Trends and Research Hotspots in Midwife-Delivered Interventions for Prenatal Depression: A Bibliometric Analysis

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Abstract. Research on midwife-delivered interventions for prenatal depression has increased substantially, yet a comprehensive understanding of publication trends, thematic evolution, and collaboration patterns remains limited. This bibliometric analysis aims to identify and evaluate scientific literature regarding midwife-delivered interventions for prenatal depression. A bibliometric analysis was conducted using relevant literature retrieved from the Scopus database by Elsevier. Articles were included based on their relevance to the topic, limited to those published between 2005 and 2025, and written in English. For data visualization and mapping, the VOSviewer software was utilized. A total of 702 articles were included in this review. The data show an increase in research over the past 20 years. Research on depression during pregnancy demonstrates a variety of intervention approaches, ranging from psychological therapies to community support and digital technologies. The visualization results show three clusters reflecting the psychological conditions experienced by women during pregnancy and after childbirth, the role of midwives in psychosocial interventions such as counseling or education, and patient demographics and social factors contributing to maternal mental health. In terms of collaboration, the UK, the USA, and Australia occupy a central position, with large node sizes and many connections, indicating a high volume of publications and a strong intensity of international collaboration. The development and evaluation of alternative interventions, such as digital technology and community-based approaches, also need to be improved, particularly in countries with low publication rates. Furthermore, broadening collaboration with developing countries needs to be expanded to develop equitable, context-specific interventions.

Keywords: Bibliometric Analysis, Intervention, Midwife, Prenatal Depression

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1 Introduction

Perinatal depression is a major depressive episode that occurs during the pregnancy period until four weeks postpartum, with symptoms potentially persisting for up to one year (Wolak et al., 2025), whereas prenatal depression refers to depression occurring during pregnancy. Prenatal depression is one of the most common complications during the prenatal period. Approximately 20% of women in low- and middle-income countries (LMICs) experience this mental health condition during the pregnancy period or within one year after delivery. According to the Asia-Pacific Consensus Statement on Perinatal Depression and Anxiety, Southeast Asian countries report one of the highest numbers of antenatal depression, ranging 4.9 – 46.8% and post partum depression ranging from 4.4–57.5% (Quah et al., 2025).

Women who experience prenatal depression may face serious consequences related to maternal morbidity and mortality; worse mental health may affect her well–being, infant outcomes and family, and is associated with a higher risk of obstetric complications, such as pre-eclampsia, haemorrhage, premature delivery, stillbirth, and suicide. In addition, it may reduce adherence to routine health check-ups, which leads to delayed assessment, diagnosis and treatment. As a result, adverse birth outcomes such as preterm birth, low infant weight, and intrauterine growth retardation, this condition may affected of increasing risk. Poor maternal mental health also may impact the neurological, behavioral, and emotional development in childhood. Furthermore, this condition may affected of increasing risk of feeding difficulties and impaired parental bonding (WHO, 2022). To address these challenges, routine screening and general psychosocial support from maternal and child care (MCH) providers are essential for all women during the prenatal period to discuss and manage their mental health struggles to prevent adverse outcomes (WHO, 2022). Midwives represent one of the key health care providers who frequently interact with women during the perinatal period and have a strategic position to identify and manage prenatal depression.

Bibliometric analyses are essential to identify emerging trends, dominant research themes, key publications, influential authors, leading journals, and major institutions. These analyses also help uncover knowledge gaps and highlight potential directions for future research, thereby supporting the advancement of meaningful and innovative studies in midwife-delivered interventions for prenatal depression (Wolak et al., 2025). Research on midwife-delivered interventions for prenatal depression has increased substantially, yet a comprehensive understanding of publication trends, thematic evolution, and collaboration patterns remains limited. This bibliometric analysis aims to identify and evaluate scientific literature regarding midwife-delivered interventions for prenatal depression.

2 Methods

2.1 Research strategy

The methodology employed for this study was based on bibliometric analysis. This approach enables the examination and interpretation of extensive scientific literature, providing insights into the development and progression of a specific research area, as well as identifying emerging trends within the field (Donthu et al., 2021). To generate meaningful insights, the key stages involve collecting data from relevant scientific databases, processing and refining the dataset, and subsequently applying various bibliometric methods for analysis (Passas, 2024).

2.2 Data Collection

SCOPUS database retrieved articles related to midwife-delivered intervention for prenatal depression. The search was conducted in August 2025, and the search string was developed using terms in line with the aim of this research study. Search terms associated with (1) intervention, (2) depression during pregnancy, and (3) midwife have been combined using Boolean Operators (“OR”, “AND”, “AND NOT”) and use MeSH terms. We use keywords: “intervention AND "perinatal depression" OR "prenatal depression" OR "depression during pregnancy" OR "antenatal depression" AND "midwife" AND NOT "medical doctor" AND NOT "Nurse" AND NOT "physician" AND PUBYEAR > 2004 AND PUBYEAR < 2026. All articles related to the topic have been considered relevant if they met the following criteria: (1) written in the English language, (2) focused on intervention by midwives for depression during pregnancy, (3) type is article or review, 4) final paper (not in press), and (4) published during 2005-2025.

2.3 Bibliometric Analysis

VOS viewer is a widely recognized tool in bibliometric research, extensively used for data analysis, trend identification, subject exploration, visual representation of results, evaluation of author collaborations, and institutional influence, thereby offering comprehensive support in understanding academic landscapes. In this study, VOSviewer—an open-access software designed for constructing and visualizing bibliometric maps with an emphasis on graphical output—was employed for several analyses. Both descriptive and performance analyses were conducted as standard methodologies. The most relevant authors, sources, publications, and collaboration networks were objectively identified. Keywords served as the primary unit of analysis to examine both current and emerging thematic relationships. The frequency and evolution of keywords reflect the dominant research themes and indicate the areas that have captured scholarly attention over time.

