



Workload of Midwives: A Bibliometric Analysis

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Abstract

Bibliometric analysis is a popular method used to explore and analyze a large amount of scientific data. This article presents a bibliometric analysis using Scopus-indexed journals related to 'midwife workload' with the assistance of the VOS viewer application. The study's objective is to assess research pertaining to midwife workload and to identify the most relevant topics and trends in scientific literature on this subject. The research method used in this study, conducted from 2013-2022, is based on data from Scopus utilizing the Publish or Perish (POP) application and employing a systematic content analysis method. The study's results reveal an increase in publications related to 'workload midwives' over the past five years. The United Kingdom leads in the publication of 'workload midwives' articles, with 98 articles credited to the country. Researchers Kildea exhibit the highest productivity, each having authored five publications. In keyword analysis, a total of 12 author keywords demonstrates significant interconnectedness.

Keywords: *Bibliometrics; Midwife; Workload*

Introduction

Healthcare facilities are organizations with organized and permanent infrastructure to provide continuous medical services and nursing care through professional medical personnel (Nisak, 2020). Midwives are among the healthcare professionals who are crucial in delivering healthcare services in facilities. Midwives' work requires skills aligned with competency, responsibility, maintaining good relationships with patients and their families, making prompt decisions in emergencies, interpreting examination results, and being capable of considering appropriate medical actions (Salsabilla *et al.*, 2023).

Midwives working in healthcare facilities bear full responsibility for the job demands of their respective institutions. They face a high vulnerability to work fatigue due to serving patients in shift work schedules, a high number of daily patients, and varying patient conditions. Inpatient care midwives also experience high workloads, as their responsibilities demand constant presence by the patient's side for continuous monitoring of various care-related activities. This situation requires maximal service provision, making it necessary for midwives to exhibit perseverance in delivering quality care (Hikmawati *et al.*, 2020).

According to the Occupational Safety and Health Administration (OSHA), heavy workloads can lead to psychosocial risks in the workplace, such as stress, fatigue, and even depression (WHO, 2020). Stress is a nonspecific response of the body to any demand or burden placed upon it. Stress can occur when a person experiences a heavy load or task and is unable to cope with imposed demands. As a result, the body responds inadequately to the task, leading the individual to experience stress (Ahmad, 2019). Workload is influenced by external factors such as tasks, work organization, and the work environment.

Internal factors include time pressure, working hours, role ambiguity and role conflict, repetitive actions, and responsibilities (Krisdiana *et al.*, 2022).

According to the Journal of Psychosomatic Medicine, the high workload received by healthcare professionals can impact their ability to cope with job demands and derive satisfaction from ensuring patient safety (Koontalay *et al.*, 2021; Dora Wijaya *et al.*, 2022). In high-demand work situations, the emotional demands on midwives arise from consistently encountering a high workload, insufficient resources in maternal health services, as well as pain, anxiety, fear, stress, and emotional fatigue. They also contend with challenging situations like workplace violence, undergo traumatic events, and face the added burden of being inadequately compensated for their efforts (Cramer, 2019; Geraghty *et al.*, 2019; Hunter *et al.*, 2019; Fenwick *et al.*, 2018). Work fatigue is an individual's response to psychosocial experiences over a specific period caused by external factors such as physical and mental workloads. Fatigue symptoms typically include a heavy head, weakness, frequent yawning, and drowsiness (Hikmawati *et al.*, 2020).

Based on previous research conducted in Australia, approximately 60.7% of midwives experienced emotional fatigue ranging from moderate to severe, which was attributed to high workloads, poor working conditions, and insufficient work experience. Midwives in low-, middle-, and high-income countries consistently show a strong commitment to their work but face challenges such as unmanageable workloads, gender inequalities with a lack of power for woman, And the loss of autonomy and power in the healthcare system, leading to a lack of optimal care provision. Improving midwives' working conditions is necessary for them to work optimally and provide good service (Bogren, 2018; Filby *et al.*, 2016; Byrskog *et al.*, 2019; Sidhu *et al.*, 2020).

