

Premature baby care: a bibliometric visualization and analysis study

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Abstract

Background : Premature birth poses a significant challenge to neonatal health, carrying substantial risks of physiological complications and necessitating evidence-based care to improve health outcomes for infants. While the body of scientific literature on the care of premature infants has grown, the high volume of publications calls for systematic analysis to understand trends and research gaps. This study aims to visualize research publications on premature baby care through a bibliometric analysis approach. By utilizing publication data from prominent sources, this study analyzes emerging research trends over the past decade in the field of nursing. The main focus of this study is to identify key developments, author collaboration patterns, and the contributions of leading journals dedicated to the topic of premature baby care. Through this analysis, it is expected that deeper insights into the direction and priorities of research in this field will be gained, as well as a clear overview of the scientific contributions aimed at improving the quality of premature baby care globally. **Methodology**: The research employed a systematic literature review and bibliometric analysis, using tools such as VOSviewer, Publish or Perish (PoP), and Microsoft Excel. Data were collected from the Scopus database using the keywords premature, baby, and care. **Results** : A total of 6,102 documents on premature baby care were identified within the Scopus database, covering publications from 1934 to 2022. Publication frequency shows an upward trend, peaking in 2022. Over the past decade, 335 articles in the nursing field have been published on this topic. The United States ranks highest globally, contributing 28.5% of publications. L.M. Howard is the leading author, with the article "Perinatal mental health: a review of progress and challenges" cited 242 times. *Journal of Neonatal Nursing* emerges as the most productive journal, with 28 publications, while the University of Technology Sydney ranks as the leading institution with 17 publications. Keywords such as premature, baby, and care remain the most studied. **Conclusion**: Research on premature baby care continues to grow. The keyword co-occurrence network map identifies five clusters, with "neonatal intensive care" prominently featured across four networks. Future studies should consider expanding bibliometric analyses to other databases for more comprehensive insights.

Keywords: Care, Baby, Premature, Bibliometric Analysis

Abstrak

Latar Belakang : Kelahiran prematur adalah salah satu tantangan utama dalam kesehatan neonatal yang memiliki risiko komplikasi fisiologis yang serius, sehingga memerlukan perawatan yang didasarkan pada bukti untuk memperbaiki hasil kesehatan bayi. Meskipun literatur ilmiah mengenai perawatan bayi prematur telah berkembang pesat, banyaknya publikasi yang ada memerlukan analisis sistematis untuk memahami tren dan kekurangan dalam penelitian. **Tujuan Penelitian** : Penelitian ini bertujuan untuk memvisualisasikan publikasi-publikasi penelitian mengenai perawatan bayi prematur melalui pendekatan analisis bibliometrik. Dengan memanfaatkan data publikasi dari berbagai sumber terkemuka, penelitian ini menganalisis tren penelitian yang muncul dalam kurun waktu satu dekade terakhir di bidang keperawatan. Fokus utama dari penelitian ini adalah untuk mengidentifikasi perkembangan utama, pola kolaborasi penulis, serta kontribusi jurnal-jurnal terkemuka yang berfokus pada topik perawatan bayi prematur. Melalui analisis ini, diharapkan dapat diperoleh wawasan yang lebih dalam mengenai arah dan prioritas riset di bidang tersebut, serta memberikan gambaran yang jelas tentang kontribusi keilmuan dalam meningkatkan kualitas perawatan bayi prematur secara global. **Metodologi**: Penelitian ini menggunakan desain systematic literature review dengan analisis bibliometrik, menggunakan perangkat lunak VOSviewer, Publish or Perish (PoP), dan Microsoft Excel. Data diperoleh dari basis data Scopus dengan kata kunci "premature," "baby," dan "care." **Hasil**: Terdapat total 6.102 dokumen terkait perawatan bayi prematur di basis data Scopus, dengan rentang tahun dari 1934 hingga 2022. Terjadi tren peningkatan publikasi setiap tahun, dengan puncaknya pada tahun 2022. Dalam dekade terakhir di bidang keperawatan, terdapat 335 artikel yang telah diterbitkan. Amerika Serikat memiliki persentase publikasi tertinggi di dunia, dengan total kontribusi sebesar 28,5%. Penulis yang paling produktif adalah L.M. Howard, dengan artikel berpengaruh berjudul "Perinatal mental health: a review of progress and challenges," yang memiliki 242 sitasi. *Journal of Neonatal Nursing* merupakan jurnal paling produktif dengan 28 publikasi, sedangkan University of Technology Sydney adalah institusi utama dengan 17 publikasi. Kata kunci premature, baby, dan care merupakan istilah yang paling banyak diteliti. **Kesimpulan**: Penelitian mengenai perawatan bayi prematur menunjukkan peningkatan yang konsisten. Peta jaringan berdasarkan keterkaitan kata kunci menunjukkan lima kluster, dengan neonatal intensive care sebagai istilah yang dominan yang muncul di empat jaringan. Direkomendasikan bagi peneliti selanjutnya untuk melakukan studi bibliometrik yang lebih mendalam pada basis data lain guna memperoleh analisis yang lebih komprehensif.

