UDC 613.9:001.8y

A.S. Sverstyuk, O.A. Bahrii–Zayats, S.O. Nykytyuk, S.S. Levenets, T.V. Hariyan, V.H. Dzhyvak

Optimization of scientific research of theoretical and methodological foundations of the formation of a culture of personal health

I. Horbachevsky Ternopil National Medical University, Ukraine

Modern Pediatrics. Ukraine. (2025). 5(149): 54-62; doi 10.15574/SP.2025.5(149).5462

For citation: Sverstyuk AS, Bahrii-Zayats OA, Nykytyuk SO, Levenets SS, Hariyan TV, Dzhyvak VH. (2025). Optimization of scientific research of theoretical and methodological foundations of the formation of a culture of personal health. Modern Pediatrics. Ukraine. 5(149): 54-62. doi: 10.15574/SP.2025.9(149).5462.

Aim: to optimize the scientific search for theoretical and methodological foundations of personal health culture formation by conducting a comprehensive bibliometric analysis in the Scopus database.

Materials and methods. To achieve this goal, the bibliometric analysis of publications in the Scopus scientometric database was used. An analytical query was formed with keywords reflecting the concepts of 'culture of personal health', 'theoretical and methodological foundations', 'health care', etc. Quantitative indicators (dynamics of publications, distribution by industry, geography, and authors) and bibliometric metrics (CiteScore, SIR, SNIP) were selected and analyzed.

Results. 828 scientific publications were identified, 538 of which were published in the last decade, which indicates the actualisation of the problem of health culture formation in the modern scientific space. Most researches are related to the medical field, social sciences, and engineering, which emphasises the interdisciplinary nature of the topic. The leading countries in terms of the number of publications are the United States, the United Kingdom, Australia, Canada, and China. The largest number of sources falls on recent years, which reflects the growing interest in health promotion, in particular, in the context of global challenges.

Conclusions. The results of the study confirm the growing attention to the formation of a culture of personal health as an important component of preventive medicine, education, and social initiatives. The identified trend towards the integration of various fields of knowledge opens up additional prospects for the development of comprehensive methods and strategies in the field of health promotion. In the future, it is advisable to carry out an in-depth analysis of the qualitative aspects of publications, as well as to develop scientifically sound recommendations for the implementation of appropriate approaches in practice.

No conflict of interest was declared by the authors.

Keywords: health culture, theoretical and methodological foundations, health promotion, scientometric analysis, Scopus, interdisciplinarity.

Оптимізація наукових досліджень теоретико-методологічних засад формування культури здоров'я особистості

А.С. Сверстюк, О.А. Багрій–Заяць, С.О. Никитюк, С.С. Левенець, Т.В. Гаріян, В.Г. Дживак

Тернопільський національний медичний університет імені І.Я. Горбачевського, Україна

Мета: оптимізувати науковий пошук теоретичних та методологічних основ формування культури особистого здоров'я шляхом проведення комплексного бібліометричного аналізу в базі даних Scopus.

Матеріали та методи. Використано бібліометричний аналіз публікацій у наукометричній базі даних Scopus. Сформовано аналітичний запит із ключовими словами, що відображають поняття «культура здоров'я особистості», «теоретико-методологічні засади», «охорона здоров'я» тощо. Відібрано та проаналізовано кількісні показники (динаміка публікацій, розподіл за галузями, географією, авторами) та бібліометричні метрики (CiteScore, SIR, SNIP).

Результати. Виявлено 828 наукових публікацій, 538 з яких вийшли в останнє десятиліття, що свідчить про актуалізацію проблеми формування культури здоров'я в сучасному науковому просторі. Більшість досліджень пов'язані з медициною, соціальними науками та інженерією, що підкреслює міждисциплінарний характер теми. Лідерами за кількістю публікацій є США, Велика Британія, Австралія, Канада та Китай. Найбільша кількість джерел припадає на останні роки, що відображає щораз більший інтерес до зміцнення здоров'я, зокрема в контексті глобальних викликів.

Висновки. Результати дослідження підтверджують зростання уваги до формування культури особистого здоров'я як важливої складової профілактичної медицини, освіти та соціальних ініціатив. Виявлена тенденція до інтеграції різних галузей знань відкриває додаткові перспективи для розробки комплексних методів і стратегій у сфері зміцнення здоров'я. Надалі доцільно провести поглиблений аналіз якісних аспектів публікацій, а також розробити науково обґрунтовані рекомендації щодо впровадження відповідних підходів на практиці.

Автори заявляють про відсутність конфлікту інтересів.

Ключові слова: культура здоров'я, теоретико-методологічні засади, популяризація здоров'я, наукометричний аналіз, Scopus, міждисциплінарність.

Introduction

In recent decades, the global scientific community has increasingly recognized health as a multifaceted phenomenon that transcends purely medical issues to encompass psychological, social, economic, and cultural dimensions [5]. Health is no longer conceptualized merely as the absence of disease but rather as a holistic construct that integrates physical, mental, and social well-being [3]. Consequently, the study of health culture –

especially the culture of personal health – has gained momentum as a critical field of inquiry, prompting researchers to explore interdisciplinary and health-centric approaches [12].

A growing body of literature emphasizes the necessity of holistic strategies for health promotion, disease prevention, and the cultivation of healthy lifestyles among individuals and communities [9,10]. According to the 2022 annual report by the Ministry of Health of Ukraine, a systematic national policy aimed at improving population health indicators must prioritize the development of comprehensive educational and preventive programs [13]. This underscores the relevance of shifting from a purely biomedical model toward integrating psychological, educational, and sociocultural factors that influence health behaviors and attitudes. Moreover, it is evident that large-scale economic losses arise from temporary and permanent disability, highlighting the urgent need for a more encompassing perspective on health economics and health promotion [7].