3 Results

3.1 Article selection

A total of 803 articles were found in the Scopus database. A total of 63 articles were not original research or reviews, and 8 articles were published in press. A total of 732 articles were screened, and 30 articles were not written in English. Ultimately, 702 articles were included in the review. Finally, data from the selected articles were gathered and stored in **.csv format. Figure 1 shows the PRISMA flow.

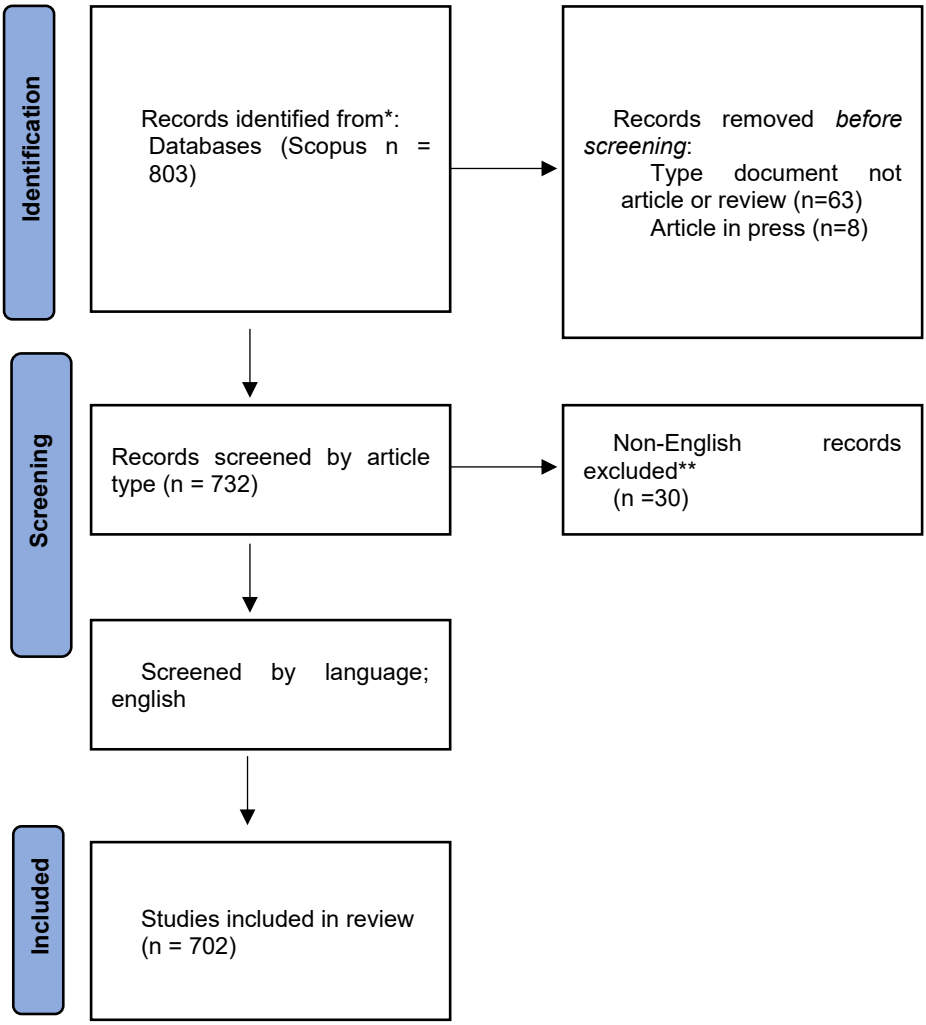


Fig. 1. PRISMA Flowchart

Figure 2 shows the annual documents in studies from 2005 to 2025. The amount of data shows an increasing number of studies discussing the topic of prenatal depression interventions by midwives over the past 20 years, with the highest number of documents recorded in 2022 and the lowest in 2005. This figure indicates that the topic remains relevant for research, as documents discussing it have existed throughout the years.

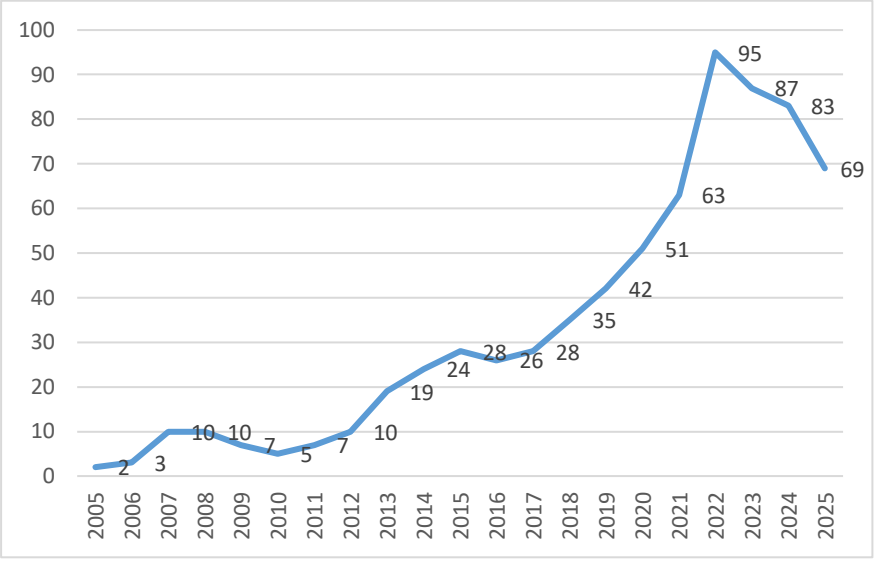


Fig. 2. Distribution of the number of papers per year.

Table 1 displays the top 10 journals that contributed to research on prenatal depression interventions by midwives, as illustrated in Figure 3. Based on the largest number of documents, Midwifery, BMC Pregnancy and Childbirth, and Women and Birth ranked highest. The midwifery source received the most citations, with 1,303 documents cited. Next in line was BMC Pregnancy and Childbirth with 42 papers cited and 953 citations.

Table 1. Source, document, and citation.

