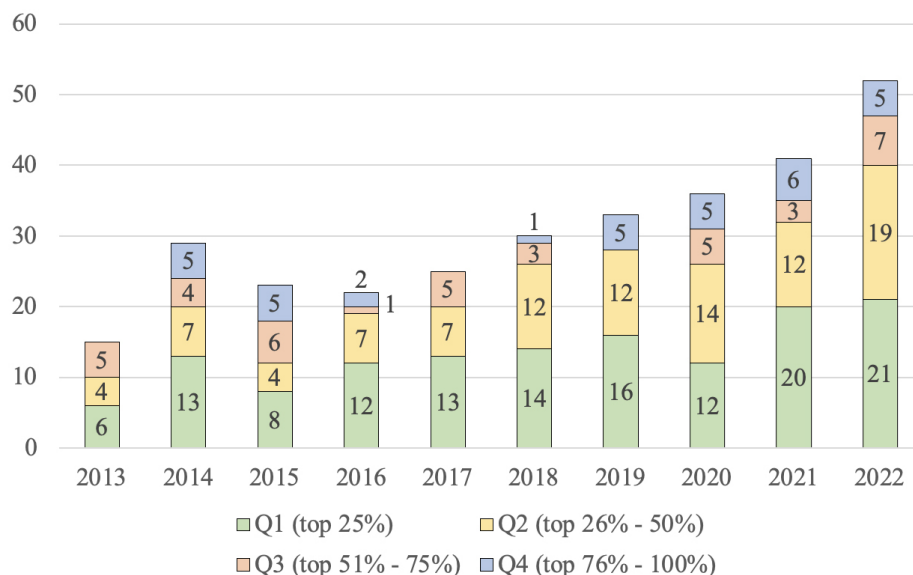


Figure 2. Trend in the number of publications by scientific journal quartile.

Among the most productive authors, Peter B. O'Sullivan from Curtin University has the highest number of published papers, but Jaro Karppinen has the highest average number of citations per publication. In addition, Ferreira Manuela L. and Wiggers John H. have 23% and 21% fewer expected citations than the world average, respectively (Table II).

The high impact journals BMC Musculoskeletal Disorders (Q2) and European Spine Journal (Q1) lead the scientific production, with 14 and 10

publications respectively on lifestyles in people with low back pain. The Spine Journal has more citations per publication (58.2) and the journal Pain has a better normalized impact per article (SNIP: 3.151) as well as a better CiteScore 2022 (12.5). The SCImago Journal Rank indicator is lower for the Journal of Pain Research (Table III).

In the thematic co-occurrence map, 4 clusters were identified, the term "low back pain" being the most recurrent in the entire network. Additionally, the terms "lifestyle" and "risk factor" are

TABLE I
RANKING OF THE 10 INSTITUTIONS WITH THE HIGHEST SCIENTIFIC OUTPUT











| Institution | Country | Scholarly output | Citations | Citations per publication | Field-Weighted citation impact |
|--|---|------------------|-----------|---------------------------|--------------------------------|
| University of Sydney |  | 23 | 259 | 11.3 | 0.86 |
| Curtin University |  | 15 | 479 | 31.9 | 2.09 |
| University of Newcastle |  | 10 | 144 | 14.4 | 0.83 |
| Neuroscience Research Australia |  | 10 | 164 | 16.4 | 1.01 |
| Finnish Institute of Occupational Health |  | 9 | 457 | 50.8 | 2.87 |
| Hunter Medical Research Institute |  | 9 | 100 | 11.1 | 0.85 |
| Hunter New England Health |  | 9 | 100 | 11.1 | 0.85 |
| University of New South Wales |  | 7 | 86 | 12.3 | 0.77 |
| University of Oulu |  | 7 | 346 | 49.4 | 2.72 |
| National Research Centre for the Working Environment |  | 7 | 172 | 24.6 | 2.09 |

