

Bibliometric Analysis of Herbal Therapy Interventions for Postpartum Depression in Maternal Health

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ABSTRAK

Background: Postpartum depression (PPD) is one of the most common maternal mental health disorders, affecting mothers' well-being, maternal–infant bonding, and child development. Although pharmacological treatment remains the standard approach, concerns regarding medication safety during breastfeeding have increased interest in herbal therapy as a complementary or alternative intervention. Scientific publications on herbal therapy for PPD have grown substantially; however, the global research landscape has not been comprehensively mapped.

Objective: This study aimed to analyze global research trends, publication characteristics, collaboration networks, influential authors, institutions, countries, journals, and emerging research themes related to herbal therapy interventions for postpartum depression in maternal health using bibliometric analysis.

Methods: A bibliometric study was conducted using publications retrieved from the Scopus database. Relevant documents published between [insert study period, e.g., 2000–2025] were identified using predefined search keywords related to *postpartum depression*, *herbal therapy*, and *maternal health*. Bibliometric indicators, including annual publication trends, country and institutional productivity, authorship, citation analysis, journal performance, keyword co-occurrence, co-authorship, and thematic evolution, were analyzed using Biblioshiny (RStudio)

Results: The bibliometric analysis demonstrated a continuous increase in scientific publications on herbal therapy for postpartum depression over the study period. Research productivity was concentrated in several high-income countries, with strong international collaborations among leading institutions. Frequently occurring keywords included *postpartum depression*, *herbal medicine*, *Chinese herbal medicine*, *maternal health*, *complementary therapy*, and *mental health*, indicating a growing research focus on integrative approaches for maternal mental health. Citation analysis identified several highly influential publications that have shaped the development of this research field, while network visualization revealed emerging themes involving complementary medicine, breastfeeding, anxiety, and maternal well-being.

Conclusion: Research on herbal therapy interventions for postpartum depression has shown significant global growth and increasing scientific interest. Bibliometric mapping provides valuable insights into the intellectual structure, research hotspots, and collaboration patterns in this field. The findings may serve as a reference for researchers, clinicians, and policymakers in developing evidence-based complementary interventions and identifying future research priorities in maternal mental health.

Keywords: bibliometric analysis; herbal therapy; herbal medicine; postpartum depression; maternal health; complementary medicine.

Kata Kunci: bibliometric analysis; herbal therapy; herbal medicine; postpartum depression; maternal health; complementary medicine.

Introduction

A mother's mental health is a crucial component of maternal health because it affects the well-being of the mother, the baby, and the family. One of the most common mental health disorders following childbirth is postpartum depression (PPD). This condition is characterized by persistent feelings of sadness, loss of interest in daily activities, sleep disturbances, anxiety, fatigue, and a decline in the mother's ability to care for her baby. The impact of PPD is not only felt by the mother but can also affect the maternal-infant attachment process, the child's cognitive and emotional development, and increase the overall burden on public health (Wang et al., 2020)

Globally, the prevalence of postpartum depression is estimated to range from 10–20% among mothers after childbirth, with higher rates found in developing countries due to various social, economic, and health factors. The World Health Organization also identifies maternal mental health disorders as one of the public health issues requiring special attention. As awareness of the importance of maternal mental health has grown, the number of scientific publications on postpartum depression has increased significantly in recent decades. A bibliometric analysis conducted by Wang and Shan (2022) showed that there were 3,789 publications related to postpartum depression indexed in international databases during the 2017–2021 period, with a trend of steadily increasing publications each year. These findings indicate that postpartum depression has become a major focus of research in the field of maternal health.

Pharmacological therapy with antidepressants remains the primary choice for the management of postpartum depression. However, their use in breastfeeding mothers often raises concerns regarding side effects, the potential for the drug to be passed to the infant through breast milk, and low patient adherence to long-term treatment. (Pan et al., 2025). These factors have spurred research into complementary and alternative therapies that are considered safer and more acceptable to postpartum mothers. One approach that has garnered significant attention is herbal therapy, including the use of Chinese Herbal Medicine (CHM), essential oil-based aromatherapy, and various other traditional herbal therapies. These approaches are considered to have relatively fewer side effects and have the potential to provide therapeutic benefits through various biological mechanisms, such as neurotransmitter regulation, anti-inflammatory activity, and reduction of oxidative stress (Hanach et al., 2023).