Within the broader framework of public health, «culture of personal health» has emerged as a key concept for analyzing how values, beliefs, and behaviors coalesce to shape an individual's health-related choices and actions. Scholars emphasize that traditional approaches, such as focusing primarily on clinical interventions, may not sufficiently address the complex interplay of environmental, psychosocial, and lifestyle factors [2]. Therefore, the concept of personal health culture advocates a proactive stance, where prevention and self-management are central to maintaining and improving well-being. Along with the rapid development of digital technologies in healthcare and data analytics, new research and application methods have emerged. For example, machine learning is widely used to identify risk factors, predict disease progression, and develop targeted interventions [6]. These new tools not only enrich the theoretical basis of medical science but also contribute to a more nuanced understanding of how social and cultural variables affect individual health outcomes [16]. Furthermore, the integration of sensor technologies for functional performance monitoring in rehabilitation medicine has demonstrated the potential for real-time feedback and personalized interventions that promote self-regulation and preventative strategies [11,17].

To determine the directions in which the science of personal health culture is developing, it is important to synthesize the results obtained in different research areas. One of the most effective ways to achieve this goal is to analyse publications indexed in leading bibliometric and scientometric databases, such as Scopus [4,8]. Bibliometric methods allow us to identify the dominant theoretical and methodological approaches, assess the impact of research using citation indicators, and identify trends that influence policy and practice.

The aim of this study is to optimize the scientific search for theoretical and methodological foundations of personal health culture formation by conducting a comprehensive bibliometric analysis in the Scopus database.

Materials and methods of the study

A bibliometric approach was employed to examine the scope and trends in publications related to theoretical and methodological foundations of personal health culture formation. The Scopus database, recognized for its extensive coverage of peer-reviewed literature across multiple disciplines, was selected for the search. A comprehensive query was constructed to include key terms relevant to the culture of personal health, principles of health-preserving activities, theoretical and methodological principles of forming a culture of health, psychological aspects of health culture, healthy lifestyle, self-healing, and health technologies. The query combined these terms with additional restrictions to exclude affiliation with «russia» or «russian federation,» and encompassed publications from 1969 to 2024. Data extraction focused on variables such as the number of publications by year, subject categories (e.g., Medicine, Social Sciences, Engineering, Nursing, Public Health, Humanities), document types (journal articles, review papers, conference proceedings, book chapters), affiliations, and countries. Leading authors and major funding agencies were also identified, while citation metrics like CiteScore, SIR, and SNIP were used to gauge the impact and quality of the retrieved documents. Descriptive statistics were calculated to determine frequencies and percentages for each variable of interest, and Scopus built-in analytics facilitated the generation of visual representations (e.g., bar charts, line graphs) depicting publication dynamics. All retrieved records were screened for relevance, with duplicates and non-peer-reviewed items removed. Because this study analyzed publicly available bibliometric data rather than primary data involving human participants, no ethical approval was required. The resulting dataset provid-

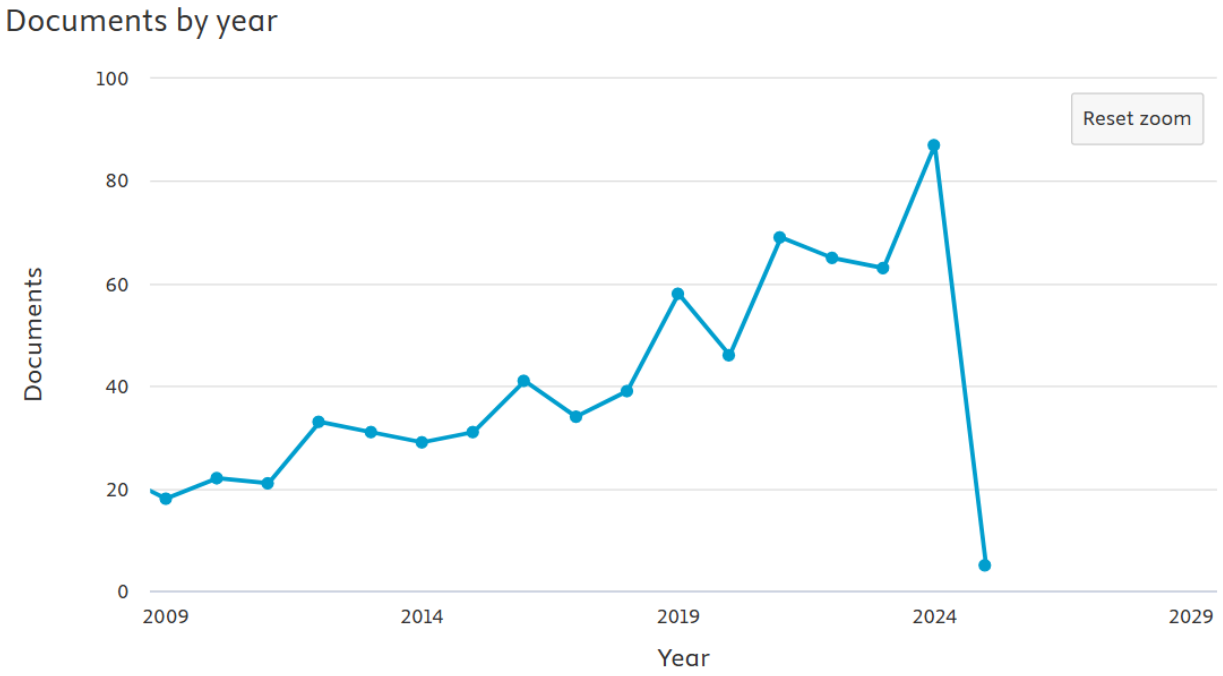

Fig. 1. Results of a search query in the Scopus scientometric database (total number of papers by year)

ed a comprehensive overview of research trends, thematic priorities, and methodological preferences in the study of personal health culture formation.

