



Bibliometric analysis of journal publication activity “Maternal and Child Health”, according to RSCI data: Part I

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Abstract. The study is devoted to a bibliometric analysis of the publication activity of the journal Maternal and Child Health based on data from the Russian Science Citation Index for the period 2009-2025. The study aimed to assess the comparative position of the journal Maternal and Child Health among the leading medical journals in Kyrgyzstan, to track the dynamics of the publication flow and thematic structure, and to conduct a comparative analysis of the journal's publication activity with the leading medical journals in Kyrgyzstan. A retrospective bibliometric analysis was conducted of 512 articles from the journal Maternal and Child Health and four other medical journals indexed in the Russian Science Citation Index database. The dynamics and total number of publications and citations, two-year and five-year impact factors, ten-year Hirsch index, Herfindahl indices for citing journals and organisations, Gini index, as well as the thematic structure were evaluated using VOSviewer version 1.6.20. The journal Maternal and Child Health ranks second in total citations (988), demonstrating the highest average number of citations among medical journals in Kyrgyzstan (1.93), and has good indicators for the two-year impact factor; Herfindahl index for organisations, and Gini index. The journal's publication flow is

Suggested Citation:

Brimkulov N, Dzhunushalieva G, Mambetalieva B, Isaeva A. Bibliometric analysis of journal publication activity “Maternal and Child Health”, according to RSCI data: Part I. Eurasian Health J. 2025;17(4):226-240. DOI: 10.54890/1694-8882-2025-4-226

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wave-like, with peaks in 2016 and 2024, and a predominance of paediatric studies, while the proportion of works on obstetrics and gynaecology is declining. The thematic structure is characterised by six clusters, with a stable core of research areas covering childhood diseases, the health status of children and mothers, epidemiological studies, quality of life issues, and treatment and rehabilitation problems. The results indicate that the journal has high potential for development, provided that publishing activities are regular and strategically oriented

Keywords: publication activity; Russian Science Citation Index; Maternal and Child Health journal; intellectual text analysis; scientific publications; healthcare

Introduction

For a decade, the publication activity of medical journals has been considered one of the key indicators of the scientific potential of the healthcare system [1]. In the Kyrgyz Republic, there is an increasing emphasis on publications that serve to accumulate, verify, and disseminate new knowledge. This is relevant in the field of maternal and child health, as the quality of scientific research is directly linked to the justification of clinical recommendations, the introduction of modern technologies for prevention, diagnosis and treatment, and the formation of policies in the field of motherhood and childhood [2,3]. Analysis of the publication activity of medical journals can be used to assess the intensity and focus of scientific research and identify priority thematic areas [4]. Thus, bibliometric analysis of publications on maternal and child health is relevant as a tool for monitoring and strategic planning of scientific research development [4,5].

The journal Maternal and Child Health (MCH) is a leading scientific and practical medical publication, published since 2009 by the National Centre for Maternal and Child Health under the Ministry of Health of the Kyrgyz Republic [6,7]. To develop the journal, it is necessary to analyse publication activity. However, no targeted bibliometric analysis of MCH publications has been conducted, which limits the possibility of objectively assessing its contribution to the development of national scientific potential. The development of information and bibliometric databases has made it possible to objectively assess publication activity, and the Government of Kyrgyzstan therefore encourages scientific journals to be included in the Russian Science Citation Index (RSCI), Web of Science and Scopus databases [4]. One of the key platforms for the Russian-language scientific community is the scientific electronic library eLIBRARY.RU, which is the largest in Russia and significant for Kyrgyzstan [7], and RSCI is integrated into it [7]. RSCI is a national information and analytical system that accumulates information about publications and their citations and provides tools for evaluating the performance and effectiveness of individual scientists, scientific organisations and journals [7]. Since MCH is indexed in RSCI, the use of RSCI data is the most effective way to conduct a comprehensive bibliometric analysis. The study aimed to conduct a bibliometric analysis of the

publication activity of MCH for the subsequent development of a potential strategy for MCH in the field of maternal and child health care.