Source	Document	Citation
Midwifery	48	1303
BMC Pregnancy and Childbirth	42	953
Women and Birth	21	699
Frontiers in Psychiatry	16	229
International Journal of Environmental Research and Public Health	16	163
British Journal of Midwifery	15	123

Journal of Affective Disorders	15	373
Journal of Reproductive and Infant Psychology	13	313
Plos One	13	230
Archives of Women S Mental Health	12	194

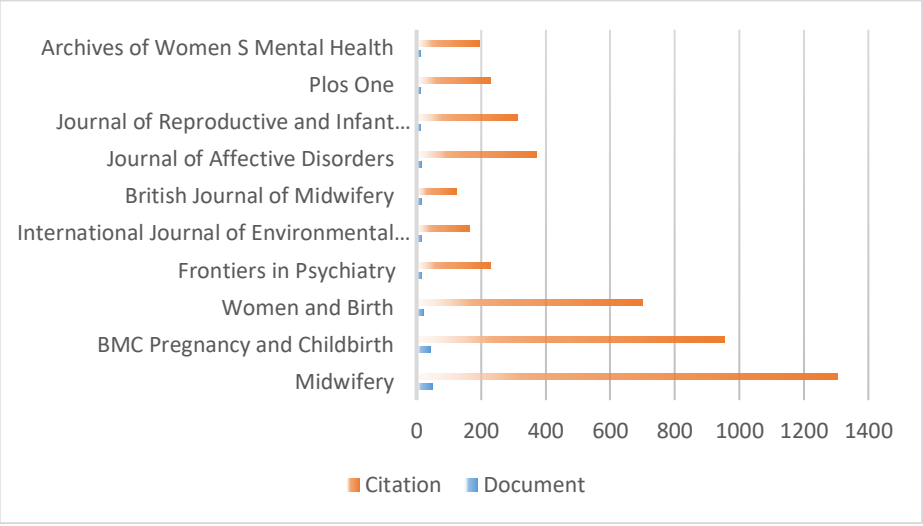


Fig. 3. Source, document, and citation

Based on the nationality of the corresponding author, Figure 4 displays the top 15 countries that published the most papers about prenatal depression interventions by midwives. The UK published the highest number of papers, followed by the United States and Australia.

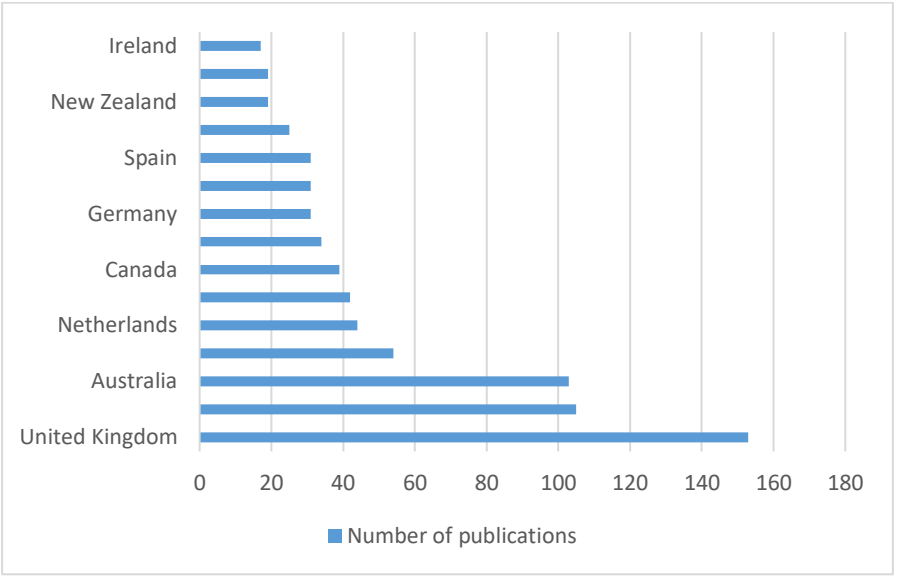


Fig. 4. Author countries

Going into the details of the authors' affiliations. Table 2 shows the most relevant affiliations' publications over time. King's College London was an institution that published 23 papers, followed by UNSW Sydney, which published 20 papers, and the University of Cape Town, which published 17 papers

Table 2. Affiliation, country, and total documents

Affiliation	Country	Total document
King's College London	UK	23
UNSW Sydney	Australia	20
University of Cape Town	South african	17
University of Melbourne	Australia	17
Universiteit van Amsterdam	Netherland	15
Karolinska Institutet	Sweden	14
Monash University	Australia	13
The University of Queensland	Australia	12
Uppsala Universitet	Sweden	11
University of Liverpool	UK	11

Table 3 shows the leading authors. Based on the analysis, Hildingsson, I. has the highest number of publications with 8 documents and 389 citations, indicating high productivity and strong influence. Despite having only 6 documents, Gamble, J.

recorded the highest number of citations with 632, indicating a very large scientific impact. Lund, C., and Honikman, S. both have 7 documents, but Lund received more citations (349) than Honikman, S (276). In contrast, Kildea, S. has the same number of publications (7), but only generated 155 citations, indicating a lower influence. Milgrom, J. has 6 documents but only 82 citations, making him the author with the smallest impact among those analyzed.

Table 3. Most leading authors

Author	Number of documents	Total citation
Hildingsson, I.	8	389
Honikman, S.	7	276
Kildea, S.	7	155
Lund, C.	7	349
Stein, D.J.	7	273
Austin, M.P.	6	121
Ayers, S.	6	219
Byatt, N.	6	169
Gamble, J.	6	632
Milgrom, J.	6	82

Table 4 shows the most relevant articles. Of the ten articles analyzed, the publication with the highest number of citations was by O'Connor et al. (2019) in JAMA, with 237 citations, indicating a significant impact in the field of perinatal depression prevention. On the other hand, Baloyi et al.'s (2024) article has not yet received any citations, likely due to its relative newness. Despite being published in the same journal (BMC Psychiatry), Evans et al.'s (2021) article received only 8 citations, significantly lower than Burns et al.'s (2013) 57 citations, indicating a stronger impact despite being older. The systematic review article by Branquinho et al. (2021) recorded 67 citations, demonstrating the importance of comprehensive reviews on this topic. Meanwhile, the qualitative and practice implementation studies by Ormsby et al. (2018) and Tessema et al. (2022) had lower citations (14 and 4, respectively), but still contributed to understanding the local context and experiences of patients and healthcare providers. Research on depression during pregnancy demonstrates a variety of intervention approaches, from psychological therapy to community support and digital technology. Therapies such as Cognitive Behavioral Therapy (CBT) and interpersonal counseling are the most widely studied interventions, with promising efficacy. Several studies also highlight the role of midwives in screening, assessment, and referral for antenatal depression, although these remain limited. Alternative interventions such as acupuncture, exercise, and the use of digital health apps are gaining attention as complementary approaches. Large-scale peer-reviewed studies have become important

policy references, as evidenced by the high citation rate of the systematic article by O'Connor et al. (2019).