TABLE II
RANKING OF THE 10 AUTHORS WITH THE HIGHEST SCIENTIFIC OUTPUT

| Name | Filiation | Scholarly output | Citations per Publication | Field-Weighted Citation Impact | h-index |
|---------------|---|------------------|---------------------------|--------------------------------|---------|
| O'Sullivan PB | Curtin University, Perth, Australia | 12 | 31.2 | 2.02 | 65 |
| Kamper SJ | The University of Sydney School of Health Sciences, Sydney, Australia | 9 | 11.1 | 0.85 | 42 |
| Williams CM | The University of Sydney, Sydney, Australia | 9 | 11.1 | 0.85 | 34 |
| Ferreira ML | The University of Sydney, Sydney, Australia | 9 | 11 | 0.77 | 61 |
| Williams AJ | The University of Newcastle, Australia, Callaghan, Australia | 9 | 11.1 | 0.85 | 15 |
| Smith AJ | Curtin University, Perth, Australia | 9 | 36.3 | 2.28 | 50 |
| Robson EK | The University of Newcastle, Australia, Callagha, Australia | 8 | 11.5 | 0.84 | 13 |
| Ferreira PH | The University of Sydney School of Health Sciences, Sydney, Australia | 8 | 10.8 | 0.84 | 51 |
| Wiggers JH | The University of Newcastle, Australia, Callaghan, Australia | 7 | 12.1 | 0.79 | 43 |
| Karppinen JI | Oulun Yliopisto, Oulu, Finland | 7 | 49.4 | 2.72 | 65 |

TABLE III
RANKING OF THE 10 SCIENTIFIC JOURNALS WITH THE HIGHEST NUMBER OF PUBLICATIONS

| Scopus Source | Quartile | Publications | Citations per publication | Source-Normalized Impact per Paper (SNIP) | CiteScore 2022 | SCImago Journal Rank |
|---|----------|--------------|---------------------------|---|----------------|----------------------|
| BMC Musculoskeletal Disorders | Q2 | 14 | 15 | 1.288 | 3.5 | 0.716 |
| European Spine Journal | Q1 | 10 | 23.3 | 1.581 | 4.7 | 0.942 |
| European Journal of Pain | Q1 | 7 | 24.1 | 1.513 | 6.8 | 1.07 |
| International Journal of Environmental Research and Public Health | Q2 | 7 | 17 | 1.28 | 5.4 | 0.828 |
| BMJ Open | Q1 | 6 | 15.3 | 1.168 | 4.4 | 1.059 |
| Journal of Back and Musculoskeletal Rehabilitation | Q2 | 5 | 10.8 | 0.794 | 2.4 | 0.421 |
| Spine | Q1 | 5 | 13.8 | 1.804 | 5.7 | 1.197 |
| Spine Journal | Q1 | 5 | 58.2 | 2.087 | 7.5 | 1.562 |
| Pain | Q1 | 5 | 27 | 3.151 | 12.5 | 2.445 |
| Journal of Pain Research | Q2 | 5 | 15.8 | 1.083 | 4.8 | 0.667 |

frequent in the green cluster, while in the blue cluster the terms “physical activity” and “exercise” are frequent. On the other hand, in the co-authorship network, Australia concentrates the largest number of publications and shows strong collaborative links with the United Kingdom and Brazil. The United States also shows significant scientific activity with main links to Japan and Canada (Figure 3).

Discussion

Low back pain has a negative impact globally (George *et al.*, 2021). The WHO highlights it as a major global public health issue requiring timely and effective evidence-based responses (WHO, 2023), focused on

effective evidence-based approaches and affordable to the population (Buchbinder *et al.*, 2018). In this context, it is essential to analyze the known lifestyle factors that contribute to low back pain, as well as to analyze other lesser known factors that could be determinants (Malfliet *et al.*, 2019).

In the study developed by Huang *et al.* (Huang *et al.*, 2022) it was shown that, in recent years, research on low back pain has experienced sustained growth. This positive trend reflects a greater commitment from researchers to understand the multifactorial nature of low back pain and to develop new strategies for management and prevention, as supported by bibliometric studies (Wang and Zhao, 2018; Weng *et al.*, 2020).

Australia and the University of Sydney are world leaders in low back pain research, holding the leadership in terms of scientific production in this field. Studies such as that by Weng *et al.* (2020) support this position, identifying Australia as the nation with the highest volume of publications on the topic, followed by the Netherlands and the United States. The most productive authors belong to Australian institutions. In particular, the role of Peter B. O'Sullivan can be highlighted, since he is a reference in this field of knowledge, due to his contributions, which has provided a new treatment approach for people with disabling low back pain, called “Cognitive Functional Therapy”. This approach