Materials and Methods

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) diagram was used to demonstrate the process of searching, screening, and selecting scientific articles and journals [8]. A total of 130 journals were identified in the country; 115 were removed, and 10 were excluded based on the exclusion criteria. 512 articles were downloaded from MCH, of which 2 articles without the author's attribution were excluded (Fig. 1). A retrospective bibliometric analysis of MCH's publication activity was conducted from 2009 (the year of its foundation) to 30 November 2025, using RSCI database [9]. Thus, 61 issues of the MCH journal, including 512 articles, were indexed in the RSCI. Descriptive data analysis was performed using pivot tables and charts in Microsoft Excel 365. For comparison analysis, four leading medical journals were selected, which are indexed in RSCI and have a total of more than 50 citations: Eurasian Health Journal, Health Care of Kyrgyzstan, Medicine of Kyrgyzstan, and Heart, Vessels and Transplantation. The following bibliometric indicators were evaluated for each journal: total number of articles and citations, two-year and five-year impact factors, ten-year Hirsch index, five-year Herfindahl index for citing journals, Herfindahl index for author organisations, and Gini index. For research question 2, the dynamics of publications by year were analysed. The text-mining techniques integrated into VOSviewer software version 1.6.20 was used to identify the thematic structure of MCH publications [10] and create a network visualisation [11]. In the network visualisation, each marked circle represents an identified term in article titles, with larger circles indicating higher co-occurrences [10,11]. The length and thickness of the lines between the circles reflect the strength of the links between the terms, and the colours of the circles and lines are determined by the cluster to which they belong [10]. This study used publicly available data from the RSCI database, and did not involve people, patient data or experimental procedures, so formal ethical approval was not required.

