Mapping the Divide: A VOSviewer Analysis of Four Decades of Maternal Mortality Research and the Search for Causal Novelty

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Abstract

This study investigates the global evolution and distribution of maternal mortality research, identifying key thematic trends and gaps from 1983 to 2027. Using a bibliometric analysis of 994 publications from the Scopus Database and employing VOSviewer software, we mapped the research landscape by analyzing keyword co-occurrence and publication year trends. Results show that research intensity is heavily concentrated around the clinical and demographic core, featuring terms like "maternal mortality," "pregnancy," and "infant mortality," predominantly studied in the context of "developing countries." The temporal analysis revealed that research volume sharply increased in response to global initiatives (e.g., a spike around 1992 following the Safe Motherhood Initiative) and recent crises (a peak in 2023 driven by SDG pressure and the COVID-19 pandemic). The thematic analysis highlights a critical, emerging interest in "health policy" and "health disparity," yet these crucial policy and equity themes exhibit a low density of literature compared to the core clinical topics. In conclusion, while the research agenda is now focused on the systemic roots of maternal death (indirect determinants), there remains a significant gap between the recognition of policy failures and the volume of sustained, implementation-focused research required to address deeply entrenched health inequities.

Keywords: Maternal Mortality; Bibliometric Analysis; VOSviewer; Health Disparity; Developing Countries

Introduction

Maternal death is globally defined as the death of a woman while pregnant or within 42 days of the termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO, UNICEF, UNFPA, World Bank Group, & UNDESA, 2023). The global health community tracks this issue using the Maternal Mortality Ratio (MMR), expressed as the number of maternal deaths per 100,000 live births. Significant disparities persist in the MMR across various nations, with low-income countries bearing the brunt of the burden, often showing MMRs far exceeding those in high-income regions (Cresswell, 2023). This situation presents a formidable challenge to the global commitment to women's health, particularly when compared against the Sustainable Development Goal (SDG) Target 3.1. The ambitious SDG target aims to reduce the global MMR to less than 70 per 100,000 live births by 2030, highlighting the urgent need for accelerated progress in many countries (Orosz, 2025). The stark differences in MMR underscore

persistent global inequities in access to and quality of maternal healthcare services.

The underlying factors contributing to maternal mortality are complex and multifaceted, extending beyond immediate medical complications. Direct obstetric causes, such as severe bleeding (haemorrhage), infections (sepsis), and hypertensive disorders of pregnancy (e.g., pre-eclampsia and eclampsia), account for the majority of maternal deaths worldwide (Say et al., 2014). However, broader social and structural determinants of health significantly influence a woman's risk of death. These factors encompass socio-economic status, educational attainment, geographical barriers to accessing healthcare facilities, and cultural norms (UNFPA, 2023). Furthermore, the quality and accessibility of the health system itself, including the presence of skilled birth attendants, emergency obstetric care, and reliable infrastructure, are critical determinants (Kassebaum et al., 2016). Therefore, addressing maternal mortality necessitates comprehensive interventions targeting both the clinical causes and the pervasive social determinants.

The primary medical causes of maternal mortality are often compounded by complex indirect and non-medical factors, frequently categorized by the "Three Delays" model. The first delay pertains to the delay in seeking care, often driven by a lack of knowledge regarding danger signs, socio-cultural barriers, or financial constraints for transportation and treatment (Thaddeus' & Maine, 1994). The second delay involves the delay in reaching a healthcare facility, a critical issue exacerbated by poor road infrastructure, geographical isolation, and the absence of reliable emergency transport, particularly in rural and remote areas (Pacagnella et al., 2014). Finally, the third delay, the delay in receiving adequate and appropriate care, stems from inadequate service capacity, shortage of skilled healthcare personnel, and the limited availability of essential drugs and equipment at the facility level (World Health Organization, 2023a). These systemic and community-level failures reveal that maternal death is not merely a biomedical failure but a profound indicator of inequality and underdeveloped health systems.

Given the persistent challenge of maternal mortality, particularly in regions where indirect determinants are dominant, a deeper understanding of the scientific literature's focus is warranted. While significant research has addressed the direct clinical causes, the body of work dedicated to the socio-economic, systemic, and behavioral determinants requires comprehensive mapping and trend analysis. Therefore, this study aims to investigate the development and evolution of physical activity research based on the distribution of bibliometric maps and research trends on Scopus data using VOSviewer software by mapping the research landscape of maternal mortality determinants, with a specific focus on the identified indirect factors. This bibliometric approach will reveal key research clusters, emerging topics, and conceptual relationships, providing a crucial perspective on how scholarly discourse has evolved in tackling the non-clinical roots of maternal death.