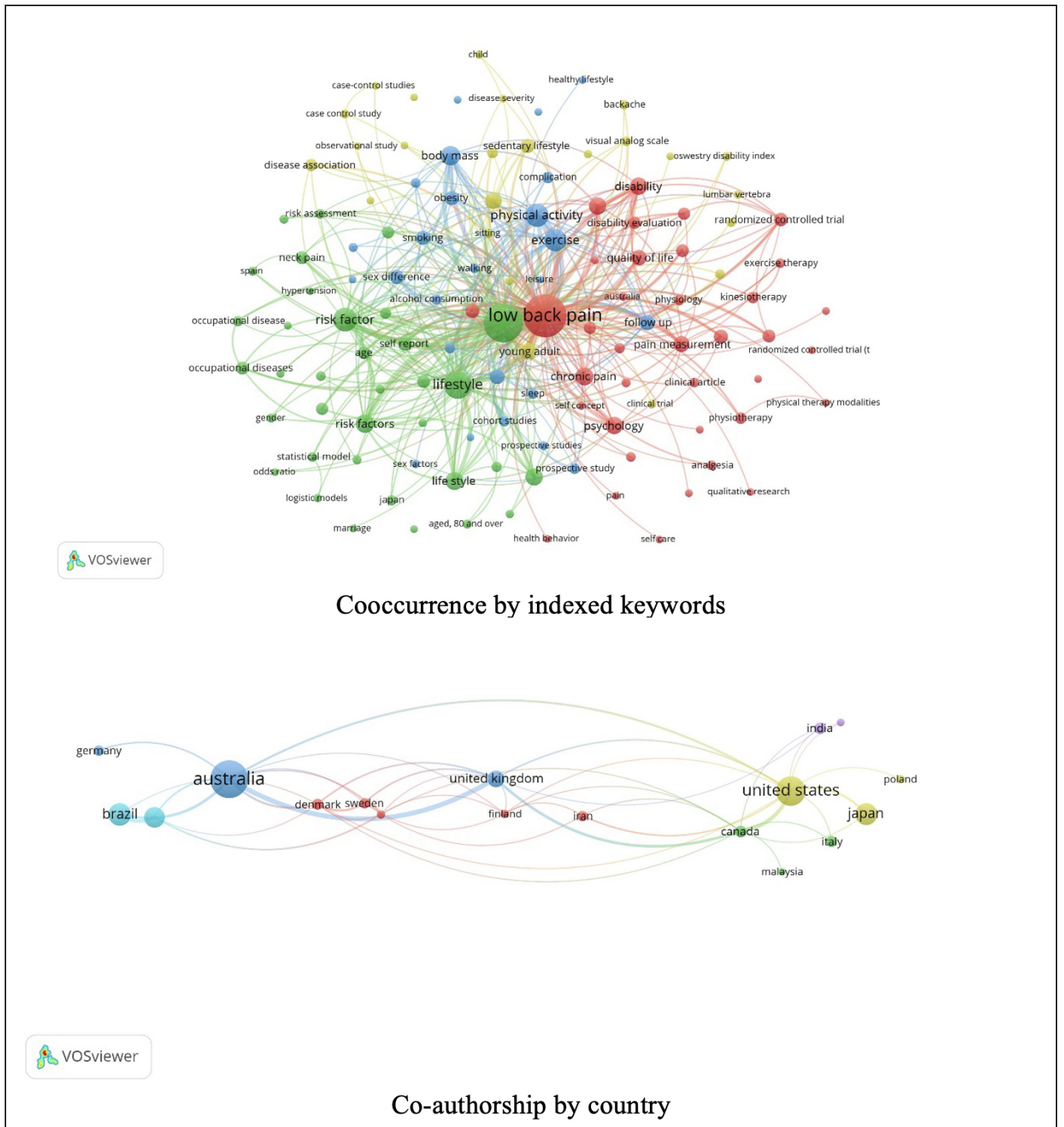


Figure 3. Cooccurrence by indexed keywords and co-authorship by country.

addresses the multidimensional aspects that influence persistent low back pain (O’Sullivan *et al.*, 2018) and has proven to be effective in reducing pain and improving physical function in patients with chronic pain (Zhang *et al.*, 2024).

In most cases, the preference of researchers regarding the dissemination of their articles is oriented to the visibility, impact and prestige of the journal they select. Research on lifestyles in people with low back pain has

generated great interest in the scientific community, in fact, it is observed that BMC Musculoskeletal Disorders is positioned as the journal with the best production with 14 publications and also the Spine Journal stands out for

receiving the highest number of citations per article.