Various studies have reported the effectiveness of herbal therapy in reducing symptoms of postpartum depression. Li et al. (2016), in their systematic review, found that Chinese herbal medicine shows potential benefits in alleviating symptoms of postpartum depression, both as a standalone therapy and in combination with conventional treatment. Additionally, a meta-analysis conducted by Shamsunisha et al. (2023) showed that aromatherapy has a positive effect on reducing depression levels

in postpartum mothers. Recent research has also revealed that herbal therapy works through complex mechanisms involving various biological pathways that contribute to the regulation of neural and hormonal functions in postpartum mothers (Walker et al., 2021). Nevertheless, the available research remains scattered across various disciplines and has not yet been comprehensively mapped to identify global developments, trends, and research directions in this field (Wisner et al., 2013).

Bibliometric analyses specifically addressing herbal therapy interventions for postpartum depression in the context of maternal health remain very limited. Most existing bibliometric studies focus only on postpartum depression in general without identifying research trends related to herbal therapy as an alternative intervention. Therefore, the study “Bibliometric Analysis of Herbal Therapy Interventions for Postpartum Depression in Maternal Health” is novel because it aims to map global publication trends, the most productive authors, contributing institutions and countries, patterns of research collaboration, and emerging research themes related to herbal therapy for postpartum depression. The results of this study are expected to provide a comprehensive overview of the knowledge structure, identify research gaps, and serve as a foundation for the development of future evidence-based research and maternal health practices.

Objective

This bibliometric study aims to analyze and map the development of scientific publications discussing herbal therapy interventions in the management of postpartum depression in maternal health. This analysis includes identifying trends in publications, as well as the most productive authors, institutions, countries, and journals, and mapping collaboration networks and research themes based on keyword analysis.

Method

This study uses a bibliometric approach to analyze trends in scientific publications regarding herbal therapy interventions for postpartum depression in maternal health. Bibliographic data were obtained from the Scopus database through a search conducted in 2026 using a combination of the keywords “postpartum depression,” “herbal therapy,” “herbal medicine,” “phytotherapy,” “traditional medicine,” and “maternal health” with Boolean operators (AND and OR). The search was limited to articles published between 2015 and 2026, written in English, and included only articles.

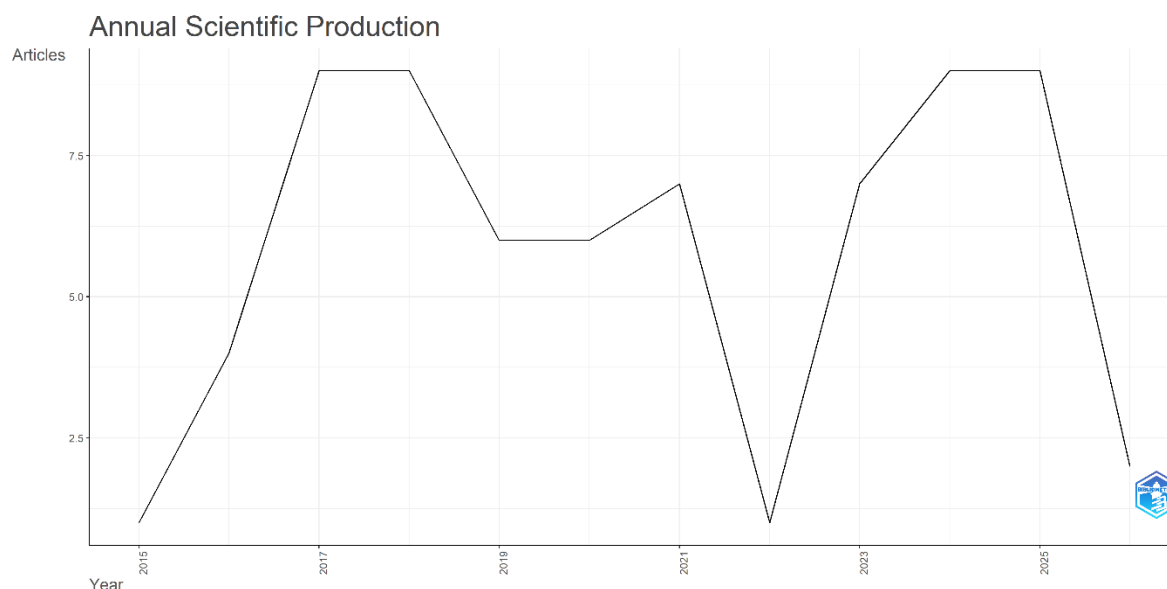
Bibliometric data visualization was performed using Biblioshiny, a web-based interface for the Bibliometrix package in R. Biblioshiny was used to process search metadata and present the analysis results in the form of graphs, network maps, and diagrams illustrating the development of scientific publications on herbal therapy interventions for postpartum depression in maternal health. The resulting visualizations include annual publication trends; the productivity of authors, journals, institutions, and