Results of the study

A bibliometric search in the Scopus database, utilizing the specified query, yielded a total of 828 publications spanning the period from 1969 to 2024. Of these, 538 were published during the last decade (2015-2024), indicating a rising scholarly interest in the theoretical and methodological dimensions of personal health culture formation. As illustrated in Figure 1, a particularly sharp uptick in publications was observed over the last three years, with 65 documents appearing in 2022, 63 in 2023, and 87 in 2024. This surge in output reflects the increasing relevance of cultivating a culture of health in a rapidly evolving global context.

In terms of subject categories (Figure 2), Medicine accounted for the largest share of contributions (409), followed by Social Sciences (179), Engineering (98), Computer Science (88), Nursing (83), and Public Health (67). Notably, the Humanities field produced 59 publications, underscoring a growing attention to the philosophical, educational, and cultural facets of health. The diverse distribution of disciplines highlights the inherently interdisciplinary nature of personal health culture research, necessitating multi-sectoral collaboration among healthcare practitioners, educators, engineers, sociologists, and policymakers.

Citation metrics, including CiteScore, the SCImago Institutions Rankings (SIR), and the Source Normalized Impact per Paper (SNIP), revealed a discernible upward trend from 2020 through 2024. As shown in Figure 3, *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* and the *International Journal of Environmental Research and Public Health* demonstrated notable increases in these metrics. Such improvements may stem from heightened interest in digital and data-driven methodologies, as well as a broader international focus on environmental and public health challenges.

An analysis of author productivity (Figure 4) identified several key researchers leading the field; their studies collectively span a wide array of subtopics, ranging from technological innovations in healthcare to the socio-psychological determinants of healthy lifestyles. This breadth reaffirms the interdisciplinary character of research on health culture. These findings suggest that the field of personal health culture formation attracts an international cohort of scholars with varied disciplinary backgrounds, highlighting the broad research interest and diverse expertise dedicated to this topic.

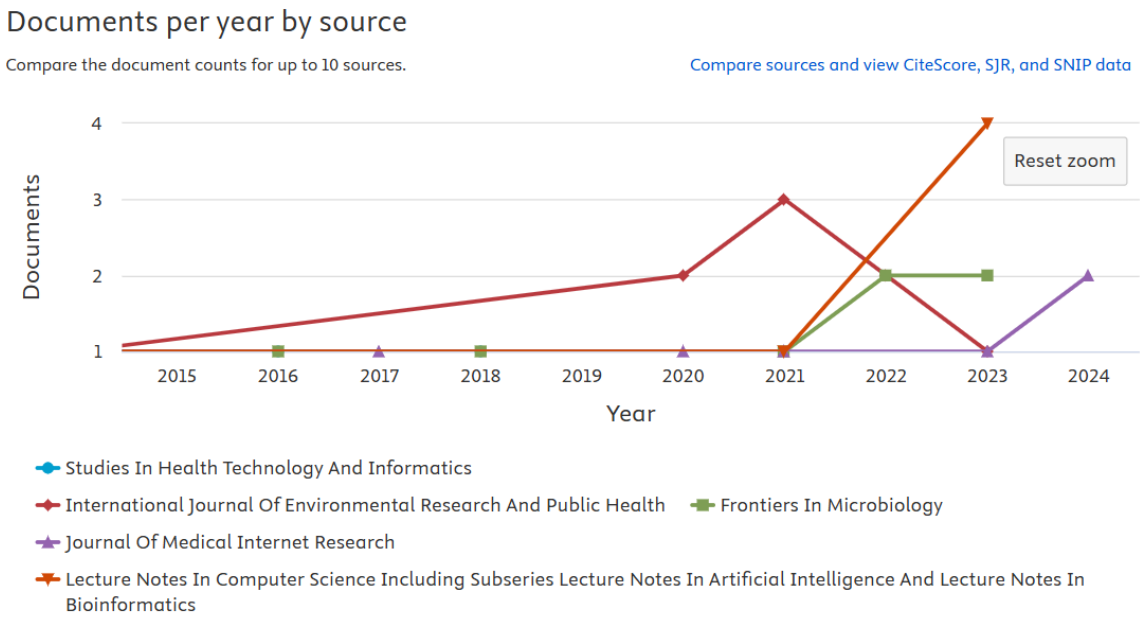

Fig. 3. Results of the search query in the Scopus scientometric database (total number of papers and comparison in CiteScore, SIR, SNIP)