In the last ten years, literature related to "workload midwives" has been accessed with various research methods, but there has not been a bibliometric analysis addressing this topic, suggesting that a bibliometric analysis of "workload midwives" is needed. Bibliometric analysis is a quantitative method of analyzing written publications that facilitates the assessment of research capacity res, searchers, and organizations. Bibliometric indicators provide information about researchers, countries, institutions, and the quality and quantity of published research (Kahwa *et al.*, 2022).

Methodology

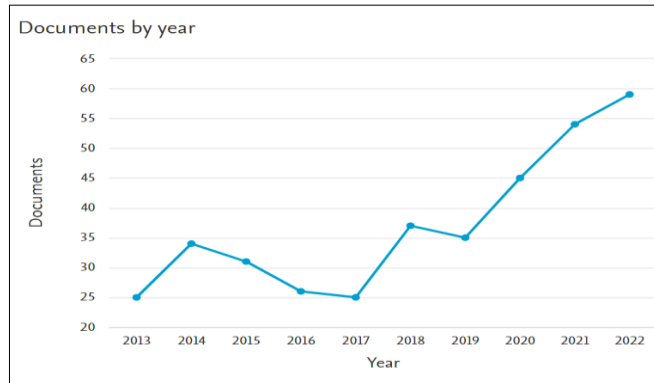
This research employs a quantitative method to identify research trends in the field of midwifery worldwide. Despite the various purposes of bibliometrics, such as identifying emerging patterns in the performance of articles and journals, collaboration trends, and the constituents of research, and delving into the intellectual framework of a particular domain within the existing body of literature, this bibliometric analysis is utilized to review publications related to the research scope. The goal is to identify research trends, concepts, and necessary keywords (Donthu *et al.*, 2021; Verma & Gustafsson, 2020).

There are three stages conducted in this research: data collection, data visualization, and data analysis (Perestroika *et al.*, 2023). In the data collection stage, the researcher used the keyword "workload midwives". Searches with this keyword were performed in the Scopus database over the last ten years, from 2013 to 2022. From this search, a total of 371 articles that met the criteria were obtained and categorized into various types, including the annual publication trends, types of publications, most prolific researchers, the number of publications based on affiliation, and country. Subsequently, the data were imported into VOS viewer to analyze bibliometric aspects of the research. The third stage involves data analysis, where the researcher identifies the main topics discussed in research related to the workload of midwives.

Results

Midwives play a crucial role in healthcare facilities, and their work involves significant responsibilities that can lead to high vulnerability to work fatigue due to factors such as shift work, high patient loads, and varied patient conditions. Using the keyword "workload midwives", the researcher conducted searches in the Scopus database for articles published between 2013 and 2022, resulting in 371 articles.

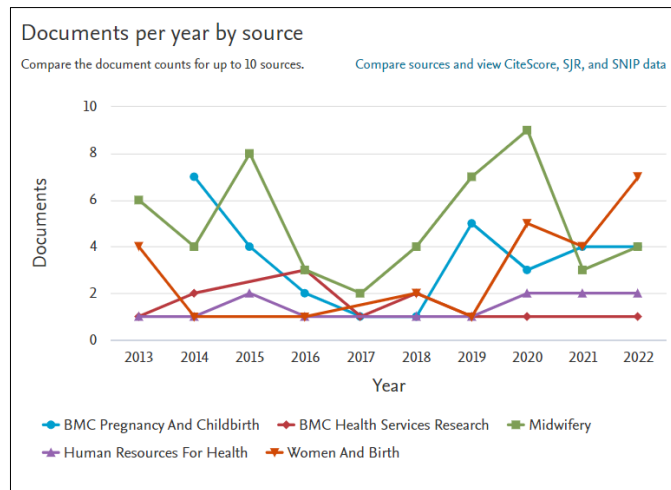
These articles were analyzed using VOS viewer to examine bibliometric aspects such as publication trends, researcher productivity, and geographical distribution of research.



Source: <https://bit.ly/workloadmidwives>

Figure 1: Trends in Articles on Midwife Workload

In Figure 1 the trend of journal articles published from 2013 to 2022 with the theme of workload midwives shows an overall increase in the average number of article publications per year. However, there is a decline in the number of publications for three consecutive years in 2015, 2016, and 2017.