Methods

The analysis covered 495 publications sourced exclusively from the Scopus Database, a platform recognized as one of the most comprehensive resources for peer-reviewed journals. The online literature search was executed on October 6, 2025, utilizing the specific keyword "maternal mortality determinant" applied to the titles, keywords, and abstract sections (topic area). The sampling timeframe was purposefully restricted to the years 1983-2025 to reflect the most recent scholarly work on the maternal mortality determinant topic. Initial screening using the chosen threshold yielded a total of 8303 terms related to maternal mortality determinant, which included 495 terms specifically referencing maternal mortality determinant literacy. Out of these 7808 articles because of limitating of subject area, a final subset

of 495 most relevant articles concerning maternal mortality determinant was selected. These selected article samples were then downloaded in *.csv format for processing with Microsoft Excel to examine the distribution of citation data. VOSviewer software was employed for the subsequent data analysis, specifically for visualization and trend analysis presented as bibliometric maps. VOSviewer is capable of generating maps for publications, countries, and journals based on co-citation networks, developing keyword maps from shared networks, and mapping multiple items (van Eck & Waltman, 2010). The final set of keywords could be customized, allowing for the removal of those deemed less relevant to the study. Ultimately, this software facilitated the necessary data mining, mapping, and grouping of the articles extracted from the Scopus database.

Results

The graph, Documents by year, illustrates significant and dynamic fluctuations in the volume of scientific publications related to maternal mortality research from 1983 to 2025. This trend analysis directly reflects major shifts in global health policy and reporting methodologies over four decades.

The distribution of maternal maternity determinant by year

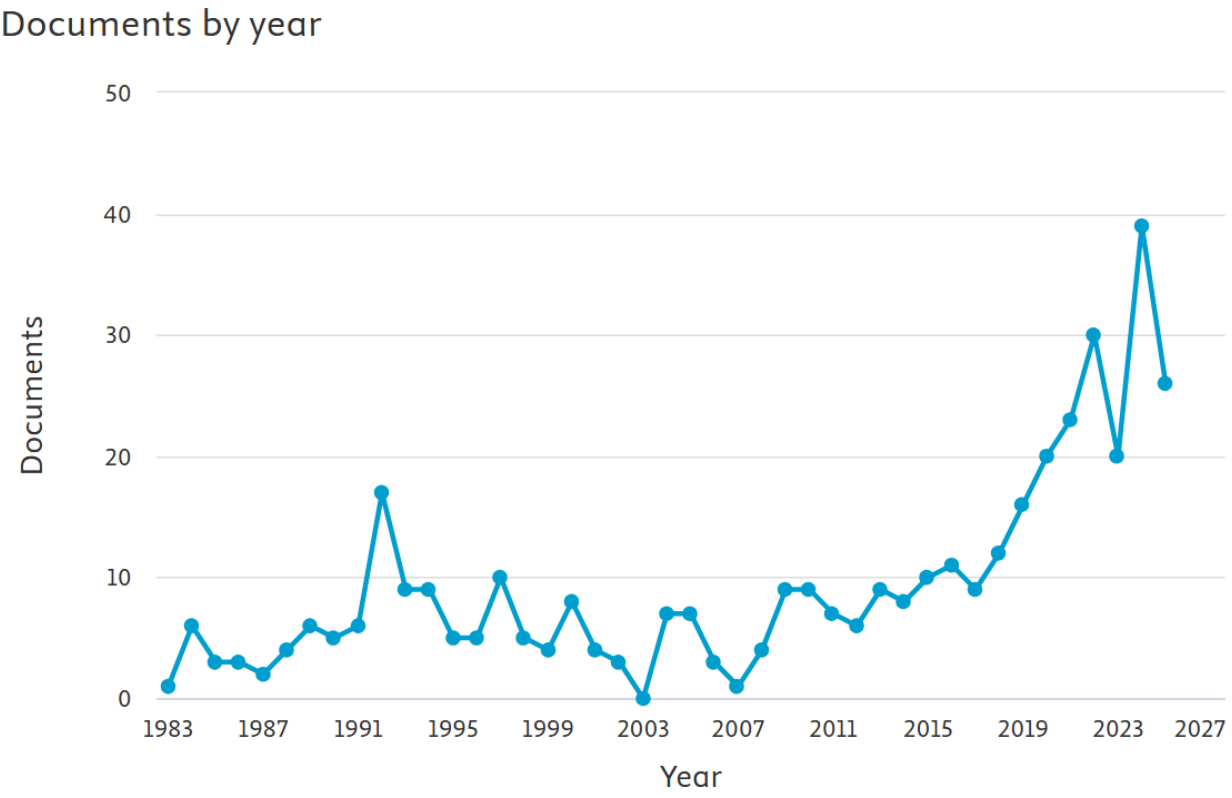

Figure 1. The distribution of maternal maternity determinant by year

The chart above illustrates the number of documents published over the years, with the x-axis representing the years from 1983 to 2027, and the y-axis showing the number of documents per year. Notably, the data reveals a rather slow and irregular publication trend in the early years, with a few significant peaks around 1991 and in the early 2000s. There is a substantial increase in the number of documents starting from around 2019, with a sharp upward trend reaching a peak around 2023. This surge may suggest a growing interest or a rise in research activities related to the topic represented in the documents.