The co-occurrence map highlights that physical activity, exercise, and risk factors are key issues in managing low back pain. This information is supported by relevant research, which confirms the effectiveness of physical activity and exercise in reducing pain and improving quality of life in patients with low back pain (WHO, 2023; Geneen, *et al.*, 2017). On the other hand, studies identify several risk factors increase the likelihood of developing this condition, including poor general health, physical and psychological stress, sleep problems, advanced age, female gender, obesity, smoking, and strenuous physical work (Parreira *et al.*, 2018; Shiri *et al.*, 2019). This analysis allows identifying trending topics, guiding researchers towards areas of greater impact, as well as opening the opportunity for the scientific community to address under-researched topics such as nutrition, sleep, interventions based on digital health or artificial intelligence.

In terms of collaboration, Australia, the United States, and the United Kingdom have a high density of international connections with other countries, indicating that they are important centers of international cooperation in this area of research. Other countries with a significant number of co-authored publications include Brazil, Japan, Germany, Canada, Denmark, Sweden and Finland. These countries also have a relatively dense network of connections, indicating that they are actively participating in international research on the subject and that their participation is increasingly active and sustained. It is also relevant to mention that less visible countries may generate important contributions in the future, from the perspective of their public health context and reality, which would help to better understand this problem.

The study has limitations. We state that at the time of exporting metadata with the SciVal tool, some data may have been missing due to the loss of indexing of some scientific journals, which could have affected some bibliometric parameters; in addition, the study did not consider the elimination of self-citations. Although the search was only conducted in Scopus, it is considered that this database ensures a high representativeness of the global scientific production; however, it is suggested that subsequent studies extend this analysis to databases such as Web of Science, PubMed, EMBASE, etc. According to the authors'

search, this would be the first bibliometric study of the scientific production of the last decade on lifestyles in people with low back pain.

Conclusions

Research on lifestyles in people with low back pain has shown a consistent increase, indicating growing interest from the scientific community. First and second quartile journals are the main means of dissemination for these studies. Australia stands out as a leader in this field, with significant contributions also coming from countries in North America, Europe, and Asia. International cooperation is crucial for advancing knowledge on this topic and improving the quality of life for individuals suffering from low back pain.