Table 4. The top ten based on relevance topic.

Title	Author	Source	Year	Total Citation
Interpersonal counselling versus perinatal-specific cognitive behavioural therapy for women with depression during pregnancy offered in routine psychological treatment services: a phase II randomised trial	Evans, J., Ingram, J., Law, R., ... Culpin, I., O'Mahen, H.	BMC Psychiatry, 21(1), 504	2021	8
A pilot randomised controlled trial of cognitive behavioural therapy for antenatal depression	Burns, A., O'Mahen, H., Baxter, H., ... Noble, S., Evans, J.	BMC Psychiatry, 13, 33	2013	57
Women's experiences of having depression during pregnancy and receiving acupuncture treatment—A qualitative study	Ormsby, S.M., Dahlen, H.G., Smith, C.A.	Women and Birth, 31(6), pp. 469–478	2018	14
Effectiveness of psychological interventions in the treatment of perinatal depression: A systematic review of systematic reviews and meta-analyses	Branquinho, M., Rodriguez-Muñoz, M.D.L.F., Maia, B.R., ... Fonseca, A., Vousoura, E.	Journal of Affective Disorders, 291, pp. 294–306	2021	67
Knowledge of Midwives Regarding Antenatal Depression, Screening, and Referral in South Africa: A Qualitative Study Protocol	Baloyi, O.B., Laari, L., Mbobnda Kapche, C.X., Mbobnda Kapche, E.L.	International Journal of Qualitative Methods, 23	2024	0
Exercise During Pregnancy and Prenatal Depression: A Systematic Review and Meta-Analysis	Sánchez-Polán, M., Franco, E., Silva-José, C., ... Barakat, R., Refoyo, I.	Frontiers in Physiology, 12, 640024	2021	44
'Creating a safety net': Women's experiences of antenatal depression and their identification of helpful community support and services during pregnancy	Raymond, J.E.	Midwifery, 25(1), pp. 39–49	2009	54
Interventions to Prevent Perinatal Depression: Evidence Report and Systematic Review for the US Preventive Services Task Force	O'Connor, E., Senger, C.A., Henninger, M.L., Coppola, E., Gaynes, B.N.	JAMA Journal of the American Medical Association, 321(6), pp. 588–601	2019	237

The association between the use of antenatal care smartphone apps in pregnant women and antenatal depression: Cross-sectional study	Mo, Y., Gong, W., Wang, J., Sheng, X., Xu, D.R.	Jmir Mhealth and Uhealth, 6(11), e11508	2018	20
Compliance to antenatal psychosocial assessment practice among midwives: a best practice implementation project	Tessema, M., Birhanu, D., Mizana, B.A., ... Birhanu, Z., Feyissa, G.T.	Jbi Evidence Implementation, 20(1), pp. 44–52	2022	4

Figure 5 shows the keyword network visualization. The visualization results show three clusters: red, green, and blue. The red cluster includes keywords such as depression, anxiety, mental health, anxiety disorder, mental illness, Edinburgh postnatal depression, and pregnancy complications. This cluster reflects the core issue under study: the psychological conditions experienced by women during pregnancy and after childbirth. The presence of risk factors, prevalence, and risk assessment indicates attention to early identification and risk mapping of depression. The keywords "young adult" and "adolescent" also indicate special attention to vulnerable age groups. This cluster is relevant for examining how midwives can screen, early detect, and refer cases of depression during pregnancy. The green cluster consists of keywords such as "pregnancy," "midwife," "prenatal care," "childbirth," "puerperium," "cesarean section," "obstetric delivery," "gestational age," "psychology," and "counseling." These keywords indicate the role of midwives in pregnancy and childbirth care, as well as their potential involvement in psychosocial interventions such as counseling or education. The presence of terms such as "procedures" and "parturition" emphasizes the clinical context, while "psychology" and "counseling" demonstrate the integration of psychological approaches into midwifery practice. This cluster is closely related to non-medical intervention strategies to reduce depressive symptoms during pregnancy. The blue cluster consists of keywords such as female, adult, child, infant, newborn, male, social support, and outcome assessment. This cluster represents patient demographics and social factors that contribute to maternal mental health, such as social support. The presence of interviews and outcome assessments indicates an evaluative approach in the study, both in terms of maternal experiences and the effectiveness of interventions. The role of midwives in providing social support or connecting patients with community resources can also be examined within the context of this cluster.

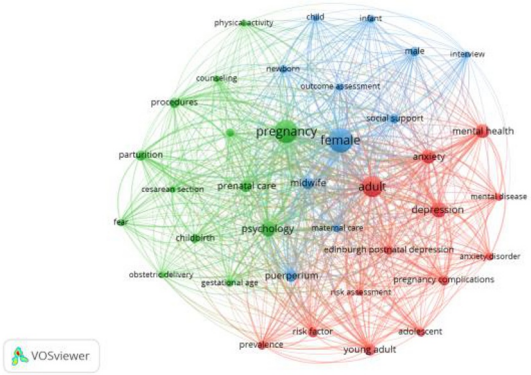


Fig. 5. Keywords network visualization

Collaboration involving five pathways is shown in Figure 6. The figure shows a map of collaboration between countries in research related to depression during pregnancy and interventions by midwives. The United Kingdom, the United States, and Australia occupy central positions, with large node sizes and numerous connections, indicating a high volume of publications and a strong intensity of international collaboration. Australia appears to have strong connections with countries in the Asia-Pacific region, such as China, New Zealand, and Indonesia, indicating the expansion of collaboration into the global south. On the other hand, the European cluster—represented by countries such as Germany, Spain, Belgium, and the Netherlands—also forms a strong collaborative network, although it is relatively more regionally focused. Meanwhile, countries such as Indonesia and Iran have more limited involvement, with connections still confined to a few large countries, indicating great potential for increased collaboration in the future.