Source: <https://bit.ly/workloadmidwives>

Figure 2: Data Analysis for Various Departments

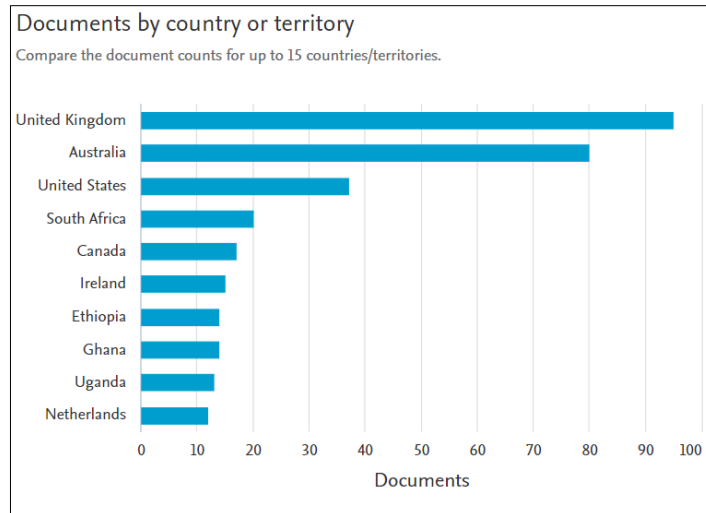
Figure 2 illustrates the top five journals that have published the most articles from 2013 to 2022. The figure indicates that the number of article citations per year follows a pattern of decline and significant increase. These journals are BMC Pregnancy and Childbirth, Human Resources for Health, BMC Health Services Research, Women and Birth, and Midwifery.

Table 1: Data Extraction of the Selected Studies

No	Writer	Article Title	Year of Publication	Number of Citations	Journal Name
1	Hämmig	Explaining burnout and the intention to leave the profession among health professionals - A cross-sectional study in a hospital setting in Switzerland	2018	142	BMC Health Services Research

2	Gray <i>et al.</i>	Workplace-based organizational interventions promoting mental health and happiness among healthcare workers: A realist review	2019	133	International Journal of Environmental Research and Public Health
3	Mollart <i>et al.</i>	Factors that may influence midwives work related stress and burnout	2013	128	Women and Birth
4	Dugani <i>et al.</i>	Prevalence and factors associated with burnout among frontline primary health care providers in low-and middle-income countries: A systematic review	2018	121	Gates Open Research
5	Hildingsson, Westlund & Wiklund	Burnout in Swedish midwives	2013	119	Sexual and Reproductive Healthcare
6	Blackman <i>et al.</i>	Factors Influencing Why Nursing Care Is Missed	2015	112	Journal of Clinical Nursing
7	Moridi <i>et al.</i>	Midwives' perspectives of respectful maternity care during childbirth: A qualitative study	2020	105	Plos One
8	Yoshida & Sandall	Occupational burnout and work factors in community and hospital midwives: A survey analysis	2013	101	Midwifery
9	Bradley <i>et al.</i>	Too few staff, too many patients: A qualitative study of the impact on obstetric care providers and on quality of care in Malawi	2015	89	BMC Pregnancy and Childbirth
10	Newton <i>et al.</i>	Comparing satisfaction and burnout between caseload and standard care midwives: Findings from two cross-sectional surveys conducted in Victoria, Australia	2014	89	BMC Pregnancy and Childbirth
11	Burrowes <i>et al.</i>	Midwives and patients perspectives on disrespect and abuse during labor and delivery care in Ethiopia: A qualitative study	2017	76	BMC Pregnancy and Childbirth
12	Batinelli <i>et al.</i>	What are the strategies for implementing primary care models in maternity? A systematic review on midwifery units.	2022	16	BMC Pregnancy and Childbirth