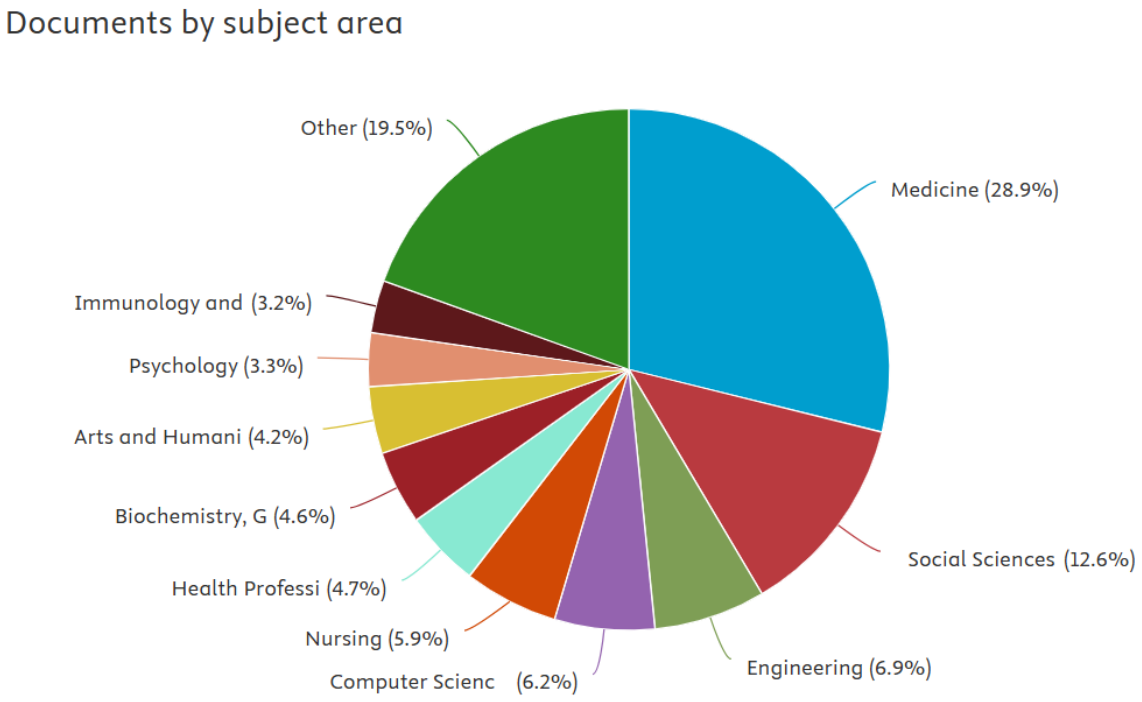

Fig. 2. The results of a search query in the Scopus scientometric database (distribution of papers by industry)

In geographic terms, the United States led all countries with 237 publications, followed by the United Kingdom (93), Australia (59), Canada (51), and China (46), as depicted in Figure 5. The predominance of developed nations suggests that institutional capacity, research funding, and robust academic networks may drive high publication outputs. Nevertheless, the international scope of these contributions points to an emerging global consensus on the necessity of fostering personal health culture.

Regarding document types, Figure 6 shows that most retrieved items were full research articles (66.5%), followed by review articles (12.1%), conference proceedings (8.3%), and book chapters (6.4%).

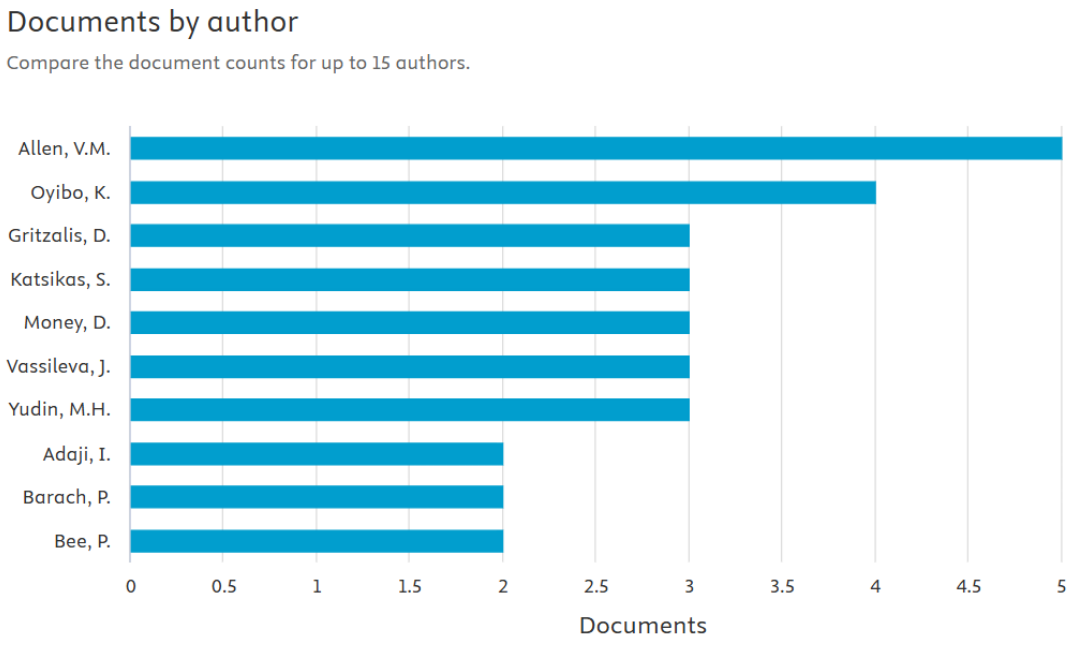

Fig. 4. The results of a search query in the Scopus scientometric database (authors)