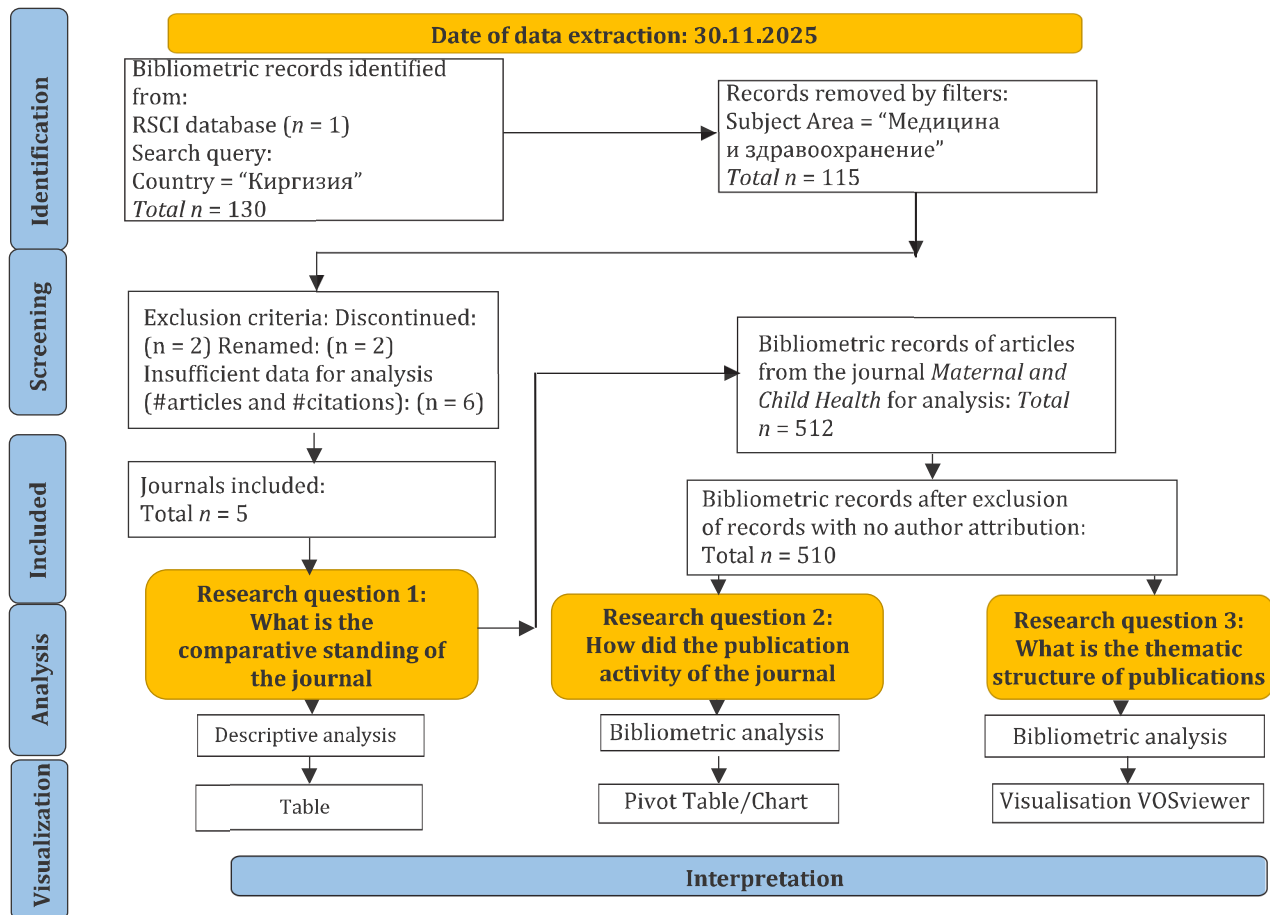


Figure 1. PRISMA flow-diagram reflecting the process of selecting publications for bibliometric analysis

Source: compiled by the authors

Results

Comparative position of the journal "Maternal and Child Health" among leading medical publications in Kyrgyzstan based on integrated scientometric indicators

For comparative analysis, four leading medical journals in Kyrgyzstan were selected that have sufficient data on the selected integrated scientometric indicators (Table 1). In terms of total citations in the RSCI, MCH (988 citations) ranks second among medical journals in Kyrgyzstan, only behind the Eurasian Health Journal (1,222) and ahead of other journals (Table 1). At the same time, in terms of the number of articles published, MCH (512 articles) ranks fourth among five journals [7,9]. The most relevant indicator is the average number of citations per article, with MCH proving itself the most influential journal in the Kyrgyz Republic. The indicator of 1.93 means that there are almost 2 citations per article according to RSCI last data. Meanwhile, despite the large number of articles, the other journals have an average citation indicator below 1. However, an analysis of integrated scientometric indicators shows a less favourable picture. According to the two-year impact factor (IF_2), MCH (0.114; value calculated for 2023, no data available for 2024) ranks third, behind the journals Eurasian Health Journal (0.250) and

Health Care of Kyrgyzstan (0.123). The five-year impact factor of MCH ($IF_5 = 0.024$) is the lowest among the publications compared, indicating an unstable publication record over the last five years. The ten-year Hirsch index for MCH ($HI_{10} = 3$) also remains the lowest among the five journals (for the leader – 9), reflecting the limited number of articles that have received consistent citations [9].

Citation concentration indicators are notable. According to the 5-year Herfindahl index for citing journals, MCH has the highest value (HHI: 5,000), while for the Eurasian Journal of Health and Heart, Vessels and Transplantation, the index is 2,316 and 2,000, respectively. MCH ranks third in the Herfindahl index for author organisations, with a score of 2,027. High Herfindahl index values are interpreted as a sign of high citation concentration in a narrow circle of journals and organisations, often associated with self-citation and closed scientific communication [12]. The Gini index of MCH is 0.60, which indicates a moderate unevenness in the distribution of citations among the journal's articles. For the journals Health Care of Kyrgyzstan (0.98), Heart, Vessels and Transplantation (0.94), Eurasian Journal of Health (0.92), and Medicine of Kyrgyzstan (0.81), this index tends towards 1 (maximum inequality), which indicates the dominance of the most cited articles and possibly self-citation or low-quality publications.

Table 1. Key scientometric indicators of the top 5 medical journals in Kyrgyzstan according to RSCI data

No.	Journal name	Number of issues	Number of articles	Total number of citations in RSCI	Average number of citations	IF ₂	IF ₅	HI ₁₀	HHI (journals)	HHI (organisations)	Gini index
1	<i>Eurasian Journal of Health</i> (until 2023 – Bulletin of the Kyrgyz State Medical Academy named after I.K. Akhunbaev). Publisher – I.K. Akhunbaev Kyrgyz State Medical Academy	77	2,124	1,222	0.58	0.250	0.165	9	2,316	3,291	0.92
2	Maternal and child health Publisher – National Centre for Maternal and Child Health under the Ministry of Health of the Kyrgyz Republic	61	512	988	1.93	0.114 (2023)	0.024	3	5,000	2,027	0.60
3	Healthcare in Kyrgyzstan (formerly Healthcare in Kirghizia) Publisher – Editorial office of the journal under the Ministry of Health of the Kyrgyz Republic	134	2,831	843	0.30	0.123	0.139	5	729	1,830	0.98
4	Medicine in Kyrgyzstan Publisher – Multidisciplinary Clinic KAMEK LLC	69	1,222	708	0.58	0.036	0.065	7	833	1,733 (2023)	0.81 (2023)
5	Heart, Vessels, and Transplantation Publisher – Centre for Scientific Research and Development of Education (CSR&DE)	34	432	106	0.25	0.057	0.047	4	2,000	3,333	0.94