countries, co-authorship networks, co-citation analysis, keyword co-occurrence, as well as thematic maps and thematic evolution. These visualizations were used to identify patterns in research development, collaborative relationships among researchers, the intellectual structure of the research field, as well as emerging research trends and themes during the 2015–2026 period.

The inclusion criteria for this study include original research articles discussing herbal therapy interventions for postpartum depression in maternal health, published in Scopus-indexed international journals during the period 2016–2026, written in English, and containing complete bibliographic metadata. Only documents classified as “articles” were included in the analysis.

Exclusion criteria included review articles, conference papers, editorials, letters, notes, book chapters, and other document types. Additionally, articles that did not focus on herbal therapy interventions for postpartum depression, had incomplete metadata, or were duplicates were also excluded from the analysis. These criteria were applied to ensure that the bibliometric analysis was based on original research publications relevant to the study’s objectives.

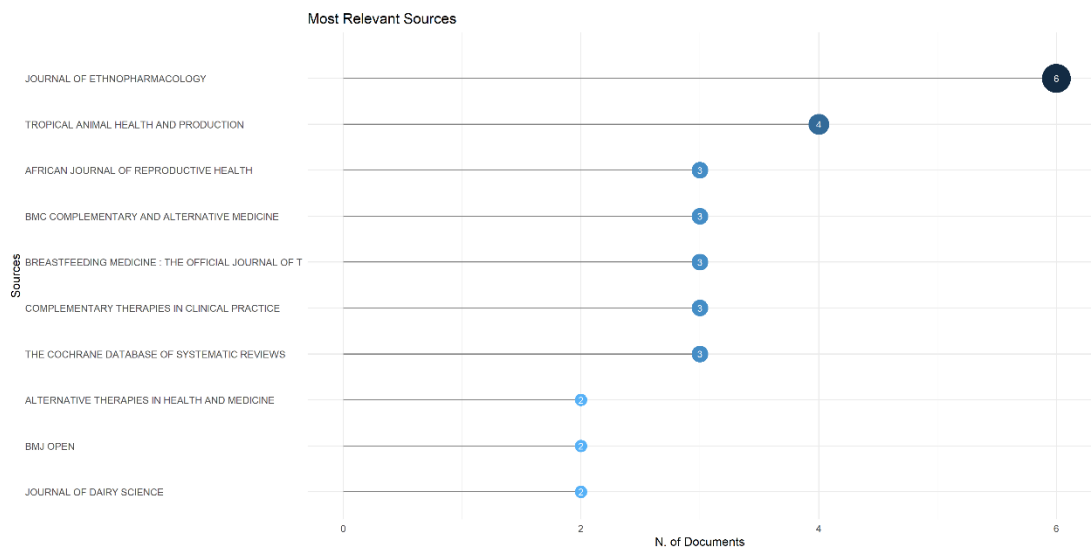
Results and Discussion



Picture 1. Annual Scientific Production