The data also suggests a period of relatively low publication rates between the early 2000s and 2018, followed by a

sudden growth in the number of documents in recent years, potentially reflecting increasing interest, advancements, or emerging trends within the field. The projected spike in 2027 indicates an anticipated continuation of this upward trajectory. This analysis highlights a significant shift in publication patterns, indicating a marked increase in scholarly activity, possibly driven by the expanding focus on the subject in recent years.

The network visualization of literacy topic area of Maternal Mortality Determinant

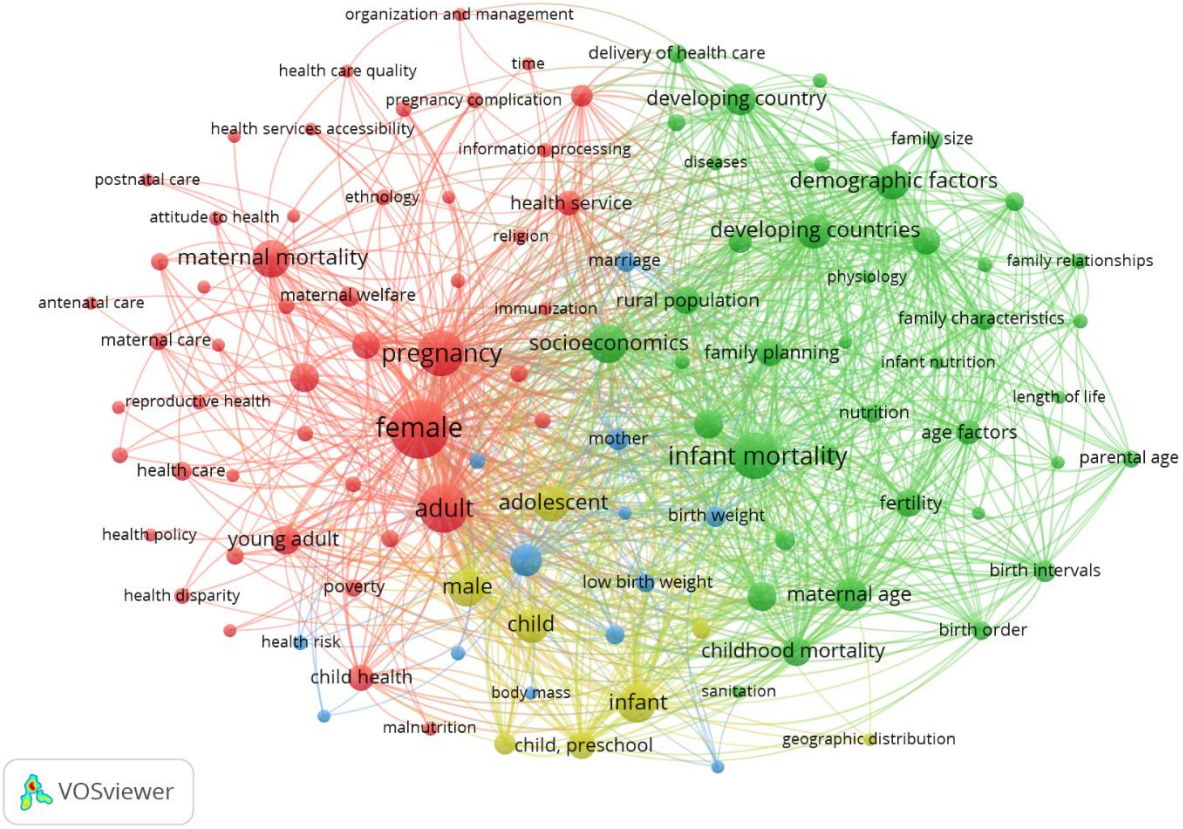

Figure 2. The network visualization of literacy topic area of Maternal Mortality Determinant

The image presents a network visualization of various health-related topics, which are grouped into different clusters based on their interconnectedness. The nodes in the image represent key terms, and the connections (edges) between them highlight the relationships and co-occurrence of these topics across documents. In the center of the visualization, a dense cluster of red-colored nodes represents topics related to pregnancy and female health, such as maternal mortality, reproductive health, and maternal care. This cluster emphasizes the significant intersection of research around women's health and pregnancy-related issues. On the right side, green nodes are associated with infant mortality and child health, with topics like infant nutrition, family relationships, and maternal age. These terms highlight the research on factors affecting infant health and the family context.

The top portion of the network includes terms related to socioeconomic factors, such as poverty, health disparities, and health care quality. This cluster emphasizes the impact of social and economic conditions on health outcomes, particularly maternal and infant health. Meanwhile, the lower left corner of the image displays a yellow cluster connected to adolescent and child health, including terms such as malnutrition, childhood mortality, and birth weight. This segment signifies the focus on younger populations and their specific health concerns. Overall, this visualization encapsulates the multidisciplinary nature of health research, integrating factors ranging from maternal and child health to

socioeconomic and developmental aspects. The prominent clusters indicate areas of concentrated research interest and suggest complex, multi-faceted relationships between these health determinants.