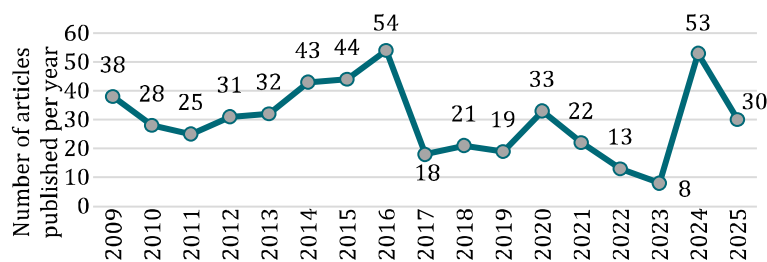
Note: IF₂ – two-year impact factor; IF₅ – five-year impact factor; IH₁₀ – ten-year Hirsch index; HHI – five-year Herfindahl index. All data for 2024 was obtained on 30 November 2025, but figures for 2023 are shown in brackets if no data is available for 2024
Source: compiled by the authors

An interesting fact is the increase in article views in 2024, to 3,126 (the maximum was 3,605 in 2022). The number of downloads per year is 735 in 2024, which indicates a growing interest in MCH publications. Thus, the latest data confirm that MCH occupies one of the leading positions in terms of the average number of citations and has positive key integrated scientometric indicators for the two-year impact factor, the Herfindahl index for organisations, and the Gini index.

Dynamics of the number of publications in the journal “Maternal and Child Health” for 2009-2025

From its founding (2009) to November 2025, the journal Maternal and Child Health published 512 articles in 61 issues [9]. The distribution of publications by year

is characterised by marked unevenness, with several phases of growth and decline (Fig. 2). In the initial period (2009-2011), there was a decline, followed by steady growth (2012-2016), with the number of publications rising from 25 in 2012 to a peak of 54 in 2016. However, in 2017, there was a sharp decline, which continued until 2019. In 2020, all Kyrgyz journals saw an increase in publications, as did MCH with 33 articles, but this was followed by an even sharper decline to 8 articles included in the RSCI database in 2023. A sharp increase in publication activity occurred in 2024: the number of articles rose to 53, almost reaching the 2016 level. As of 30 November 2025, 30 articles have been published, which shows the instability of the dynamics and the need to improve the publication system and attract new authors.

**Figure 2.** Dynamics of the number of publications in the journal Maternal and Child Health for 2009-2025

Source: compiled by the authors

The thematic structure of publications in the journal *Maternal and Child Health*

An analysis of the distribution of keywords shows that they are not standardised, with the top 10 keywords including: “дети” (221 articles), “children” (219), and “балдар” (135), which is a single word when standardised. Similarly, the keywords “лечение” (38), “treatment” (33) and “дарылоо” (25) or “профилактика” (29) and “prevention” (20) can also be combined into a single keyword. In this

regard, the use of keywords to analyse the thematic structure of publications was not adequate. Therefore, the text-mining technique was conducted using the co-occurrence analysis of terms in article titles, constructed using NLP natural language processing algorithms. A thesaurus file was prepared to combine synonyms and abbreviations. VOSviewer generated six clusters from the 46 most frequently occurring terms (out of 1,003 detected terms) with a minimum of eight occurrences (Fig. 3).