REFERENCES

- Alshehri MM, Alqhtani AM, Gharawi SH, Sharahily RA, Fathi WA, Alnamy SG, Alothman SA, Alshehri YS, Alhowimel AS, Alqahtani BA, Alenazi AM (2023) Prevalence of lower back pain and its associations with lifestyle behaviors among college students in Saudi Arabia. *BMC Musculoskelet Disord* 24: 646.
- Boussaid S, Daldoul C, Rekik S, Jammali S, Cheour E, Sahli H, Elleuch M (2023) Low Back Pain Among Students of Medical University of Tunis. *Curr Rheumatol Rev* 19: 205-213.
- Briggs AM, Jordan JE, O'Sullivan PB, Buchbinder R, Burnett AF, Osborne RH, Straker LM (2011) Individuals with chronic low back pain have greater difficulty in engaging in positive lifestyle behaviours than those without back pain: an assessment of health literacy. *BMC Musculoskelet Disord* 12: 161.
- Buchbinder R, van Tulder M, Öberg B, Costa LM, Woolf A, Schoene M, Croft P (2018) Lancet Low Back Pain Series Working Group. Low back pain: a call for action. *Lancet* 391: 2384-2388.
- Choi S, Nah S, Jang HD, Moon JE, Han S (2021) Association between chronic low back pain and degree of stress: a nationwide cross-sectional study. *Sci Rep* 11: 14549.
- Farhud DD (2015) Impact of Lifestyle on Health. *Iran J Public Health* 44: 1442-4.
- GBD 2021 Low Back Pain Collaborators (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. *Lancet Rheumatol* 5: e316-e329.
- Geneen LJ, Moore RA, Clarke C, Martin D, Colvin LA, Smith BH (2017) Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews. *Cochrane Database Syst Rev* 4: CD011279.
- George SZ, Fritz JM, Silfies SP, Schneider MJ, Beneciuk JM, Lentz TA, Gilliam JR, Hendren S, Norman KS (2021) Interventions for the Management of Acute and Chronic Low Back Pain: Revision 2021. *J Orthop Sports Phys Ther* 51: CPG1-CPG60.
- Hartvigsen J, Hancock MJ, Kongsted A, Louw Q, Ferreira ML, Genevay S, Hoy D, Karppinen J, Pransky G, Sieper J, Smeets RJ, Underwood M (2018) What low back pain is and why we need to pay attention. *Lancet* 391: 2356-2367.
- Herrero P, Val P, Lapuente-Hernández D, Cuenca-Zaldívar JN, Calvo S, Gómez-Trullén EM (2024) Effects of Lifestyle Interventions on the Improvement of Chronic Non-Specific Low Back Pain: A Systematic Review and Network Meta-Analysis. *Healthcare (Basel)* 12: 505.
- Huang F, Zheng B, Wu C, Zhao S, Xu Y, Li Z, Huang C, Fan Z, Wu S (2022) International Publication Trends in Low Back Pain Research: A Bibliometric and Visualization Analysis. *Front Public Health* 10: 746591.
- Huijbers JCI, Coenen P, Burchell GLB, Coppieters MW, Steenhuis IHM, Van Dieën JH, Koes BW, Kempen DHR, Anema JR, Kingma I, Voogt L, Williams CM, Van Dongen JM, Van der Ploeg HP, Ostelo RWJG, Scholten-Peeters GGM (2023) The (cost-)effectiveness of combined lifestyle interventions for people with persistent low-back pain who are overweight or obese: A systematic review. *Musculoskelet Sci Pract* 65: 102770.
- Klyne DM, Hall LM, Nicholas MK, Hodges PW (2022) Risk factors for low back pain outcome: Does it matter when they are measured? *Eur J Pain* 26: 835-854.
- Malfliet A, Ickmans K, Huysmans E, Coppieters I, Willaert W, Bogaert WV, Rheel E, Bilterys T, Wilgen PV, Nijls J (2019) Best Evidence Rehabilitation for Chronic Pain Part 3: Low Back Pain. *J Clin Med* 8: 1063.
- Moniz A, Duarte ST, Aguiar P, Caeiro C, Pires D, Fernandes R, Moço D, Marques MM, Sousa R, Canhão H, Branco J, Rodrigues AM, Cruz EB (2024) Physiotherapists' barriers and facilitators to the implementation of a behaviour change-informed exercise intervention to promote the adoption of regular exercise practice in patients at risk of recurrence of low back pain: a qualitative study. *BMC Prim Care* 25: 39.
- O'Sullivan PB, Caneiro JP, O'Keefe M, Smith A, Dankaerts W, Fersum K, O'Sullivan K (2018) Cognitive Functional Therapy: An Integrated Behavioral Approach for the Targeted Management of Disabling Low Back Pain. *Phys Ther* 98: 408-423.
- Parreira P, Maher CG, Steffens D, Hancock MJ, Ferreira ML (2018) Risk factors for low back pain and sciatica: an umbrella review. *Spine J* 18: 1715-1721.
- Roberts KE, Beckenkamp PR, Ferreira ML, Duncan GE, Calais-Ferreira L, Gatt JM, Ferreira P (2022) Positive lifestyle behaviours and emotional health factors are associated with low back pain resilience. *Eur Spine J* 31: 3616-3626.
- Roberts KE, Beckenkamp PR, Ferreira ML, Ho EK, Carvalho-E-Silva AP, Calais-Ferreira L, Ferreira PH (2023) The impact of aggregate positive lifestyle behaviors on low back pain resilience and care seeking. *Spine J* 23: 1405-1413.
- Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Viikari-Juntura E (2010) The association between obesity and low back pain: a meta-analysis. *Am J Epidemiol* 171: 135-154.

- Shiri R, Falah-Hassani K, Heliövaara M, Solovieva S, Amiri S, Lallukka T, Burdorf A, Husgafvel-Pursiainen K, Viikari-Juntura E (2019) Risk Factors for Low Back Pain: A Population-Based Longitudinal Study. *Arthritis Care Res (Hoboken)* 71: 290-299.
- Stevenson K, Hadley-Barrows T, Evans N, Campbell L, Southam J, Chudyk A, Ellington D, Jeeves B, Jenson C, Kleberg S, Birkinshaw H, Mair F, Dziedzic K, Peat G, Jordan KP, Yu D, Bailey J, Braybooke A, Mallen CD, Hill JC (2024) The SelfStarT intervention for low back pain patients presenting to first contact physiotherapists: A mixed methods service evaluation. *Musculoskeletal Care* 22: e1876.
- Ullah R, Asghar I, Griffiths MG (2022) An Integrated Methodology for Bibliometric Analysis: A Case Study of Internet of Things in Healthcare Applications. *Sensors (Basel)* 23: 67.
- Wang B, Zhao P (2018) Worldwide research productivity in the field of back pain: A bibliometric analysis. *Medicine (Baltimore)* 97: e11566.
- Weng LM, Zheng YL, Peng MS, Chang TT, Wu B, Wang XQ (2020) A Bibliometric Analysis of Nonspecific Low Back Pain Research. *Pain Res. Manag.* 9: 5396734.
- WHO (2004) The WHO cross-national study of health behavior in school-aged children from 35 countries: findings from 2001-2002. *J Sch Health* 74: 204-6.
- WHO (2023) Low back pain. <https://www.who.int/news-room/fact-sheets/detail/low-back-pain>. (Cons. 06/19/2023)
- Wu A, March L, Zheng X, Huang J, Wang X, Zhao J, Blyth FM, Smith E, Buchbinder R, Hoy D (2020) Global low back pain prevalence and years lived with disability from 1990 to 2017: estimates from the Global Burden of Disease Study 2017. *Ann Transl Med* 8: 299.
- Yoshimoto T, Ochiai H, Shirasawa T, Nagahama S, Uehara A, Muramatsu J, Kokaze A (2020) Clustering of Lifestyle Factors and Its Association with Low Back Pain: A Cross-Sectional Study of Over 400,000 Japanese Adults. *J. Pain Res.* 13: 1411-1419.
- Zhang J, Jiang N, Xu H, Wu Y, Cheng S, Liang B (2024) Efficacy of cognitive functional therapy in patients with low back pain: A systematic review and meta-analysis. *Int J Nurs Stud* 151: 104679.