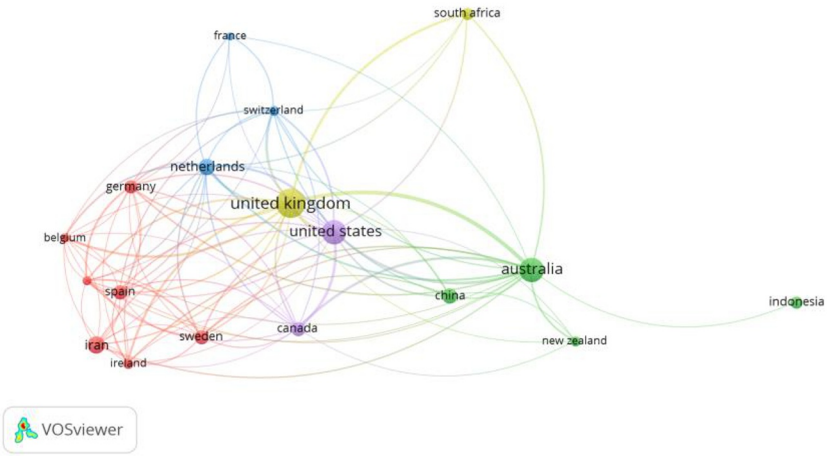


Fig. 6. Country collaboration

A visualization of the latest research topics is shown in Figure 7. Colors indicate the average time of keyword appearance, with blue representing earlier topics (around 2018) and yellow representing more recent topics (closer to 2020). Keywords such as prevalence, risk factor, young adult, and puerperium are dominated by blue-purple, indicating that these issues were primarily researched in the early stages. Meanwhile, topics such as mental health, anxiety, interviews, and social support appear in yellow, indicating that attention to psychosocial aspects and mental support has increased in recent years. Core keywords such as pregnancy, female, depression, and adult remain dominant and are located in the center of the map, reflecting strong consistency and connectivity across years and topics.

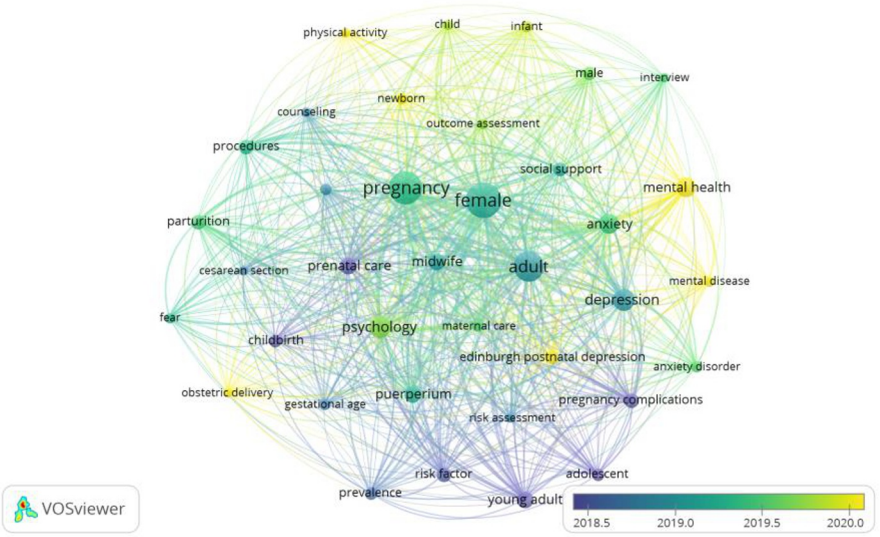


Fig. 7. Overlay visualization

4 Discussion

4.1 Interpretation of Research Trends and Global Collaboration

This bibliometric study provides an overview of the development of research on midwife-delivered interventions for prenatal depression. The findings demonstrated that publication output increased substantially and reached its peak in 2022. Among the 702 articles analyzed, a significant expansion of the literature on midwife-delivered interventions for prenatal depression was observed. Importantly, this study not only documented the quantitative growth in publication volume but also captured the evolution of theoretical and practical paradigms within the field.

The scientific mapping approach was deliberately selected to identify global publication trends and to map research hotspots related to midwife-delivered interventions for prenatal depression. This methodological choice enabled a more objective evaluation of hundred of publications compared with conventional literature reviews, which are often limited in scope. The analysis successfully integrated multiple critical research clusters from a multidimensional perspective. These dimensions ranged from clinical and biological aspects previously highlighted by (Stein et al., 2014), to practitioners' readiness and implementation challenges, including workload pressures faced by midwives in clinical settings (Ormsby et al., 2018). Furthermore, the mapping results emphasized the importance of innovative strategies, such as task-sharing models, particularly to address resource limitations in low-resource settings (Honikman et al., 2012).

Our findings indicate that research on prenatal depression has been predominantly published in leading journals such as Midwifery, BMC Pregnancy and Childbirth, and Women and Birth. Bibliometric mapping identified several major research themes, including women's psychological conditions during the perinatal period, psychosocial interventions delivered by midwives, and social and demographic factors influencing women's mental health. These findings reinforce the view that the role of midwives in addressing prenatal depression has become an integral component of antenatal care services. Studies focusing on prenatal depression screening, perinatal risk factors, and psychological interventions emerged as the principal intellectual foundations of this field. The high citation frequency of studies by (Milgrom et al., 2011)), (Stein et al., 2014)) and (O'Connor et al., 2019)) further suggests that contemporary research continues to rely heavily on theoretical frameworks related to the prevention of perinatal depression.