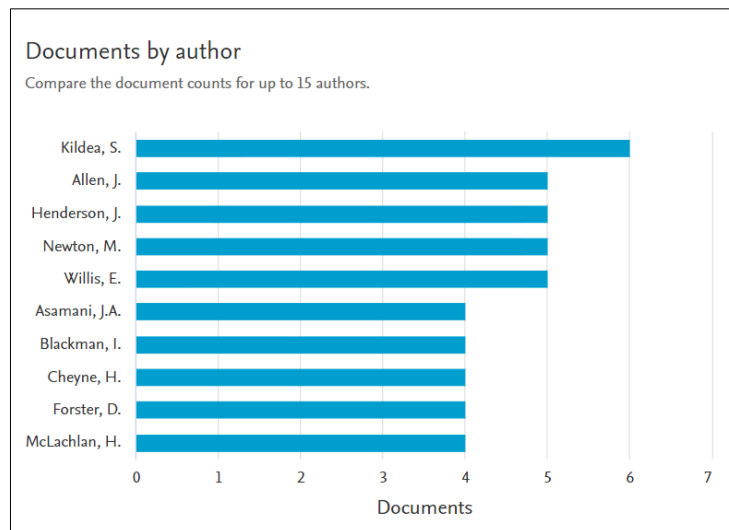
Table 2 presents the articles on the workload of midwives from 2013 to 2022.



Source: <https://bit.ly/workloadmidwives>

Figure 3: Country-Based Document Data Analysis

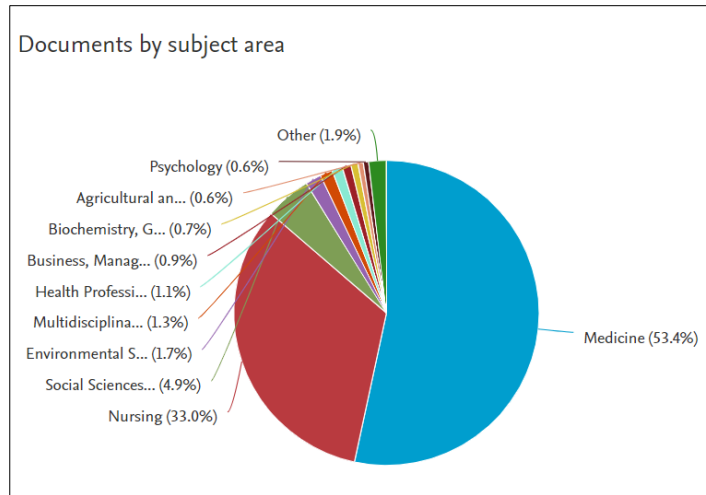
Figure 3 shows that the country with the highest number of authors writing articles about the workload of midwives is the United Kingdom, as presented in the figure, with nearly 100 articles published. The second position is Australia, with a publication totaling 80 articles. Countries from the American continent occupy the third and fifth positions, namely the United States and Canada. Africa is situated between these two countries. Following are Ireland, Ethiopia, Ghana, Uganda, and Netherlands occupying the last five positions among the top 10 countries contributing authors to these articles.



Source: <https://bit.ly/workloadmidwives>

Figure 4: Documents by Author

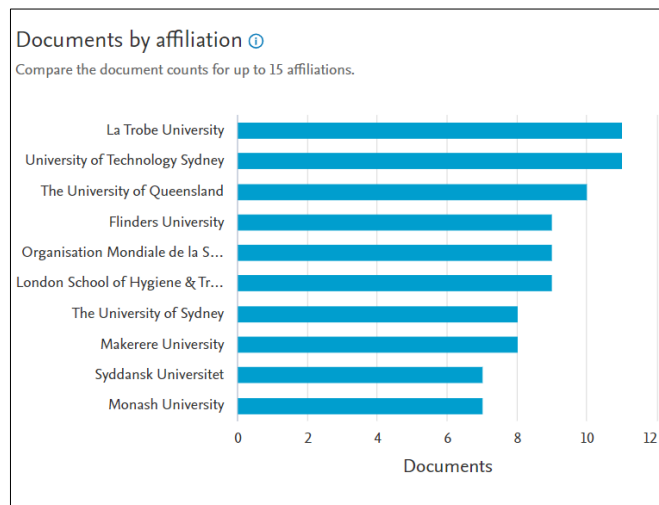
Based on the graph in Figure 4, there are ten researchers with the highest productivity on the topic of workload midwives indexed in Scopus. Kildea has the highest productivity with six publications. Meanwhile, Allen, Asamani, Henderson, Newton, and Willis have a productivity of 5 publications and Asmani, Blackman, Cheyne, Forster, McLachlan have a productivity of 4 publications