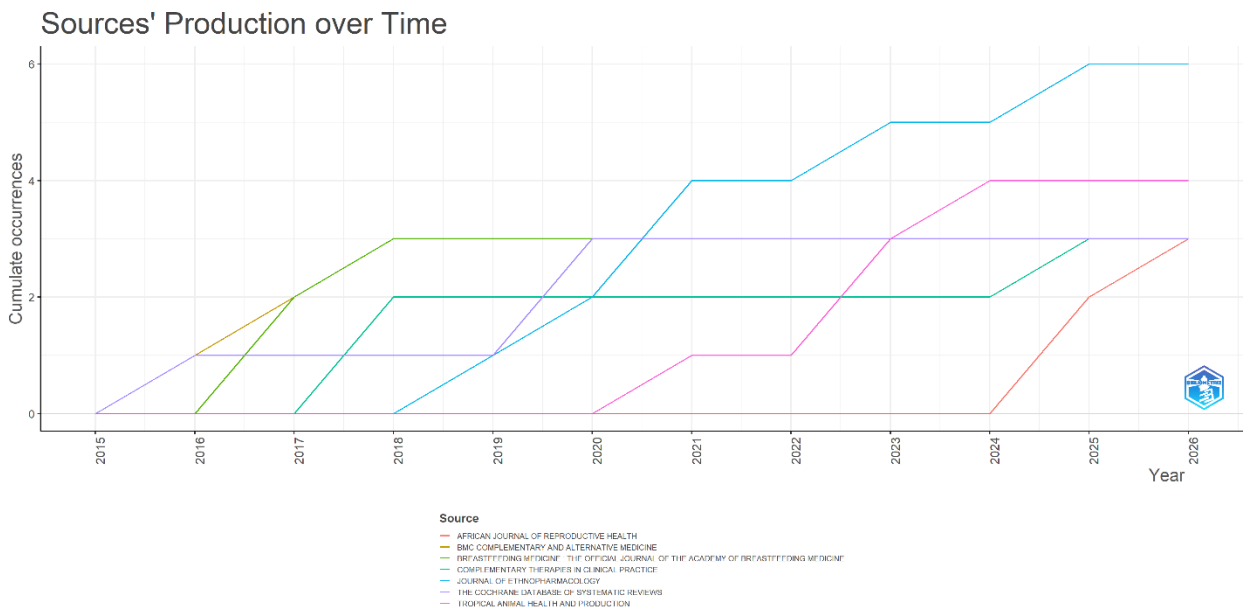
The Annual Scientific Production graph shows that the number of publications on herbal therapies for postpartum depression fluctuated during the 2015–2026 period. Publications increased from just 1 article in 2015 to 9 articles in both 2017 and 2018. After a decline during the 2019–2022 period, the number of publications rose again in 2023, peaking in 2024–2025 at 9 articles per year. The decline in 2026 is likely due to an incomplete indexing process, meaning

the data for that year is not yet complete. Overall, this trend indicates growing interest among researchers in the use of herbal therapy as an intervention for postpartum depression.



Picture 2. Most Relevant Sources

The analysis results show that the Journal of Ethnopharmacology is the most productive journal, with 6 articles. Next, Tropical Animal Health and Production published 4 articles, while the African Journal of Reproductive Health, BMC Complementary and Alternative Medicine, Breastfeeding Medicine, Complementary Therapies in Clinical Practice, and The Cochrane Database of Systematic Reviews each published 3 articles. These findings indicate that research on herbal therapies for postpartum depression is frequently published in journals focused on ethnopharmacology, complementary medicine, reproductive health, and lactation.