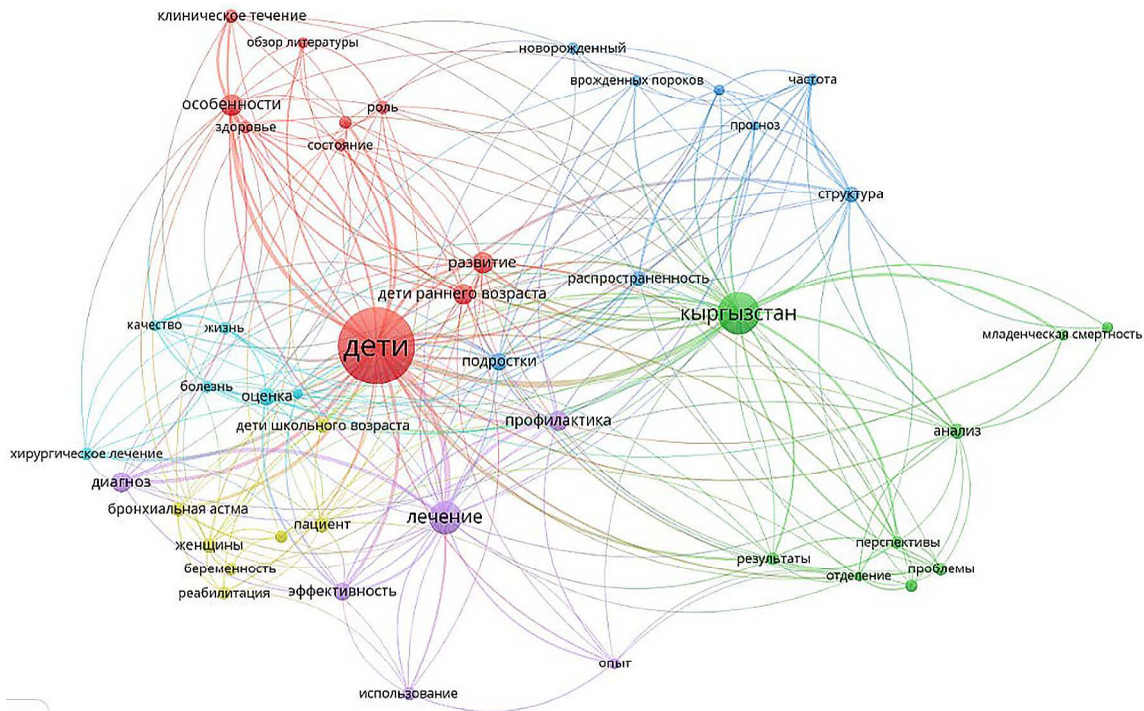


Figure 3. Network visualisation of terms identified in the titles of articles

Source: compiled by the authors

The red cluster represents the main area of paediatric research focused on children (223 occurrences of this term in the titles of articles in this journal) as the main population of interest. The predominant focus is on young children (“дети раннего возраста”) (26), health and status (“состояние”) (11) and the clinical course (“клиническое течение”) (13) of diseases, especially respiratory diseases such as pneumonia (11). Overall, the cluster reflects fundamental biomedical perspectives and development prospects in child health research.

The green cluster focuses on the state of child and maternal health in the Kyrgyz Republic (83). The popularity of the terms analysis (“анализ”) (15), results (“результаты”) (11) and problems (12) indicates evaluative and diagnostic studies, which are often institutionalised through the National Centre for Maternal and Child Health (11). The inclusion of the terms infant mortality (“младенческой смертности”) (9) highlights concerns about mortality determinants and

systemic deficiencies. Thus, this cluster reflects applied, health system-oriented scientific research.

The dark blue cluster reflects epidemiological and structural analyses of health conditions affecting newborns (“новорожденный”) (10) and adolescents (“подростки”) (19). Terms such as prevalence (“распространенность”) (15), incidence (“частота”) (10) and structure (“структура”) (17) indicate quantitative population studies, while risk factors (9) and forecast (“прогноз”) (8) reflect analytical modelling of disease determinants and outcomes. The presence of the terms congenital defects (“врожденные пороки”) (9) and newborn (“новорожденный”) indicates the key research areas of this cluster.

The yellow cluster combines maternal health, school-age children (“дети школьного возраста”) (13) and chronic disease management, with bronchial asthma (“бронхиальная астма”) (13) becoming the key disease. The combination of the terms: patient (“пациент”) (14), management (“управление”) (11)

and rehabilitation (“реабилитация”) (11) demonstrates priority on patient and organisation of care that exceeds the scope of diagnosis and continues with long-term health maintenance. The integration of the terms pregnancy (“беременность”) (12) and women (“женщины”) (14) shows a bias towards obstetrics and gynaecology.

The purple cluster prioritises interventions where treatment (54) is the dominant factor. Research within this theme evaluates diagnostic approaches (“диагноз” – 25), treatment methods and prevention strategies (“профилактика” – 23), with a particular focus on effectiveness (“эффективность”) (20). Terms such as experience (10) and use (12) indicate practice-based evidence and applied clinical knowledge.