Kata Kunci: Perawatan, Bayi, Prematur, Analisis Bibliometrik

INTRODUCTION

Ensuring the involvement and engagement of parents in the care of premature or ill infants is crucial for minimizing stress and delivering optimal care

for both the baby and the family. The experience of having a premature or sick baby can be an emotionally taxing event for parents.

The prevalence of premature birth has been increasing around the world.(Eissler et al., 2022; Mohamad Yusuff et al., 2015) More than one in ten babies in the world is born prematurely every year. This figure is equivalent to 15 million premature babies born globally. Premature birth is the second largest direct cause of death in children under five years of age. (Chmielewska et al., 2021; Deng et al., 2018). Premature birth rates are highest in Sub-Saharan South Asia and Africa (more than 60%) and lowest rates in North Africa, Latin America and the Caribbean, West Asia. The rates of premature birth in developing countries vary widely and follow different patterns than in high-income countries.

The difficulties in caring for premature babies and the psychological stress this causes on parents treated in NICU (Neonatal Intensive Care Unit) are widely known. However, knowledge about parents' experiences caring for premature babies at home after discharge from the NICU is still limited. (Mann, 2016; Özdel & Sari, 2020)

Premature birth refers to the delivery of a baby before completing 37 weeks of gestation and is recognized as the primary factor contributing to neonatal mortality.(Kong et al., 2021) Navigating the challenges of a premature birth often requires parents to cope with heightened anxiety about the baby's health and development. Additionally, the emotional toll of witnessing their fragile infant's medical interventions in the NICU and adapting to the unique demands of caring for a premature baby at home further contributes to the considerable stress experienced by parents in such situations. (Fuentes et al., 2018; Tully et al., 2016). For the most part, nursing research around this topic has focused on parents' experiences of caring for premature babies in the NICU; two systematic reviews of parents' experiences in the NICU have been conducted.(Aagaard et al., 2015; Verduci et al., 2021) The findings from this review suggest that parents face a considerable stress in the NICU despite there are availability of health care professionals.

Premature or low birth weight babies in general have maturity in the body's defense system to adapt to the environment. Premature babies who have low birth weight tend to experience hypothermia (Enweronu-Laryea et al., 2012; Harriman et al., 2018; Montealegre-Pomar et al., 2021). This is due to the thin subcutaneous fat in babies so that it is very easily influenced by environmental temperature. In general, premature and low birth weight babies should be cared for in an incubator.

The care of a low birth weight or premature baby is very complex. They need to be cared for in an incubator. However, this treatment requires a high cost of care, and experienced health workers (Deng et al., 2018; Stevenson et al., 2023). The number of incubators in hospitals is very limited compared to the number of LBW admitted. Several researches have been conducted on the kangaroo method, and the results suggest that the kangaroo method is not only a substitute for incubators in the care of LBW, but it also provides many benefits that incubator care cannot provide.

The experience of motherhood and parenting a premature baby often occurs in a neonatal unit, under the supervision of a neonatal nurse. When a premature

baby comes home, parents are expected to take over the full-time caregiving role. Premature babies may require around-the-clock care, including medication, home oxygen, feeding assistance, and close monitoring.

The degree to which a home is prepared for a premature baby's transition can have a significant impact on a family's ability to survive and thrive. It is unsurprising that numerous parents encounter difficulty in handling this situation, as the growth and developmental path of premature infants significantly differ from that of their full-term counterparts. Specialized assistance is essential to ensure that premature babies receive the specific support required for them to achieve their optimal development..

It is very important to fulfill the psychological needs of parents of premature babies. Various interventions can be carried out, such as therapeutic communication, family assistance, health education, facilitation of parent-infant bonding and attachment, discharge planning, family-centered care, and developmental care approaches. (Kymre, 2014; Kymre & Bondas, 2013; Mu et al., 2020) Fulfilling these psychological needs can help parents adapt to new situations and maximize their role as parents.