Research priorities in this field have evolved dynamically over time. Around 2018, the literature was largely dominated by descriptive epidemiological approaches focusing on prevalence estimates, risk factors, and postpartum complications. However, following 2020, scholarly attention shifted toward intervention-oriented and humanistic dimensions, including anxiety, mental health, social support, and in-depth explorations of women's experiences through qualitative interviews with pregnant women. The rapid growth of publications in maternal mental health is closely associated with the increasing prevalence of prenatal depression across many countries. There is growing recognition that psychological problems during pregnancy may have serious consequences for both mothers and their infants, prompting international organizations such as the World Health Organization (WHO) to actively advocate for the integration of mental health services into routine maternal healthcare.

The increasing volume of literature on prenatal depression management reflects a broader transformation in modern maternity care, which no longer focuses solely on physical health but increasingly incorporates psychological and social well-being. This highlights the crucial role of midwives within maternal healthcare systems. Their close and continuous contact with pregnant women enables early identification of psychological problems, provision of emotional support, and delivery of effective psychosocial interventions. From the perspective of global collaboration, the United Kingdom, the United States, and Australia have emerged as dominant contributors and major drivers of research networks in this field. This leadership is unsurprising given their well-established midwifery systems, substantial research funding, and the longstanding integration of mental health services into antenatal care. Institutional support from highly productive centers such as King's College London and UNSW Sydney has further strengthened their influence. Through nationally integrated midwife-led continuity of care models, midwives in these countries have broader opportunities to deliver psychological interventions. Their research has exerted considerable influence on international clinical policies, as reflected by the high citation impact of systematic evidence syntheses such as the study by (O'Connor et al., 2019) published in JAMA. While this concentration of collaborations around several major knowledge hubs facilitates rapid dissemination of scientific evidence, it may

simultaneously widen the research gap between high-income countries and low- and middle-income countries (LMICs).

The collaboration network analysis also revealed substantial geographical disparities. Australia demonstrated extensive collaborative relationships involving several countries in the Global South, including China, New Zealand, and Indonesia. In contrast, the participation of developing countries, including Indonesia and Iran, remains relatively limited, with collaborative networks still concentrated around a small number of high-income countries. This imbalance is particularly concerning because developing countries often experience a higher burden of prenatal depression while simultaneously facing limited access to mental health services, including shortages of psychiatric specialists. Therefore, strengthening and expanding international collaborations should remain a priority to ensure that midwifery intervention models are better adapted to the social, cultural, and healthcare system contexts of individual countries.

4.2 Author Productivity and Author Influence

Author productivity analysis revealed that Hildingsson, I. was the most prolific author in the field of midwife-delivered interventions for prenatal depression, contributing a total of eight publications and receiving 389 our findis. In contrast, Gamble, J. demonstrated the greatest scientific influence, with only six publications but accumulating 632 citations, indicating the substantial academic impact of her work. Other authors who made significant contributions to the field included Lund, C. (seven publications; 349 citations), Honikman, S. (seven publications; 276 citations), and Stein, D.J. (seven publications; 273 citations). These findings suggest that research on midwife-led interventions for prenatal depression continues to be shaped by a relatively small group of core researchers who serve as intellectual leaders in the fields of maternal mental health and midwifery.

4.3 Cluster Analysis Results, Evolution of Interventions, and the Strategic Role of Midwives

Keyword cluster analysis identified three major pillars within this research field. The red cluster represented the core research focus, namely the psychological conditions experienced by women during pregnancy and the postpartum period. The primary themes within this cluster concerned the strategic role of midwives in screening, early detection, health education, and risk factor assessment, particularly among vulnerable populations such as adolescents and young adults (Milgrom et al., 2011). The use of universal screening instruments such as the Edinburgh Postnatal Depression Scale (EPDS) has become a fundamental component of midwifery care (Austin et al., 2015); Milgrom et al., 2011).

(Austin et al., 2015) emphasized that screening using the EPDS and similar instruments should become a standard component of antenatal care to facilitate the identification of severe cases. Early detection and psychosocial interventions delivered by midwives during the second or third trimester of pregnancy have the potential to

prevent the progression of postpartum mental disorders. One important finding highlighted in the literature is that prenatal depression represents the strongest predictor of postpartum depression (Milgrom et al., 2011). However, Allison et al., 2015) concluded that the success of such interventions depends not only on screening activities but also on the integration of supportive systems, including direct access to psychiatric consultation services for midwives. Interprofessional collaboration is therefore essential to maximize the effectiveness of midwifery interventions. Furthermore, O'Connor et al. 2019) provided strong evidence regarding the effectiveness of preventive interventions for perinatal depression in primary care settings.

The green cluster connected clinical terminology with non-pharmacological approaches such as counseling and education. This finding highlights the urgent need to strengthen midwives' competencies in delivering basic psychosocial interventions during antenatal care provision (Ayers & Delicate, 2016) (Carroll et al., 2018). Midwives occupy a unique and strategic position in providing support and protection for women experiencing prenatal depression (Raymond, 2009).

Midwives are not only responsible for routine screening but also play a critical role in delivering initial psychosocial interventions and facilitating referrals to specialized services. Nevertheless, the implementation of these responsibilities continues to face substantial challenges in clinical practice, ranging from limited clinical knowledge among midwives to inconsistent adherence to assessment protocols, as demonstrated in implementation studies conducted by (Feyissa et al., 2021)) and (Baloyi et al., 2024). The prominence of keywords related to counseling, education, social support, and screening indicates that psychosocial interventions remain the most extensively investigated area of research. This trend aligns with the growing recognition that non-pharmacological interventions represent safe and effective treatment options during pregnancy.