Source: <https://bit.ly/workloadmidwives>

Figure 5: Documents by Subject Area

The results of this research present other professions most frequently associated with midwives in articles on the workload of midwives, namely medicine and nursing, taking the first and second positions. In the third and fourth positions are non-healthcare related occupations, such as social science and others, including economics, immunology, pharmacology, arts, and decision science. Environmental science then occupies the fifth position, which is often associated with midwives. Subsequently, multidisciplinary professions, health professions, business, management, and accounting, biochemistry, genetics, and molecular biology, agricultural, and psychology take up the following positions (Figure 5).

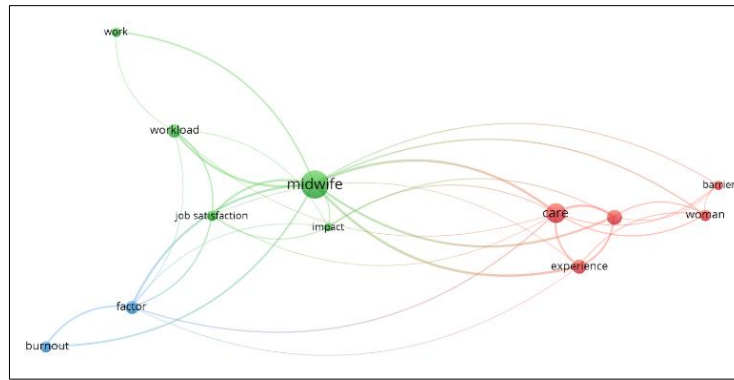


Source: <https://bit.ly/workloadmidwives>

Figure 6: Documents by Affiliation

Figure 6 shows the top 10 affiliations in research on the workload of midwives. La Trobe University and the University of Technology Sydney are among the leading institutions, each having published the highest number of articles, totaling 11 articles.

Following these are other institutions, including The University of Queensland, Flinders University, Organisation Mondiale, London School of Hygiene, The University of Sydney, Makerere University, Syddansk Universitet, Monash University.



Source: Output of descriptive analysis in Vosviewer software

Figure 7: Visualization of the Journal Network Based on Keyword Authors

Keyword analysis of authors was conducted with the assistance of the VOS viewer application. In Figure 7 a total of 12 author keywords were found to be highly connected. The author's keywords were separated into three clusters with different colors. Cluster 1 consists of "barrier," "care," "experience," "qualitative study," and "woman." Cluster 2 includes "impact," "job satisfaction," "midwife work," and "workload." Cluster 3 consists of "burnout" and "factor."

Discussion

In Figure 1, we illustrate the yearly publication trend on "workload midwives" from 2013 to 2022. Overall, there is a notable increase in annual article publications, indicating the growing relevance of the topic. However, a decline in publications during 2015-2017 prompts further exploration, possibly linked to changes in related issues or external factors like shifts in midwifery practices or health policies. Figure 1 serves as an initial guide for researchers, revealing the historical and evolving interest in "workload midwives," offering potential insights into future research trends for improved maternal healthcare.

Figure 2 highlights the impact of citations of articles from the top five journals published on "workload midwives" from 2013 to 2022. These journals, with the highest citations, signify their significant influence in the scholarly community, acting as crucial references for researchers and contributing to the advancement of knowledge in this field (Arefi *et al.*, 2021).

Next, it is important to examine patterns in the yearly fluctuations of article citations for the "workload midwives" topic. A decline in citations may signal diminishing research interest, prompting further investigation into potential external factors like healthcare system changes influencing researchers' focus. Conversely, an uptick in citations may suggest heightened research interest or notable advancements in the "workload midwives" domain, indicating its increasing relevance in maternal healthcare or midwifery care (Edmonds, Ivanof & Kafulafula, 2020).