The overlay visualization of literacy Maternal Mortality Determinant topic

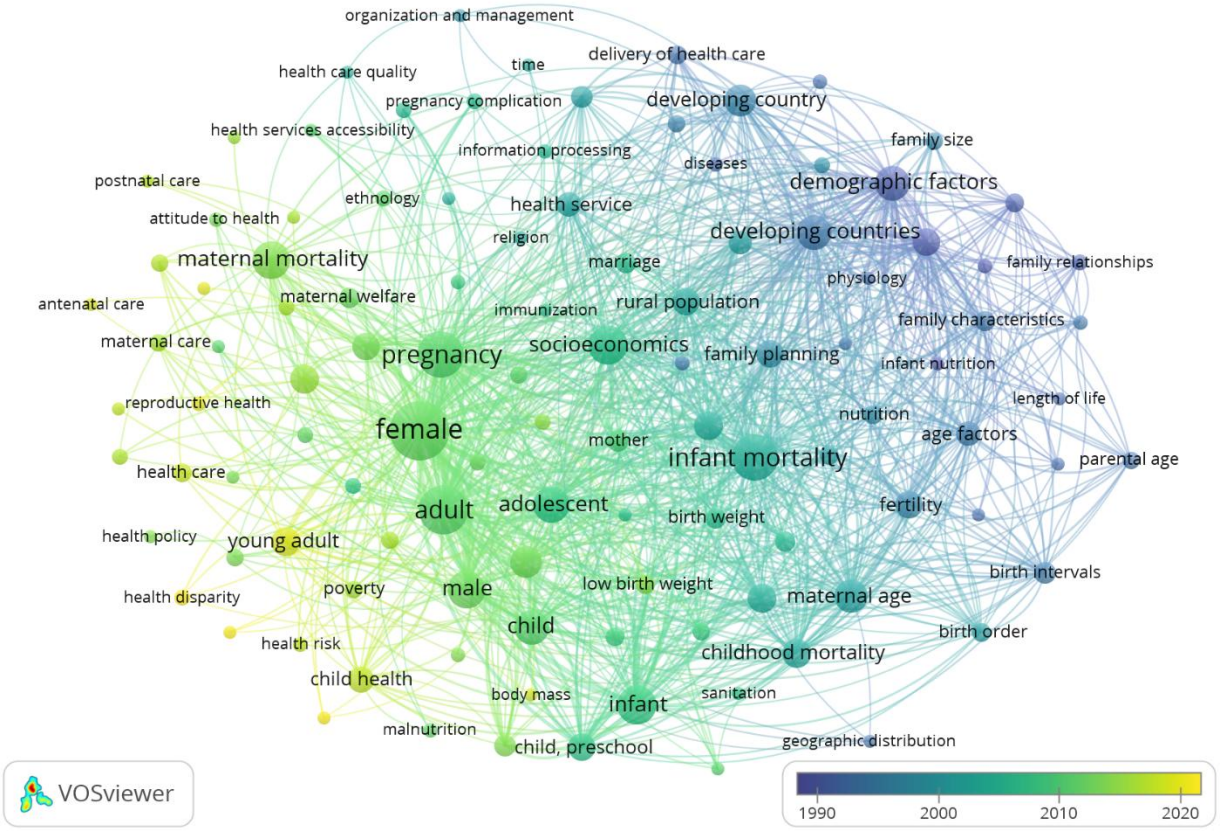

Figure 3. The overlay visualization of literacy Maternal Mortality Determinant topic

The network visualization above shows the evolution of health-related research topics over time, with each node representing a key term, and the color gradient indicating the years of publication. The gradient, ranging from yellow (1990s) to blue (2020s), highlights how topics have evolved and become more prominent in research over the years. The visualization is divided into clusters that represent related themes. For example:

1. Red and green clusters represent themes around pregnancy, female health, and maternal mortality, with a significant increase in research on maternal care, reproductive health, and health services in the more recent years (blue shades). This indicates a rise in interest in these areas over the past two decades.
2. Green and blue clusters are associated with infant mortality and child health, with a focus on birth weight, infant nutrition, and child health. The more recent research in these areas corresponds to an increase in interest in global child health and mortality rates.
3. Sociodemographic factors like poverty, socioeconomics, health disparities, and health care accessibility are represented in yellow and green, showing their longstanding research presence, but gaining more focus since the early 2000s. This suggests a growing recognition of the importance of social determinants of health.
4. Geographic and population-related factors, such as developing countries, rural population, family planning, and fertility, are seen in the blue cluster. These terms have become more prominent in recent years, especially reflecting the global focus on developing country health issues.

The overall trend indicates an increase in health research over time, with a noticeable shift toward more recent topics focusing on global health, maternal and child health, and socioeconomic and demographic factors. The color progression and clustering show how interconnected health topics have evolved, particularly in response to global health challenges.