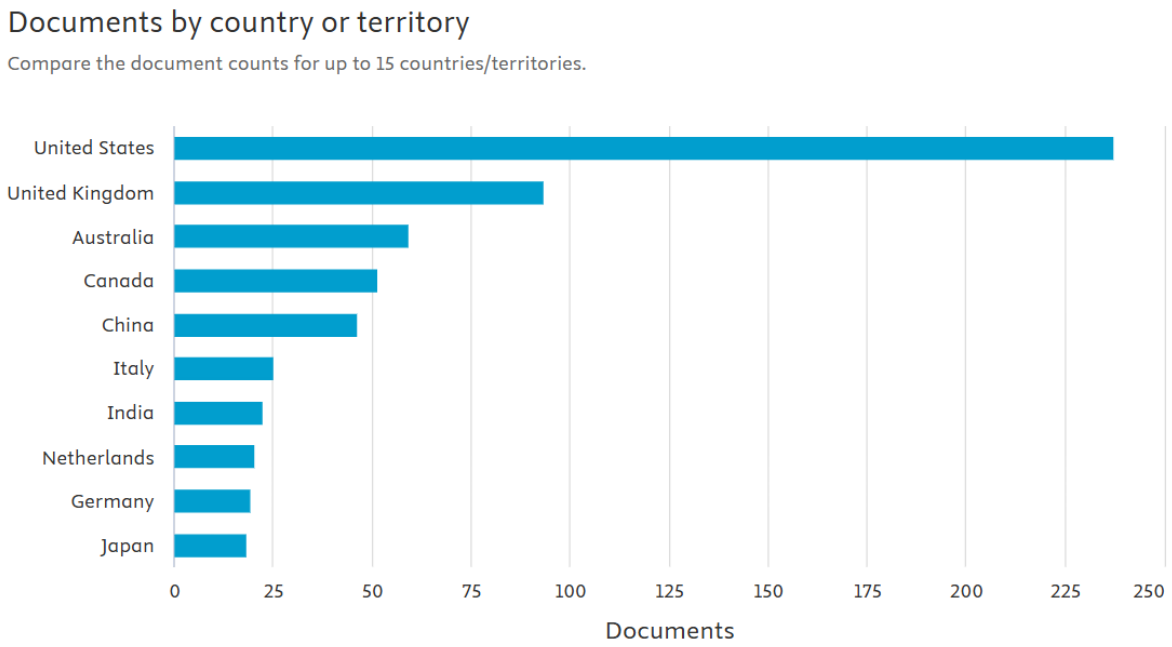

Fig. 5. Results of a search query in the Scopus scientometric database (countries)

The lower proportions of short communications and editorial materials imply that researchers prefer in-depth empirical and conceptual investigations when addressing culture of health issues.

At the institutional level, Figure 7 reveals that the University of Toronto had the highest output 9 publications), with the University of California and the University of Sydney each producing 8, and the University of Washington publishing 7 documents. These centers of higher learning appear to maintain active research programs in personal health culture, likely benefiting from both specialized faculty expertise and an emphasis on interdisciplinary collaborations.

Finally, the analysis of funding organizations (Figure 8) highlights the significant role of internatio-

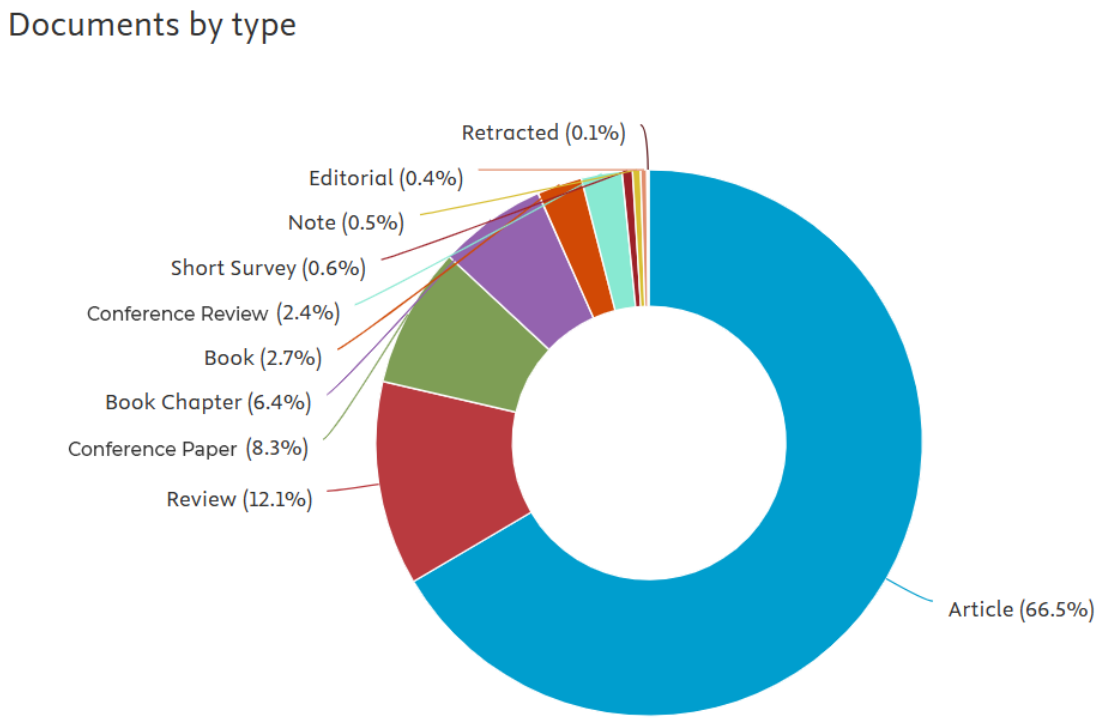

Fig. 6. Results of a search query in the Scopus scientometric database (types of publications)