The light blue cluster focuses on the impact of diseases (“болезни” – 10) on quality (“качество” – 9) and living conditions (“жизнь” – 10), integrating clinical assessment (19) with treatment typologies, including surgical treatment (“хирургическое лечение” – 11). The interrelationship of these terms points to a perspective of treatment outcomes and quality of life, where success is measured not only clinically but also in terms of patient well-being. This theme is consistent with treatment outcome studies and comparative effectiveness research.

Discussion

This study represents the inaugural effort to perform a bibliometric analysis of the publication activities associated with MCH, determining its comparative position among medical journals in Kyrgyzstan, studying the dynamics of the journal's publication activity in the period from 2009 to 2025, as well as the thematic structure of its publications. The results show that the journal *Maternal and Child Health* occupies a prominent place in the national scientific space, but its scientometric profile is characterised by marked heterogeneity. In terms of the total number of citations and the average number of references per article, MCH is comparable to the leading medical journals in Kyrgyzstan and surpasses them in some areas, while in terms of integral impact indicators (impact factors, Hirsch index), it remains in the group of publications with an average or moderately low level of scientific visibility. This situation is typical for medical journals in the post-Soviet countries. Despite their high publication activity (11th place in the world in terms of the number of publications in Web of Science), Russian medical journals have a low share of publications in the field of medicine (7.1%) compared to global leaders, where this figure exceeds 30-40% [13]. Similar trends are observed in Kazakhstan, where medical journals face problems of standardisation, limited international indexing and low citation rates [14].

The dynamics of the journal's publication flow confirm that its development is wave-like, with periods

of sharp growth and equally pronounced decline. Similar fluctuations in publication activity have been described for other national medical journals, where spikes in volume are often associated with administrative decisions to increase reporting requirements or changes in the system of certification of scientific personnel [2,12,13]. Notably, the peak in 2024 is accompanied not only by quantitative but also qualitative growth in interest in the journal, as evidenced by data on article views and downloads, although this has not yet been fully reflected in integrated scientometric indicators. The thematic structure revealed a stable core of research areas covered by the journal, including newborns, early childhood, school-age children, and adolescents. Large clusters were devoted to studying various aspects of children's and women's health; issues of diagnosis, clinical course, treatment, and prevention of the most common childhood diseases [15,16]. Publications on the results of epidemiological studies, analyses of activities in the main areas of paediatric services, and others were relevant [17,18]. The thematic structure of the clusters indicates a combination of clinically-oriented and system-oriented research, which generally corresponds to the profile of leading public health and paediatrics journals in other CIS countries [2]. At the same time, concern is warranted regarding the comparatively limited representation of obstetrics and gynecology, as well as the uneven thematic coverage observed across the study period, both of which may constrain the journal's appeal to a broader audience of women's health specialists. The thematic analysis also did not identify any publications related to the terms high altitude and hypoxia, although the influence of the climatic and geographical conditions of some regions of Kyrgyzstan on the development and course of a range of diseases is well known.

Conclusions

This study represents the first bibliometric analysis of the journal *Maternal and Child Health*, providing a comprehensive assessment of its comparative position within the national medical publishing landscape of Kyrgyzstan, the longitudinal dynamics of its publication activity between 2009 and 2025, and the thematic structure of its scientific output. The findings demonstrate that MCH occupies a prominent place in the national scientific space, exhibiting a scientometric profile broadly comparable to that of leading medical journals in Kyrgyzstan. While the journal demonstrates competitive performance in total citation counts and average citation, its integral impact indicators, including impact factor and Hirsch index, position it within the range of publications with moderate to moderately low scientific visibility.

Publication activity over the study period followed a wave-like trajectory with a notable quantitative peak in 2024. The thematic structure of the journal reflects

a stable core of clinically- and system-oriented research encompassing neonatal health, early childhood, school-age children, and adolescents, alongside epidemiological studies and analyses of paediatric service delivery – a profile broadly aligned with leading public health and paediatrics journals across the CIS region. These findings collectively suggest that while MCH has established itself as a meaningful contributor to medical science in Kyrgyzstan, targeted efforts to broaden thematic coverage, strengthen international indexing, and enhance editorial standards will be essential to elevating the journal's scientific visibility and impact at both the regional and international levels.

Acknowledgements

The authors thank the editorial office of the “Maternal and Child Health” journal for providing access to the full range of publications.

Funding

The authors declare that there was no external funding for this study.

Conflict of Interest

N.N. Brimkulov is a member of the editorial board of the “Maternal and Child Health” journal. The remaining authors declare no potential conflicts of interest.

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