Literature findings suggest that women who receive continuous midwifery care from the antenatal period through childbirth experience significantly lower levels of depression and anxiety symptoms (Kildea et al., 2018). The literature further indicates that training midwives to deliver basic psychosocial interventions for prenatal depression constitutes a highly cost-effective strategy for low- and middle-income countries (Lund et al., 2014); (Stein et al., 2014) provided biological and systemic evidence reinforcing the urgency of intervention during pregnancy. His work demonstrated that prenatal depression may influence fetal development through activation of cortisol-related stress pathways, potentially resulting in long-term adverse consequences for child health. Similarly, (Milgrom et al., 2011)) and (O'Connor et al., 2019) demonstrated that structured psychoeducational and counselling interventions delivered during the antenatal period were effective in reducing depressive symptoms and improving maternal mental health outcomes among pregnant women. (Feyissa et al., 2021) highlighted the importance of equipping midwives with the knowledge and skills to deliver psychosocial support and integrate mental health care into routine antenatal services.

The blue cluster emphasized the importance of patient demographics, social support systems, and evaluation of intervention outcomes through qualitative studies and in-

depth interviews. Within this context, midwives function not only as clinical practitioners but also as facilitators who contribute to the development of social support networks within communities (Raymond, 2009); Honikman et al., 2012); (Kildea et al., 2018). Interestingly, overlay visualization revealed a temporal shift in research priorities. During the earlier period, around 2018, the literature was dominated by descriptive epidemiological studies focusing on prevalence, risk factor identification, and postpartum complications (Milgrom et al., 2011). However, from 2020 onwards, research attention shifted toward more intervention-oriented topics, including mental health management and strengthening social support systems (Branquinho et al., 2021). This thematic evolution reflects a broader transition from diagnosis-oriented approaches toward promotive and preventive models of care.

A growing body of evidence consistently confirms that structured psychological interventions, particularly Cognitive Behavioral Therapy (CBT) and interpersonal counseling integrated into midwifery services, continue to represent the interventions with the strongest clinical evidence base (O'Connor et al., 2019). However, implementing these interventions in routine clinical practice remains challenging. Delivering CBT requires intensive specialized training and considerable time commitment from midwives. These barriers represent substantial challenges, particularly in the context of increasing clinical workloads and workforce shortages faced by midwives (Burns et al., 2013a); (Ormsby et al., 2018).

To address these systemic challenges, recent studies have increasingly explored alternative and complementary intervention approaches. (Evans et al., 2021a)) reported that non-pharmacological interventions can enhance pregnant women's participation in self-assessment and self-management activities. Notably, digital modalities were also considered more flexible in reducing depressive symptoms (Evans et al., 2021a). Beyond their flexibility, digital health interventions have considerable potential to reduce psychological barriers associated with stigma surrounding mental health problems. This advantage is particularly important for pregnant women who may feel reluctant or embarrassed to seek psychological support through traditional face-to-face services (Evans et al., 2021b). As research attention shifts toward implementation challenges, (Ayers & Delicate, 2016) emphasized the importance of healthcare professionals' competencies as a key determinant of successful intervention delivery. The findings demonstrated that perinatal mental health training significantly improved midwives' self-efficacy in recognizing and addressing psychological problems among pregnant women.

4.4 Integration of Maternal Mental Health Services into Antenatal Care

The global dimension of maternal mental health and the challenges faced by countries with diverse cultural backgrounds and limited resources have received considerable attention from researchers. (Baloyi et al., 2024) and (Feyissa et al., 2021) explored the implementation of midwife-delivered interventions for prenatal depression in African countries. Their studies concluded that integrating mental health services into routine antenatal care can effectively reduce maternal psychological morbidity; however, the success of such interventions is strongly influenced by social stigma and the availability

of institutional and logistical support. Similarly, (Mo et al., 2018) documented comparable challenges in Asian settings, emphasizing the need for cultural adaptation of screening instruments and counseling techniques used by midwives to ensure that interventions are culturally sensitive and acceptable to local populations.

(Evans et al., 2021b) contributed to this field by evaluating the effectiveness of digitally facilitated psychological interventions delivered by midwives. This approach has rapidly emerged as a strategy to overcome limited access to services caused by geographical barriers. The implementation of hybrid care models expands the scope of conventional midwifery services by incorporating digital technologies into the provision of mental health support. Digital interventions therefore offer a promising solution to overcome both geographical constraints and social stigma that often prevent pregnant women from seeking mental health support.

The current literature landscape indicates that structured psychological interventions, such as Cognitive Behavioral Therapy (CBT) and interpersonal counseling integrated into midwifery care, continue to represent the interventions supported by the strongest clinical evidence, as demonstrated by (Branquinho et al., 2021). At the same time, there is increasing interest in alternative and complementary interventions, including physical activity programs, acupuncture (Ormsby et al., 2018) and the use of digital technologies through smartphone applications for self-monitoring and self-management of symptoms (Mo et al., 2018).

Several countries have begun integrating mental health services into antenatal care as part of broader efforts to improve women's health comprehensively. These integrated care models typically include routine mental health screening, multidisciplinary collaboration, referral systems, and the provision of psychological interventions. Evidence from previous studies suggests that the integration of mental health services into antenatal care improves access to services and enhances continuity of care (Carter et al., 2025).

4.5 Implications for Policy and Practice

Research on midwife-delivered interventions for prenatal depression is supported by a strong clinical and policy foundation. Nevertheless, integrating mental health services into universal midwifery care requires concrete policy actions. Health policymakers should ensure that formal midwifery education curricula include comprehensive training in perinatal mental health (Ayers & Delicate, 2016). From the perspective of clinical management and systemic challenges, Burns et al., 2013a)) and Ormsby et al. (2018)) identified excessive workload as one of the major barriers to optimizing the role of midwives in maternal mental healthcare. Their findings demonstrated that although midwives occupy a strategic position in the early detection of prenatal depression, overlapping administrative demands and clinical responsibilities frequently contribute to professional burnout. Consequently, the quality of psychosocial interventions provided to pregnant women may be compromised. Healthcare institutions should therefore reassess midwife-to-patient ratios to ensure adequate workforce capacity.