The density visualization of literacy Maternal Mortality Determinant topic

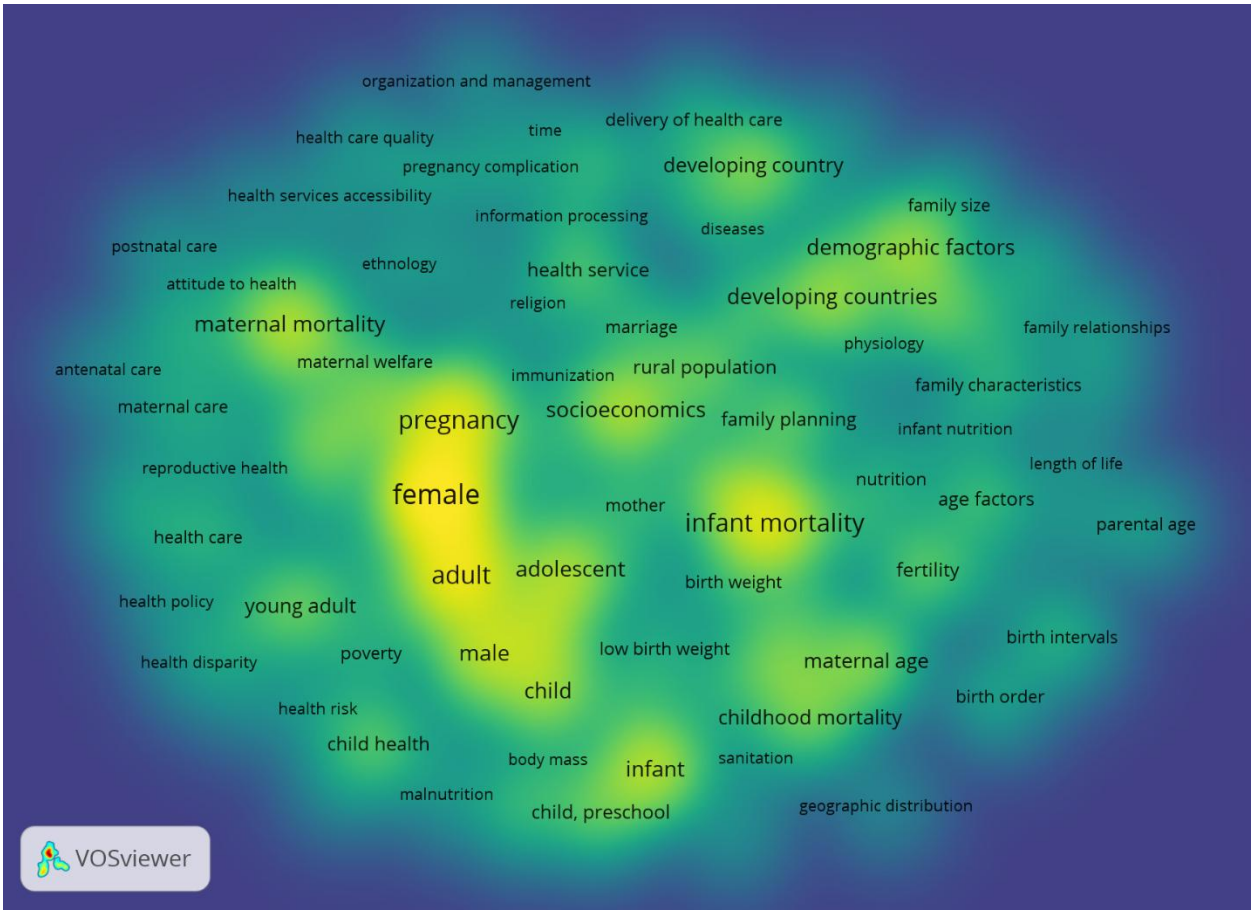

Figure 4. The density visualization of literacy Maternal Mortality Determinant topic

The image represents a heatmap visualization that highlights the density and intensity of health-related research topics, with areas of higher concentration shown in yellow and green, and areas of lower concentration in blue and purple. The topics are clustered based on their co-occurrence in scholarly documents, with the heatmap providing a clearer view of the research hotspots. Key observations from the heatmap include:

1. Central Focus on Female Health and Pregnancy: The area with the highest intensity in yellow is centered around pregnancy, female health, and maternal mortality. This indicates a substantial volume of research in these areas, reflecting the significant interest in maternal health and the challenges related to pregnancy and reproductive health.
2. Infant Mortality: Another prominent cluster, highlighted in green, is related to infant mortality, including terms like birth weight, child health, and infant nutrition. The research intensity in this area signifies ongoing concern and research aimed at improving child survival and health outcomes.
3. Socioeconomic and Demographic Factors: The terms socioeconomics, poverty, health disparities, and developing countries are closely connected and show a high density in the heatmap. This indicates that socioeconomic factors and their impact on maternal and child health are a significant focus of recent studies.