VISIBILIDAD, IMPACTO Y TENDENCIA DE LA ACTIVIDAD CIENTÍFICA SOBRE LOS ESTILOS DE VIDA EN PERSONAS CON DOLOR LUMBAR

Margoth M. Camacho-Montes, John Barja-Ore, Luisa Hortensia Rivas Diaz y John B. Castro-Villanueva

RESUMEN

Los estilos de vida tienen una influencia directa en la salud de las personas. Por lo tanto, el objetivo del estudio es analizar la visibilidad, el impacto y las tendencias de la actividad científica relacionada con los estilos de vida en personas con dolor lumbar. Este es un estudio bibliométrico basado en la búsqueda y compilación de literatura científica indexada en la base de datos Scopus. Se seleccionaron un total de 319 artículos que cumplieran con los criterios de selección. Los datos fueron analizados utilizando herramientas bibliométricas, incluyendo VOSviewer (1.6.20) y SciVal. En los últimos 10 años, se ha observado un crecimiento notable en la producción de artículos.

Australia y la Universidad de Sídney fueron el país y la institución más productivos, respectivamente. La revista BMC Musculoskeletal Disorders tuvo la mayor producción de artículos (14). O'Sullivan, P. publicó el mayor número de artículos (12). Las palabras clave más frecuentes en la investigación fueron: "dolor lumbar", "actividad física", "ejercicio", "estilo de vida" y "factor de riesgo". La producción científica ha aumentado, especialmente en las revistas científicas de los cuartiles más altos (Q1 y Q2). Los autores e instituciones australianos son líderes en este campo temático, y Australia ha establecido vínculos colaborativos con países de América del Norte, Europa y Asia.

VISIBILIDADE, IMPACTO E TENDÊNCIA DA ATIVIDADE CIENTÍFICA SOBRE OS ESTILOS DE VIDA EM PESSOAS COM DOR LOMBAR

Margoth M. Camacho-Montes, John Barja-Ore, Luisa Hortensia Rivas Diaz e John B. Castro-Villanueva

RESUMO

Os estilos de vida têm uma influência direta na saúde das pessoas. Portanto, o objetivo do estudo é analisar a visibilidade, o impacto e a tendência da atividade científica sobre os estilos de vida em pessoas com dor lombar. Este estudo bibliométrico é baseado em uma busca e compilação da literatura científica indexada na base de dados Scopus. Foram selecionados um total de 319 artigos que atenderam aos critérios de seleção. Os dados foram analisados usando ferramentas de software bibliométrico, incluindo VOSviewer (1.6.20) e SciVal. Houve um aumento notável na produção de artigos nos últimos 10 anos. A Austrália e a Universidade de Sydney se destaca-

ram como o país e a instituição mais produtivos, respectivamente. A revista BMC Musculoskeletal Disorders teve o maior número de artigos publicados (14). O'Sullivan, P. foi o autor com o maior número de publicações (12). As palavras-chave mais frequentes na pesquisa foram: "dor lombar", "atividade física", "exercício", "estilo de vida" e "fator de risco". A produção científica aumentou, especialmente nas revistas científicas dos quartis mais altos (Q1 e Q2). Autores e instituições australianos são líderes neste campo temático, e a Austrália estabeleceu vínculos colaborativos com países da América do Norte, Europa e Ásia.