Policies should also ensure adequate consultation time during routine antenatal visits (Raymond, 2009), allowing midwives to conduct mental health screening and provide basic psychosocial support without compromising the quality of physical maternity care. Furthermore, the effectiveness of screening instruments, such as the Edinburgh Postnatal Depression Scale (EPDS), depends on the availability of well-established integrated referral pathways and timely access to interdisciplinary collaboration with specialist mental health services (Austin et al., 2015); (Allison et al., 2015). In low-resource settings and developing countries (Honikman et al., 2012); (Feyissa et al., 2021), governments should formally recognize and support task-sharing policies to ensure that basic psychological interventions delivered by midwives are legally protected and incorporated into national healthcare financing systems (Lund et al., 2014).

These findings are consistent with those reported by (Raymond, 2009)who emphasized the importance of organizational support and clear institutional policies to ensure that midwives have sufficient time to provide care and establish meaningful therapeutic relationships with women. Strengthening these findings, a systematic review and meta-analysis study conducted by (Sánchez-Polán et al., 2021), demonstrated that successful midwife-delivered interventions for prenatal depression not only improve maternal mental health during pregnancy but also generate long-term benefits, including a reduced risk of preterm birth.

Overall, Evidence from previous studies supports the need for policy reforms that integrate specialized perinatal mental health curricula into midwifery education and strengthen continuing professional development to improve midwives' competencies in mental health care (Baloyi et al., 2024); (Carter et al., 2025); (Carroll et al., 2018). Task-sharing strategies, including training midwives and other non-specialist health workers to deliver basic psychosocial and psychological interventions, have been shown to be feasible, effective, and cost-efficient in low-resource settings. These approaches may help address shortages of mental health professionals, particularly in rural and underserved areas, thereby improving access to perinatal mental health services and reducing the burden of prenatal depression ((Honikman et al., 2012)); (Lund et al., 2014)); (Rahman et al., 2013).

4.6 Research Gaps

Although the literature on midwife-delivered maternal mental health interventions continues to expand, several important research gaps remain. First, most available studies originate from high-income countries such as the United Kingdom, Australia, and the United States, whereas evidence from low- and middle-income countries (LMICs) remains relatively limited. This imbalance may restrict the generalizability of existing findings due to substantial differences in social, cultural, and healthcare system contexts across (Feyissa et al., 2021); (Baloyi et al., 2024).

Second, the majority of studies continue to focus on intervention effectiveness under controlled research conditions, while evidence regarding the implementation of these interventions in routine midwifery practice remains scarce. Factors such as healthcare workforce readiness, adherence to screening protocols, availability of referral

pathways, and organizational support have not been systematically evaluated in many settings (Allison et al., 2015); (Ayers & Delicate, 2016). Although advances in digital technology have created new opportunities for maternal mental healthcare delivery, relatively few studies have examined the effectiveness, acceptability, and integration of midwife-led mHealth and telehealth interventions, particularly in resource-constrained settings (Evans et al., 2021a).

Furthermore, most psychosocial interventions reported in the international literature have not adequately considered cultural diversity and social norms. However, stigma surrounding mental health disorders and differences in perceptions of pregnancy and psychological well-being may substantially influence intervention uptake and effectiveness across populations (Mo et al., 2018)(Baloyi et al., 2024). Evidence regarding the cost-effectiveness of task-sharing strategies and midwife-delivered psychosocial interventions also remains limited. Such information is essential for policymakers seeking to support the integration of mental health services into routine maternity care, particularly in countries experiencing shortages of specialist mental health professionals (Honikman et al., 2012); (Lund et al., 2014).

4.7 Strengths and Limitations

The principal strength of this study lies in its ability to provide a comprehensive overview of the evolution of research on midwife-delivered interventions for prenatal depression over the past two decades. Through the application of bibliometric analysis and network visualization techniques, research trends, collaboration patterns, and emerging research hotspots were systematically identified and characterized.

Nevertheless, several limitations should be considered when interpreting these findings. First, because all analyzed data were exclusively retrieved from the Scopus database, high-quality studies published in local non-English journals or indexed in regional databases may not have been captured. Consequently, research from developing countries, particularly studies focusing on culturally adapted interventions, may be underrepresented in the current analysis.

Second, bibliometric analyses inherently favor older publications that have had more time to accumulate citations. As a result, recently developed and innovative interventions, including digital mental health approaches that have rapidly expanded in recent years, may not yet demonstrate their full academic impact despite their considerable future potential.

Finally, bibliometric methods do not evaluate the methodological quality or risk of bias of individual studies included in the analysis. Therefore, the findings of this study should be interpreted cautiously and within the context of these methodological limitations.

4.8 Future Research Directions

Future research should focus on three major priorities: evidence-based clinical validation, digital innovation, and long-term outcome evaluation. Large-scale randomized controlled trials (RCTs) are urgently needed to evaluate the effectiveness

and cost-effectiveness of hybrid digital mental health programs, including mHealth and telehealth interventions delivered or facilitated by midwives.

In addition, future studies should pay greater attention to the influence of local social norms and mental health stigma. Midwifery counseling approaches may require cultural adaptation to ensure that interventions are responsive to the needs, beliefs, and expectations of diverse populations. The effectiveness of culturally tailored intervention models should therefore become a major research priority, particularly in low-resource and multicultural settings.

Furthermore, the long-term effects of prenatal mental health interventions should be investigated through prospective longitudinal studies. Such studies are needed to determine whether improvements in maternal mental health during pregnancy translate into sustained benefits for offspring, including cognitive, emotional, and psychological development throughout childhood and into school age. Collectively, these research priorities have the potential to strengthen the evidence base supporting midwife-delivered interventions for prenatal depression and to facilitate the integration of maternal mental healthcare into routine antenatal services worldwide.

5 Conclusion

Related topics include midwife-delivered interventions for prenatal depression, including psychological therapies like CBT, as well as alternative methods such as acupuncture, exercise, and digital health apps. Visualization revealed three main clusters focusing on women's psychological conditions, midwives' roles in care, and patient demographics and social factors. Finally, strengthening alternative interventions and expanding international collaboration, especially with developing countries, are recommended to improve global and context-specific approaches.

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