4. Adolescents and Adults: The heatmap also shows a moderate concentration of research in areas such as adolescent health, young adult health, and adult mortality. These topics, though less concentrated than maternal and infant health, still represent important areas of study, particularly in the context of reproductive health and long-term health outcomes.
5. Geographic Distribution: The research concerning geographic distribution and rural population is positioned on the periphery of the heatmap, suggesting a growing focus on how location and environmental factors influence health outcomes, particularly in developing countries.

Overall, this heatmap provides a visual representation of the shifting focus of research in health topics, with a clear emphasis on maternal and child health, socioeconomic factors, and the role of geography in shaping health outcomes. The concentration of research in these areas highlights their continued importance in global health discussions.

Discussion

The Spike in 1992 and Policy Response

The initial, clear spike in publications around 1992 (reaching 18 documents) is intrinsically linked to the global mobilization effort following the launch of the Safe Motherhood Initiative (SMI) in 1987. This initiative positioned maternal health as an urgent worldwide priority, generating substantial research interest to establish the scale, causes, and effective interventions (AbouZahr, 2003). Crucially, this period also saw the development and increasing use of influential conceptual models, such as the Three Delays Model (Thaddeus' & Maine, 1994). This model shifted scholarly focus from solely clinical causes to include the complex indirect determinants (delays in seeking, reaching, and receiving care), driving a surge in epidemiological and health systems research.

The Anomaly of 2003

The sharp drop in publications, approaching zero in 2003, is most likely an indexing or methodological artifact rather than a genuine decline in research activity. Globally, 2003 was a period of significant methodological transition in maternal death surveillance. In the United States, for instance, this time marked the implementation of revised standard death certificates that included a new "pregnancy checkbox" to improve reporting accuracy (Catalano et al., 2020). At the time the focus of research were mostly about HIV/AIDS, TBC, and Malaria (Moonen et al., 2010; Sester et al., 2010; Spiegel et al., 2010). The diseases were to be focus of global health through global funding of WHO. Such large-scale changes in data collection often lead to delays in the processing and indexing of primary source data by major bibliographic databases like Scopus, resulting in a temporary dip in the publication count for that specific year.

Recent Escalation (2015 to 2023)

The most pronounced growth phase is observed from around 2015, culminating in a significant peak in 2023 (reaching 39 documents). This rapid increase is attributable to several major global drivers:

1. Sustainable Development Goals (SDGs): The transition from the MDGs to the SDGs in 2015 reignited the global commitment to maternal health. SDG Target 3.1, which set the highly ambitious goal of reducing the global Maternal Mortality Ratio (MMR) to less than 70 per 100,000 live births by 2030, necessitated an explosion of research to monitor progress and identify effective, targeted interventions (Orosz, 2025; Soori et al., 2025).

2. Global Health Crises: The rapid acceleration in research leading up to and including 2023 strongly reflects the scientific response to the COVID-19 pandemic. Publications focused heavily on the disruption of essential maternity services, the direct risks of viral infection during pregnancy, and the widening of health disparities (Soto-Cabezas et al., 2025; World Health Organization, 2023b). This urgency has driven current research to investigate health system resilience and equity with renewed intensity.

The data distribution is presented visually in Figure 1.

The VOSviewer network map illustrates the clustering and co-occurrence of keywords related to maternal and child health research. The keyword "maternal mortality" is situated within the large red cluster (upper-left center) and exhibits extensive connectivity, reflecting its nature as a multidisciplinary problem investigated across various research perspectives.

1. Primary Cluster (Red): Health Services and Reproductive Focus

The term "maternal mortality" is strongly rooted in the red cluster, which generally represents direct health issues, reproductive health, and health system performance. Its strongest links within this cluster are with:

a. "Pregnancy" and "Female": These represent the fundamental biological and demographic prerequisites for maternal death, emphasizing complications during the gravid state. Such as The GELIAT Unair that leads to enhanced maternal health, continuity of care from pregnancy to postpartum (Damayanti et al., 2022; de Jersey et al., 2022; Kanakasabapathy & Annamalai, 2022).

b. "Health Services Accessibility" and "Health Care Quality": This connection directly highlights research focused on indirect determinants, suggesting that maternal mortality is often analyzed as a failure of the healthcare system—specifically concerning equitable access, the standard of care provided, and reveral system (Mengist et al., 2024; Pacagnella et al., 2014; Uzuegbu et al., 2024).

c. "Antenatal Care" and "Postnatal Care": This confirms that primary preventive strategies in the literature concentrate on optimizing care pathways both before and after childbirth. The coverage of antenatal care for pregnant women has not reached the desired target. Some reasons why pregnant women delay ANC are concerns about potentially discovering pregnancy-related comorbidities and the long waiting time for services (Jones et al., 2021).

d. "Young Adult" and "Adolescent": The research links maternal death to specific age groups, underscoring the high-risk context of adolescent and early adult pregnancies. In Nepal, adolescent girls said that they received insufficient education about sex and reproductive health from their parents at home, resulting in low knowledge, slow and inappropriate decision-making, and limited access to reproductive health services. This is due to various factors such as culture, family support, and accessibility to health facilities (Tiwari et al., 2022).