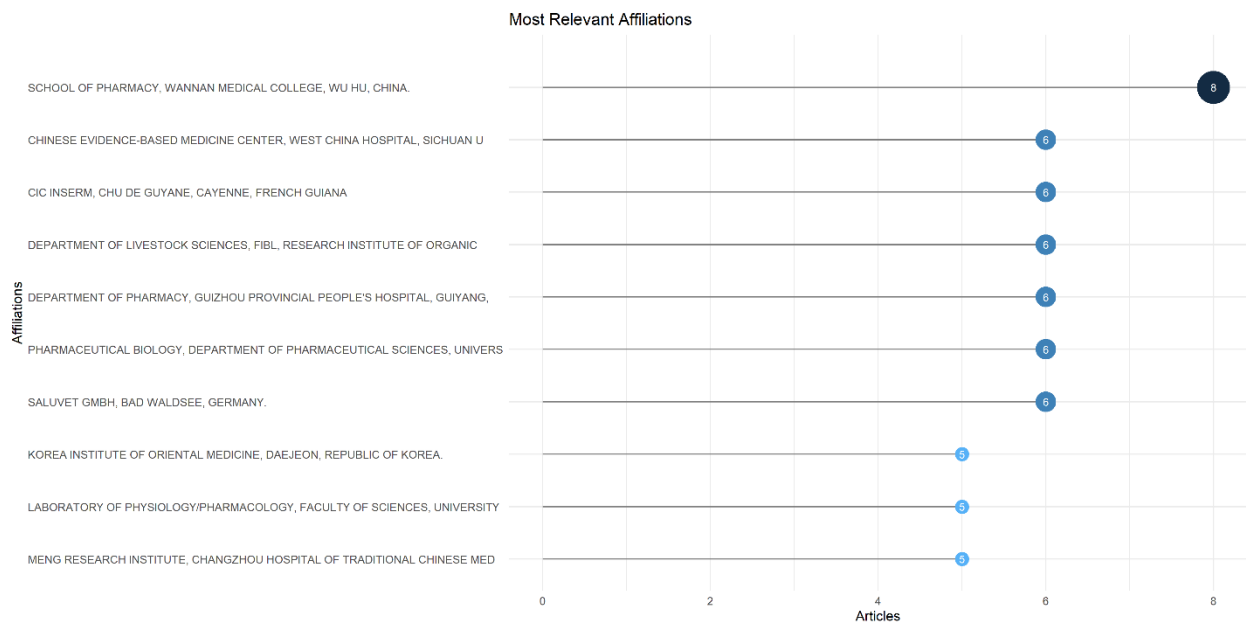
Picture 3. Source' Production Over Time

This graph shows the dynamics of journal productivity over time. The Journal of Ethnopharmacology shows the most consistent increase in publications and will remain the primary source of publications through 2025–2026. In contrast, other journals tend to have more stable publication numbers with relatively modest increases.



Picture 4. Most Relevant Authors

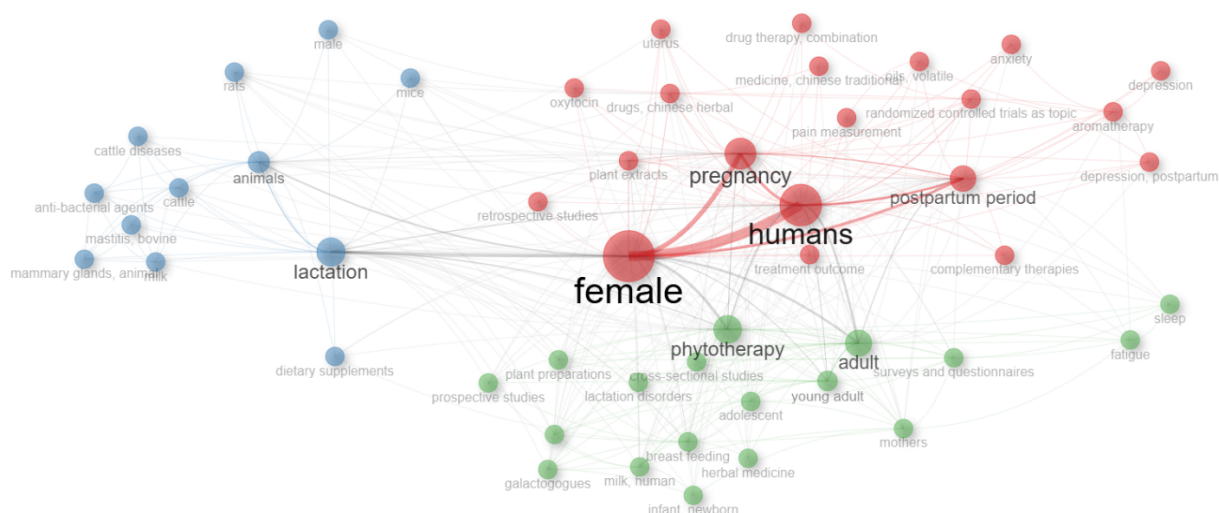
The most prolific author is Li Y, with 4 publications, followed by Graf-Schiller S, Walkenhorst M, and Zhang J, who each have 3 publications. The other authors have two publications each. This indicates that research in this field is still dominated by a small number of researchers who are actively exploring herbal therapies for postpartum depression.