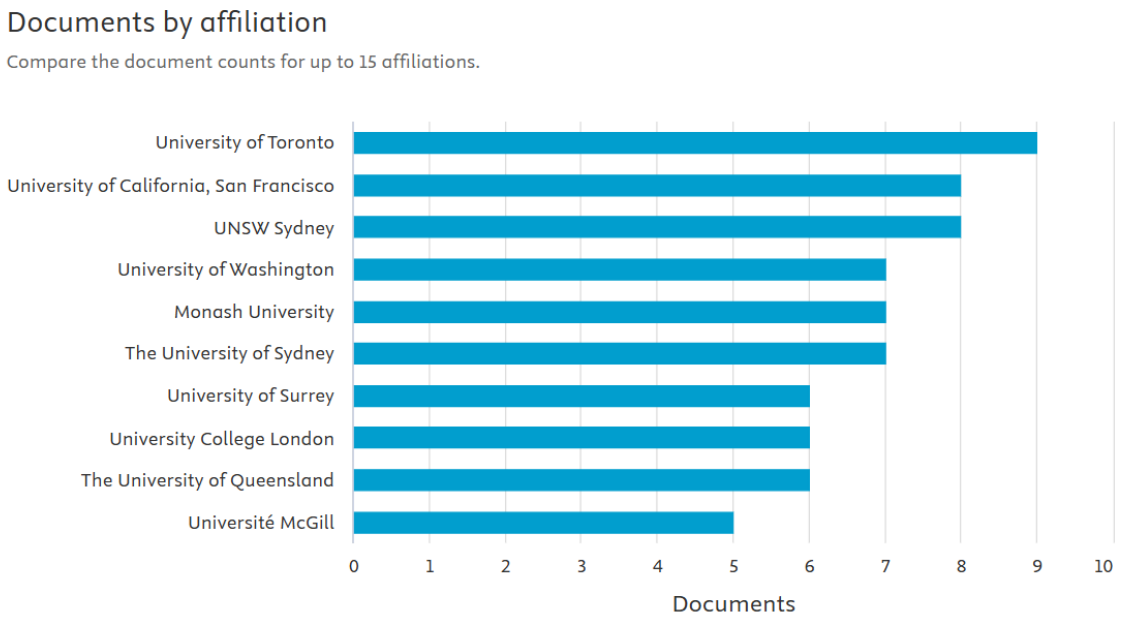

Fig. 7. Results of a search query in the Scopus scientometric database (scientific institutions)

nal and governmental bodies in supporting this domain. Chief among the sponsors is the U.S. National Institutes of Health (29 projects), followed by the U.S. Department of Health and Human Services (19), the National Natural Science Foundation of China (16), the European Commission (9), and the National Research Foundation of Korea (9). The involvement of diverse, high-profile funders emphasizes the global importance attributed to studying and promoting personal health culture.

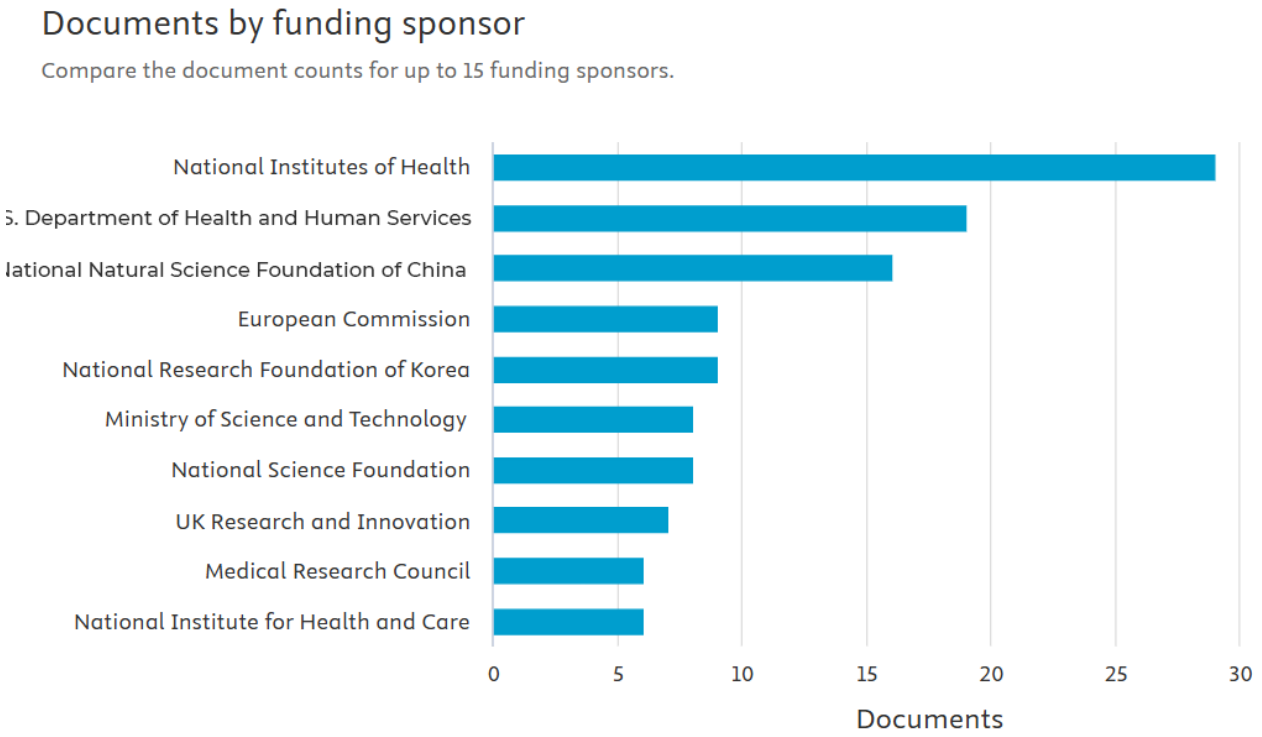

Fig. 8. Results of a search query in the Scopus scientometric database (financial sponsors)