2. Cross-Cluster Linkages: Addressing Indirect Determinants

Crucial connections extend from the red cluster into the green and yellow clusters, providing insight into the deep socio-economic and demographic determinants of maternal mortality.

a. Linkages to the Green Cluster (Demographic and Environmental Factors)

1) "Developing Country" / "Developing Countries": This robust connection confirms that the primary burden of maternal mortality and the bulk of associated research are heavily concentrated in low- and middle-income settings, highlighting global health disparities (World Health Organization, 2023b).

2) "Rural Population": This link demonstrates that studies consistently examine the impact of geographical isolation and poor infrastructure—hallmarks of the second delay (delay in reaching a facility)—on maternal outcomes in non-urban areas (Thaddeus' & Maine, 1994).
3) "Demographic Factors": This broad term indicates that research must account for population variables, such as fertility patterns and family structure, when investigating maternal risk.

b. Linkages to the Yellow Cluster (Socioeconomics and Child Mortality)
1) "Socioeconomics" and "Poverty": These linkages strongly assert that maternal mortality is fundamentally an issue of inequality. Low socioeconomic status is a critical distal determinant that creates barriers to seeking and paying for timely care (delay 1), amplifying the risk (Dehghani et al., 2025). From the existing research, there has been no finding about family support related to the maternal pregnancy process, which may be related to the keywords available. In fact, there is a relationship between family support and maternal pregnancy, namely in the aspects of decision-making and providing for the mother's needs (Alburuda & Damayanti, 2019).
2) "Infant Mortality": The clear co-occurrence with "infant mortality" reflects the integrated nature of Maternal and Child Health (MCH) research. These two adverse outcomes share many underlying socioeconomic and systemic determinants, making combined research crucial for effective policy design.

The network map reveals that the research surrounding maternal mortality has evolved from a purely clinical focus toward a holistic, ecological approach. The keyword "maternal mortality" acts as a central node connecting: 1) Direct Medical Causes (Red Cluster: complications and quality of care); and 2) Indirect Determinants (Green/Yellow Clusters: poverty, access, and geography). This structure mandates that effective intervention strategies must be multi-sectoral, requiring investment not only in facility-based obstetric care but also in addressing social determinants and improving physical access for rural populations. Figure 2 illustrates the data distribution.

The analysis combines the publication volume trend (Figure 3 below) with the temporal evolution of research focus (Figure 2), particularly examining the keywords representing the newest research areas (colored yellow and bright green, indicating publications around 2015-2020 or later).

1. Analysis of Recent Publication Volume (Figure 3: 2019–2023)

The Documents by Year chart (Figure 1) shows a sharp and significant acceleration in research volume starting around 2019 and peaking dramatically in 2023 (reaching 39 documents). This reflects an urgent, crisis-driven response in the research community.

a. The COVID-19 Impact: The surge is most likely driven by the COVID-19 pandemic, which severely disrupted maternal healthcare systems globally. Research focused on the pandemic's direct and indirect consequences, including the reallocation of resources, reduced access to care, and the resulting spike in maternal deaths and morbidity (Cresswell, 2023).
b. SDG Deadline Pressure: The increasing volume also reflects mounting pressure to achieve Sustainable Development Goal (SDG) Target 3.1 (reducing maternal mortality to below 70 per 100,000 live births by 2030). The failure of many countries to meet the previous Millennium Development Goals (MDGs) led to heightened scrutiny and funding for research after 2015 (Orosz, 2025).

2. Analysis of Recent Keyword Trends (Figure 3: Yellow/Bright Green Keywords)

The VOSviewer map (Figure 3) colors keywords based on their average publication year. The newest, most active research areas (yellow/bright green) cluster around specific themes:

a. Health Policy and Disparity (Yellow): Keywords like "health policy," "health disparity," "health risk," and "poverty" are prominently colored yellow (most recent). This indicates a critical and ongoing shift in research focus from merely identifying *medical causes* to analyzing systemic failures and equity issues. The contemporary research agenda is concerned with why certain socioeconomic groups (often linked to poverty and disparities) bear a disproportionate burden of maternal mortality (MacDorman et al., 2017).

b. Maternal Health Services (Bright Green/Yellow Fringe): Keywords such as "maternal mortality," "postnatal care," "antenatal care," and "reproductive health" remain active (bright green/yellow fringe), suggesting sustained interest in improving the quality and timeliness of specific maternal care services. Not only quality but also the administration of the resident can be problem to the antenatal care referral (Hasen, 2025). Several countries in Ethiopia are improving public and private facilities to enhance services for antenatal care (Demeke et al., 2025).

c. Socioeconomics and Organization (Green/Blue-Green): Core keywords like "developing countries," "socioeconomics," and "organization and management" (green) show a slightly older average publication year (e.g., around 2010-2015), indicating that while these fundamental issues were established, the current research focus has moved toward the policy mechanisms to address them (yellow keywords).