Consider the significance of the top five journals in this citation analysis: BMC Pregnancy and Childbirth, Human Resources for Health, BMC Health Services Research, Women and Birth, and Midwifery. Figure 3 serves as a valuable tool for researchers and maternal health professionals to pinpoint influential sources in the scientific literature on this topic. Additionally, it can inspire researchers to delve into further studies within the realm of "workload midwives" and identify emerging research trends for future attention (Long *et al.*, 2019).

Table 1 in this bibliometric paper provides a useful summary of the most frequently cited research in academic literature. It is worth noting that the top-ranked article, authored by Hämmig O. has been cited a total of 142 times, indicates that the article has become one of the highly influential pieces in the "workload midwives" topic. In other words, this article has made a significant contribution to the understanding of factors influencing stress among midwives. This article addresses burnout and intention to leave the profession among health professionals, and this may have significant implications for the management of stress and burnout in the context of midwifery work (Hämmig, 2018).

Figure 3 in this bibliometric paper outlines the countries of authors contributing to "workload midwives" articles during the period. Primarily, the image reveals that the United Kingdom has the highest publication rate, with almost 100 articles, indicating a significant contribution to the research on workload midwives. Factors like the nursing system and challenges in maternal health might be key reasons for the research focus in this country.

The second position, Australia, has too substantial a contribution to this literature with 80 articles, a sign that Australia's "workload midwives" issues have a strong involvement in Australia, and research on this topic is relevant in the context of maternal health care. The next country is the United States, followed by the South Africa and Canada. I'm in the third and fifth position on the list of the highest authors, showing us the involvement of North America with this topic, too, which has a different healthcare system from that of the United Kingdom and Australia.

Africa has a middle position between America and Canada in the contribution of "workload midwives," reflecting African countries' important role in global maternal health care, the challenges, and unique issues in Africa. The next countries, such as Ireland, Ethiopia, Ghana, Uganda, and Netherlands also include 10 ranked authors' contributions to this literature, showing that "workload midwives" research has a global impact and involves many authors from several countries.

Figure 4 in this bibliometric paper provides an invaluable insight into the top 10 most prolific authors publishing articles on "workload midwives" over the period 2013-2022, indexed in Scopus. This analysis provides an overview of individual contributions to the scientific literature on this topic. Firstly, researchers Kildea were the most productive, with six publications each, showing a remarkable commitment to research on "workload midwives." Their consistent contributions to this topic may have been instrumental in developing our understanding of issues related to midwives' work. Furthermore, researchers Allen, Henderson, Newton, Willis, also have significant contributions, with five publications. Researchers Asamani, Blackman, Cheyne, Forster, dan McLachlan also have a significant ontributions, with four publications. Showing that they also play an active role in producing quality research on "workload midwives." Their publications can be an important source of reference for other researchers interested in this topic.

This analysis can also provide insight into the diversity of collaboration between researchers in the field of "workload midwives." Do these researchers often work together, or are they more likely to work independently? Are there strong collaborations between researchers from different countries or institutions? In addition, this study can also serve as a source of inspiration for other researchers to explore under-researched topics in the field of "workload midwives" that may not have been touched upon by these leading authors. There may be certain aspects of midwives' work that require further research, and Figure 4 can help identify potential future collaborations or research foci. Overall, Figure 4 provides a very clear picture of the most prolific authors in the scientific literature related to "workload midwives." It rewards their efforts in improving our understanding of the challenges and issues faced by midwives in their work and motivates further development in this field.

The third positions on the list are filled by professions outside of the health field, namely social science, indicating that issues related to the work of midwives also have important social and science impacts, could include aspects such as the environmental impact of maternal health care or social analysis of midwifery work. Other health professions, such as multidisciplinary professions, business management and accounting, biochemical genetics and molecular biology, engineering, and agricultural and biological sciences, also reflect diversity in approaches to the topic of "midwives' workload," suggesting that issues related to midwives' work involve a wide range of disciplines and professional fields (Hilbert, 2023).