Picture 5 Most Relevant Affiliations

The most productive institution was the School of Pharmacy at Wannan Medical College in China, with 8 publications. Several other institutions, such as West China Hospital, Sichuan University, the University of Basel, Guizhou Provincial People's Hospital, and the FiBL Research Institute of Organic Agriculture, each produced 6 publications. The dominance of Chinese institutions reflects the country's strong focus on herbal therapy research.

Overall, the results of the bibliometric analysis show that research on herbal therapy interventions for postpartum depression has developed quite rapidly over the past decade. The research is dominated by journals in the fields of ethnopharmacology and complementary medicine, with the largest contributions coming from institutions in China. Authors such as Li Y have been major contributors in this field. Keyword analysis indicates that research focuses on women during pregnancy and the postpartum period, the use of phytotherapy, and maternal health. These findings suggest that herbal therapy is an evolving topic with great potential to be developed as a complementary approach in the management of postpartum depression.



Picture 6 Co-occurrence Network

Based on the Co-occurrence Network visualization from Biblioshiny, it can be interpreted that research on herbal therapy interventions for postpartum depression in maternal health is divided into three main, interconnected clusters. Node size indicates the frequency of keyword occurrence, while line thickness indicates the strength of the relationship between keywords.

The results of the co-occurrence analysis show that the keyword “female” is the largest node and serves as the network’s center, indicating that most studies focus on the female population as the primary subject in maternal health research. This keyword has very strong associations with “humans,” “pregnancy,” “postpartum period,” “phytotherapy,” and “lactation,” suggesting that many studies discuss the use of herbal therapy in women from pregnancy through the postpartum period. The visualization reveals three main clusters, namely:

1. The red cluster focuses on maternal health during pregnancy and the postpartum period. The dominant keywords in this cluster include female, humans, pregnancy, postpartum period, depression, anxiety, aromatherapy, complementary therapies, plant extracts, and Chinese herbal medicine. This cluster indicates that many studies evaluate the effectiveness of various herbal and complementary therapies in treating postpartum depression and anxiety, as well as in improving maternal health after childbirth.
2. The green cluster focuses on phytotherapy as its main theme. Frequently occurring keywords include “adult,” “breastfeeding,” “herbal medicine,” “galactagogues,” “mothers,” “infant,” “young adult,”

and “lactation disorders.” This cluster illustrates that herbal therapy is not only studied as an intervention for postpartum depression but is also related to increased breast milk production, the health of breastfeeding mothers, and infant health.

3. The blue cluster is dominated by the keywords “lactation,” “animals,” “rats,” “mice,” “cattle,” “milk,” “mastitis,” and “antibacterial agents.” This cluster indicates the presence of basic (preclinical) research that uses laboratory animals to evaluate the safety, mechanisms of action, and efficacy of medicinal plants before they are applied to humans.

Furthermore, the strong relationship between pregnancy, the postpartum period, phytotherapy, and lactation indicates that research on herbal therapy is evolving in a multidisciplinary manner, encompassing aspects of reproductive health, maternal mental health, and breastfeeding. Although the keywords “depression” and “postpartum depression” have appeared in the network, their node sizes are relatively smaller compared to general keywords such as “female” and “pregnancy.” This indicates that research still focuses more on maternal health in general rather than specifically exploring herbal therapies for postpartum depression.

Conclusion

Overall, the co-occurrence map indicates that research on herbal therapy in maternal health is developing along three main lines of focus: maternal health during pregnancy and the postpartum period, phytotherapy for breastfeeding mothers, and preclinical research using animal models. These findings also indicate that herbal therapy for postpartum depression remains an emerging topic, presenting significant opportunities for further research—particularly through clinical trials that evaluate its efficacy, safety, mechanisms of action, and implementation in maternal health practice.

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