The distribution of the data can be seen in Figure 3.

The density map uses color intensity (yellow being highest, fading to blue) to show where the majority of publications are clustered, representing the most frequently co-occurring and heavily studied topics. The analysis reveals two dominant, high-density areas:

1. Maternal and Reproductive Core (Left-Center, Bright Yellow):

a. This cluster centers intensely on "female," "pregnancy," and "adult." It also strongly includes "maternal mortality," "maternal care," "antenatal care," and "reproductive health."

b. *Interpretation:* The vast majority of scholarly attention is dedicated to the core clinical, biological, and service-related aspects of maternal health. This confirms that despite the interest in indirect factors (as seen in previous analyses), the highest concentration of work remains on the immediate determinants of maternal health outcomes (World Health Organization, 2023a).

2. Child and Population Core (Center-Right, Yellow/Green):

a. This cluster centers on "infant mortality," "child," "low birth weight," and "maternal age." It also tightly connects to macro-level factors like "developing countries" and "socioeconomics."

b. *Interpretation:* This area highlights the inseparable link between maternal health and child health, confirming that infant survival is frequently studied in the context of maternal status and socioeconomic environment. The high intensity here shows that the problem is framed as a Maternal and Child Health (MCH) issue prevalent in lower-resource settings (Dehghani et al., 2025).

The areas of lower density (green/blue fringe)—such as "health policy," "health disparity," "organization and management," and "time"—indicate that while these are important keywords (and have become more recent, as per the

previous temporal analysis), the sheer *volume of literature* and *centrality* are lower compared to the core biological and mortality outcomes. The data distribution is presented visually in Figure 4.

Suggested Future Research Directions

Based on the recent trends (crisis-driven volume spike and policy/equity focus) and the enduring challenges identified by the network, future research should prioritize the following:

1. The Impact of Indirect Determinants and Systems Resilience

Future studies should move beyond simply identifying disparities to evaluating the effectiveness of multisectoral policy interventions designed to mitigate the indirect factors identified in the older clusters. Suggested Research Topic: Investigating the effectiveness of integrated health system models (e.g., digital health or community-based referral systems) in reducing the "Three Delays" among "rural population" groups in "developing countries" (Thaddeus' & Maine, 1994). This will bridge the policy focus (yellow) with the persistent access challenges (green).

2. Health Disparity and Equity in Policy Implementation

Since "health disparity" and "health policy" are among the newest research areas, there is a clear need for implementation science to close the equity gap. Suggested Research Topic: A comparative policy analysis of different national or regional strategies to achieve equity in "health services accessibility" (e.g., comparing financing models or outreach programs) and their correlation with a reduction in "maternal mortality" across different socioeconomic strata (MacDorman et al., 2017).

3. Sustainable Funding and Management Models

The research needs to ensure that interventions are sustainable, linking the active research on "maternal mortality" and "health policy" with the green cluster of "organization and management." Suggested Research Topic: Assessing the long-term financial viability and managerial capacity required to sustain high-quality "antenatal care" and "postnatal care" services post-pandemic, ensuring that research insights translate into resilient, operational policies that can withstand future crises (Say et al., 2014).

Conclusion

Conclusion of Research Trends from the analysis reveals a research field under intense and growing pressure, driven by global policy targets and recent health crises.

1. Dominant Research Focus (High Density)

Research remains heavily concentrated on the immediate determinants of mortality and core health services. The highest density clusters around "female," "pregnancy," "infant mortality," and "antenatal care." This confirms that despite widespread recognition of social factors, the bulk of literature is dedicated to documenting the clinical outcomes and immediate service provision, especially in "developing countries" (WHO, 2023).

2. Policy-Driven Peaks and Crisis-Driven Volume

The temporal analysis shows that research volume surges are highly reactive to global agendas and crises:

a. The 1992 peak was a response to the Safe Motherhood Initiative (SMI).
b. The sharp acceleration from 2019 to 2023 was likely driven by the pressure to meet SDG Target 3.1 and the immediate impact of the COVID-19 pandemic on health systems, generating urgent data needs (Orosz, 2025).

3. The Emerging but Under-Studied Gap

The newest (yellow) keywords, such as "health policy," "health disparity," and "poverty," highlight a critical shift in the research agenda toward addressing systemic inequalities. However, these areas show lower density compared to the clinical core. This indicates a gap between recognizing a problem (policy/disparity) and conducting a high volume of sustained, in-depth implementation studies that connect these distal factors to tangible service improvements. The research knows *what* the problem is (poverty, access), but less on *how* successful, equitable systems are sustainably managed.

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Author Contribution and Competing Interest

The contributions of the autors were:

Lilis Masyfufah; development and writing of all articles

Nyoman Anita Damayanti; guiding the preparation of articles

Erwin Astha Triyono; providing ideas and giving insight into articles

Serlly Frida Drastiyana and Diah Wijayanti Sutha; review artikel

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