These findings underscore a consistent upward trend in research output, an expanding range of disciplines involved, and extensive institutional and financial support for investigations into personal health culture formation. Such a multifaceted engagement highlights the critical relevance of this topic in a modern context, where holistic well-being increasingly involves the confluence of medical, social, psychological, educational, and technological dimensions.

Discussion

The findings of this bibliometric analysis underscore an ongoing and pronounced escalation in scholarly attention to personal health culture, as evidenced by the substantial increase in publication output over the last decade. This ascending trajectory aligns with the global paradigm shift in health research, which increasingly emphasizes prevention, holistic well-being, and psychosocial determinants alongside traditional biomedical approaches. Scholars have recognized that the cultivation of personal health culture is integral not only for reducing healthcare costs but also for enhancing overall quality of life, a perspective that resonates with earlier calls for more integrative public health strategies [1].

One of the more salient observations is the remarkable interdisciplinarity of the publications, reflected in the diverse subject areas engaged. While Medicine leads with the largest share of articles, strong contributions from Social Sciences, Engineering, Computer Science, and Nursing underscore the multifaceted nature of health culture. This pattern mirrors contemporary thinking that promotes healthy behaviors and attitudes, requires concerted efforts across multiple fields, including behavioral sciences, information technology, and health economics. Notably, a nontrivial proportion of articles also emerged in the Humanities and Psychology, pointing to the growing appreciation of cultural, ethical, and philosophical dimensions of health.

From a methodological standpoint, the substantial number of research articles, coupled with a noteworthy representation of review articles and conference proceedings, suggests an active and evolving academic dialogue. The strong presence of empirical studies indicates that scholars move beyond conceptual discourse to undertake more rigorous and data-driven inquiries into personal health culture [14]. At the same time, the volume of review papers implies ongoing synthesis and critical examination of existing knowledge, facilitating the

identification of research gaps and informing best practices for health promotion.

The geographic distribution of publications is illustrative of broader global trends in health research, with the United States, United Kingdom, Australia, Canada, and China emerging as leading contributors. Several factors may account for this, including robust funding mechanisms, well-established research infrastructures, and policy frameworks that prioritize health innovation. Moreover, the engagement of international funding agencies, such as the U.S. National Institutes of Health and the European Commission, underscores the high-level policy interest in understanding and shaping personal health culture. This external support fosters collaborative networks that transcend national boundaries, thereby amplifying the scope and impact of research endeavors.

Analysis of leading authors in this domain further testifies to the diverse theoretical and methodological approaches underpinning personal health culture research. While some researchers focus on technological and engineering solutions for health monitoring and intervention, others – investigate sociocultural and psychological factors shaping individual health behaviors. Such diversity in authorship backgrounds enriches the field, promoting interdisciplinary cross-fertilization that can yield more comprehensive models of health [19].

An additional consideration pertains to the observed upward trend in citation metrics (CiteScore, SCImago Institutions Rankings, and SNIP) for key journals hosting research on personal health culture. This increase points to a growing scholarly consensus around the significance of preventive strategies and health-centric paradigms. It also implies that these journals are effectively disseminating high-quality studies, thereby guiding evidence-based policy-making and clinical practice. As innovations in technology (e.g., machine learning, wearable sensors) and novel public health interventions continue to expand, it is plausible that the impact and visibility of this research domain will further intensify [15,18].

Conclusions

The conducted bibliometric analysis confirmed the undeniable growth of research interest in the formation of a culture of personal health, especially over the past decade. The interdisciplinary nature of publications, the involvement of various fields of knowledge, growing citation rates, and active support from leading international financial organisations indicate the high relevance of this issue. The obtained data indicate the need for further research, in particular comparative and qualitative, as well as the expediency of introducing innovative technologies for a deeper understanding and more effective development of the culture of personal health.

The authors declare the absence of any conflicts of interest or personal financial interests that could influence the results or interpretation of this manuscript.