Discussions about professions often associated with midwifery can motivate cross-disciplinary collaboration and help identify different aspects to consider in research and practice related to midwifery work. For example, research involving the social sciences can help understand the social factors that influence midwives' work, while research in environmental science can explore the impact of maternal healthcare practices on the environment. Overall, Figure 5 provides a rich view of the diversity and

complexity of midwifery work in a broader context and can be a starting point for interdisciplinary collaboration in research and practice related to maternal health care (Hilbert, 2023).

Figure 6 in this bibliometric paper provides an overview of the affiliated documents or institutional affiliations that appear most frequently in research on "workload midwives" during the period under study. This analysis allows us to identify institutions that play a major role in research and knowledge development on this topic. First of all, it is worth noting that La Trobe University is ranked first on this list, suggesting that La Trobe University has a significant contribution to make to research on "workload midwives." Most likely, this university has an active research center or program in this field, and its publications have been important contributions to scientific literature.

University of Technology Sydney ranked second and also has a strong contribution to literature, reflecting the university's active role in understanding the work of midwives and issues related to their workload. The University of Queensland, Flinders University, Organisation Mondiale, London School of Hygiene, University of Sydney, Makerere University, University of Southern Denmark, Monash University are also institutions listed in the top 10 affiliated documents. The presence of these universities in the list demonstrates the geographical diversity of research collaborations on the topic of "midwives' workload." This analysis can provide valuable insight into the leading research centers in midwifery workload and maternal health care research.

Figure 7 in this bibliometric paper presents the results of the author's keyword analysis based on the use of the VOS viewer application. This analysis reveals patterns of interrelationships between keywords frequently used by authors in their articles on "workload midwives." it provides invaluable insights into the focus and trends in research and thinking in this field, provides invaluable insights into the focus and trends in research and thinking in this area. The authors' keywords have been divided into three clusters of different colors.

Cluster 1 includes keywords such as "barrier," "care," "experience," "qualitative study," and "woman." This cluster may reflect research that focuses more on aspects of maternal health care from the perspective of women and the experience of midwives and could include more in-depth qualitative studies of midwives' work experiences and the barriers they face in providing quality care.

Cluster 2 consists of keywords such as "impact," "job satisfaction," "midwife work," "workload," and "cluster." This cluster may indicate more research focusing on the impact of midwives' workload, their job satisfaction, and aspects of their work. It reflects research interest in understanding how midwives' work affects their well-being and the quality of care they provide.

Cluster 3 consists of the keyword's "burnout" and "factor." This cluster may reflect research that focuses more on factors that influence levels of burnout and fatigue in midwives' work.

This analysis provides a more in-depth understanding of the most relevant and researched topics in the scientific literature on "workload midwives." it can help researchers to understand better the most important research focuses in this field and possibly identify areas that need more research in the future, can help researchers to understand better the most important research focuses in this field and possibly identify areas that need more research in the future. Overall, Figure 8 visualizes the connections between authors' keywords in research on "workload midwives," which can help readers understand the diversity of the most relevant topics and trends in the scientific literature related to midwives' work.

Conclusion

The workload of midwives has become a concern in the last ten years, evidenced by the fact that the author found quite a lot of articles with only one metadata source, namely Scopus. The publication trend on "workload midwives" has also experienced a significant increase. The average citation experienced a pattern of decrease and increase in most topics in the top journal that have Scopus indexes. Hammig O with the title " Explaining burnout and the intention to leave the profession among health professionals - A cross-sectional study in a hospital setting in Switzerland" became the article with the most citations, namely 142 citations. The country of origin of most of the authors was the UK, where almost 100 articles

were published. Kildea is the author with the greatest productivity, having published six publications. Doctors and nurses are the professions most associated with "workload midwives." In the keyword analysis, 3 clusters were formed. The most used terms in the first cluster are "barrier," "care," "experience," "qualitative study," and "woman."

Based on the results of the research, "workload midwives" have been widely researched in the world in the last ten years. However, there is an insignificant decrease in the increase in citations, indicating a change in research interest or a shift in research focus on the topic of "workload midwives.". Hence, the authors suggest adding more citations.

Conflict of Interest

The authors declare that they have no competing interests.

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