REFERENCES/ЛІТЕРАТУРА

1. Abernethy A, Adams L, Barrett M, Bechtel C, Brennan P, Butte A et al. (2022). The Promise of Digital Health: Then, Now, and the Future. NAM Perspect. 2022: 10.31478/202206e. doi: 10.31478/202206e.
2. Abubakar SA, Sverstyuk A. (2024). Analytical review of publications on machine learning methods in oncology and approach to evaluating their quality. Comput Syst Inf Technol. (1): 6-16. doi:10.31891/csit-2024-1-1.
3. Amzat J, Razum O. (2014). Health, Disease, and Illness as Conceptual Tools. Medical Sociology in Africa. Springer, Cham: 21-37. doi: 10.1007/978-3-319-03986-2_2.
4. Ansorge L. (2024). Bibliometric studies as a publication strategy. Metrics. 1(1): 5. doi: 10.3390/metrics1010005.
5. Gautam S, Jain A, Chaudhary J, Gautam M, Gaur M, Grover S. (2024). Concept of mental health and mental well-being, it's determinants and coping strategies. Indian J Psychiatry. 66; Suppl 2: S231-S244. doi: 10.4103/indianjpsychiatry.indianjpsychiatry_707_23.
6. Habehh H, Gohel S. (2021). Machine Learning in Healthcare. Curr Genomics. 22(4): 291-300. doi: 10.2174/1389202922666210705124359.
7. Hanson K, Brikci N, Erlangga D, Alebachew A, De Allegri M, Balabanova D et al. (2022, May). The Lancet Global Health Commission on financing primary health care: putting people at the centre. Lancet Glob Health. 10(5): e715-e772. Epub 2022 Apr 4. doi: 10.1016/S2214-109X(22)00005-5. Erratum in: Lancet Glob Health. 2023; 11(4): e504. doi: 10.1016/S2214-109X(23)00035-9.
8. Hashem EAR, Md Salleh NZ, Abdullah M, Ali A, Faisal F, Nor RM. (2022). Research trends, developments, and future perspectives in brand attitude: A bibliometric analysis utilizing the Scopus database (1944-2021). Heliyon. 9(1): e12765. doi: 10.1016/j.heliyon.2022.e12765.
9. Indiastari D, Fajar JK, Tamara F, Runesi O, Hakim LN, Chotimah K et al. (2024). Global prevalence and determinants associated with the acceptance of monkeypox vaccination. Narra J. 4(2): e866. doi: 10.52225/narra.v4i2.866.
10. Kumar S, Preetha G. (2012). Health promotion: an effective tool for global health. Indian J Community Med. 37(1): 5-12. doi: 10.4103/0970-0218.94009.
11. Martsenyuk VP, Kachur IV, Sverstyuk AS, Bondarchuk VI, Zavidnyuk YV et al. (2019). Monitoring of health status by functional indicators using sensors in rehabilitation medicine: A systematic review. Visnyk Nauk Doslidzhen. (2): 5-12. doi: 10.11603/2415-8798.2019.2.9971.

12. Ma W, Liu Q. (2023). Language and health studies in the era of holistic health: Achievements and prospects. Lang Health. 1(2): 1-11. doi:10.1016/j.laheal.2023.11.001.
13. Ministry of Health of Ukraine. (2024). Annual report on the state of health of the population of Ukraine and the epidemiological situation for 2022. Kyiv: Ministry of Health of Ukraine. URL: https://moz.gov.ua/uploads/ckeditor/документи/Документи%202024/документи%2001-2024/29-01-2024/1/Щорічний%20звіт%20про%20стан%20здоров'%D1%8F%20та%20епідемічну%20ситуацію%20за%202022%20рік.pdf.
14. Lim WM. (2024). What is qualitative research? An overview and guidelines. Australas Mark J. 33(2). doi: 10.1177/14413582241264619.
15. Saad HS, Zaki JFW, Abdelsalam MM. (2024). Employing machine learning and wearable devices in healthcare system: tasks and challenges. Neural Comput Appl. 36: 17829-17849. doi: 10.1007/s00521-024-10197-z.
16. Sverstiuk A, Nykytyuk S, Synytska V, Antiuk Z, Kyrychok O. (2024). Optimization of the scientific search for Lyme borreliosis severity diagnostics. East Ukr Med J. 12(4): 767-776. doi:10.21272/eumj.2024;12(4):767-776.
17. Szabo DA, Neagu N, Teodorescu S, Apostu M, Predescu C et al. (2023). The Role and Importance of Using Sensor-Based Devices in Medical Rehabilitation: A Literature Review on the New Therapeutic Approaches. Sensors (Basel). 23(21): 8950. doi: 10.3390/s23218950.
18. Wei S, Wu Z. (2023). The Application of Wearable Sensors and Machine Learning Algorithms in Rehabilitation Training: A Systematic Review. Sensors. 23(18): 7667. https://doi.org/10.3390/s23187667.
19. Yu L, Yan Y, Li M. (2022). Does Interdisciplinary Research Lead to Higher Faculty Performance? Evidence from an Accelerated Research University in China. Sustainability. 14(21): 13977. https://doi.org/10.3390/su142113977.

Відомості про авторів:
Сверстюк Андрій Степанович – д.техн.н., проф. каф. медичної інформатики ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0001-8644-0776.
Багрій-Заяць Оксана Андріївна – к.техн.н., доц. каф. медичної фізики діагностичного та лікувального обладнання ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0002-5533-3561.
Никитюк Світлана Олексіївна – д.мед.н., проф. каф. дитячих хвороб з дитячою хірургією ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0003-3146-9664.
Левенець Софія Сергіївна – к.мед.н., доц. каф. дитячих хвороб з дитячою хірургією ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0002-2400-8328.
Гаріян Тетяна Вікторівна – к.мед.н., доц. каф. дитячих хвороб з дитячою хірургією ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0002-9882-9831.
Дживак Володимир Георгійович – д.філос., асистент каф. дитячих хвороб з дитячою хірургією ТНМУ ім. І.Я. Горбачевського. Адреса: м. Тернопіль, Майдан Волі, 1. https://orcid.org/0000-0002-4885-7586.
Стаття надійшла до редакції 19.02.2025 р., прийнята до друку 10.09.2025 р.