During the process of providing nursing care, parents demonstrate a stable psychological condition, are able to communicate and make physical contact with their baby, increase their knowledge and skills, and are actively involved in caring for the baby in the hospital. (Jumintono et al., 2022; Niela-Vilén et al., 2015).

Many researches have been conducted on oxidative stress in preeclampsia, as well as their publication in indexed international journals, but there are still few studies that conduct bibliometric analysis. Bibliometric analysis is conducted by using the VOSviewer application, as well as using the Scopus database because it is considered Qualified and ideal. VOSviewer software is adopted as a bibliometric analysis tool to visualize the network of authors, countries, journals, and keywords. The focus of this article is to visualize the research on oxidative stress mechanism in preeclampsia based on bibliometric analysis.

METHOD

Research Design

Researchers had carried out a Systematic Literature Review with bibliometric analysis of publications up to 2022, indexed in the Scopus database (<https://www.scopus.com/>).

Data Source

Scopus was selected as the data source to be investigated. It was reasonable for use because of being the largest database for citations and abstracts of peer-reviewed scientific literature, including more than 24,000 titles from 11,000 publishers. Furthermore, Scopus was preferred as a source of information because it contained all MEDLINE documents providing the most frequently used citation database (Hernández-Vásquez et al., 2020).

Searching Strategy

Literature search used keywords or terms: **premature AND baby AND Care**

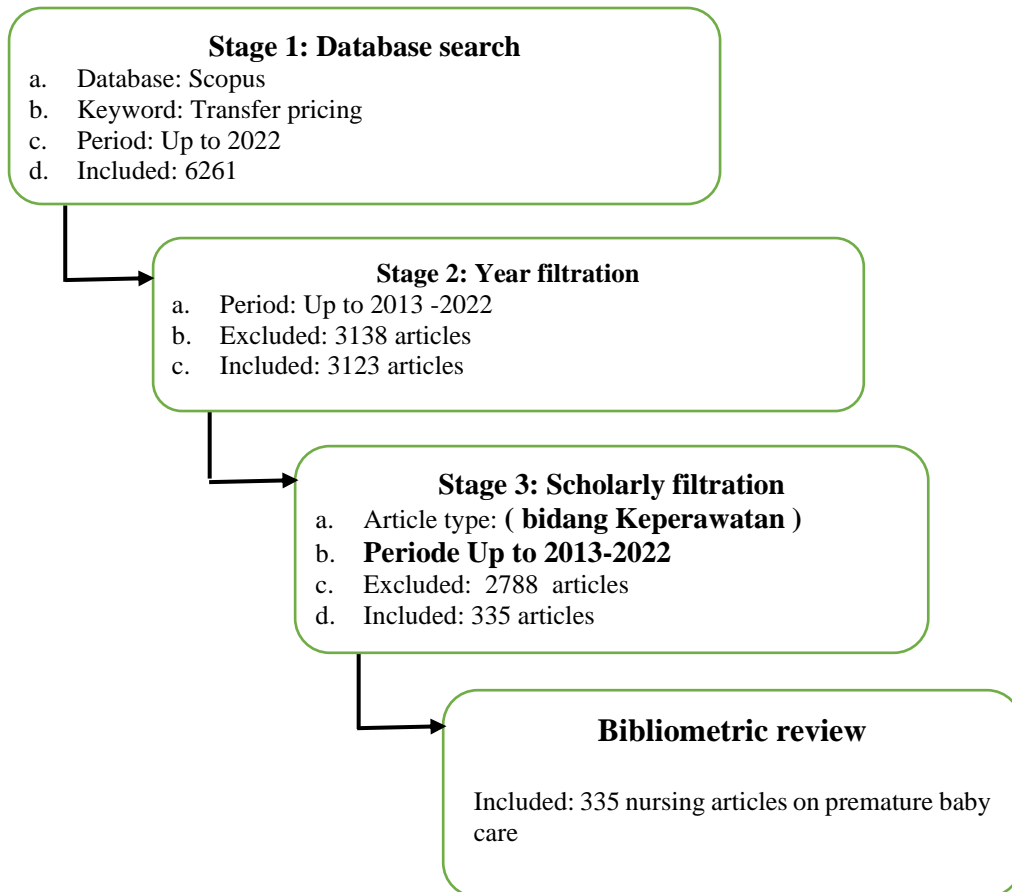


Figure 1. Searching Strategy for Reseach Data

Data Collection

Data collection from the Scopus database was carried out on March 31, 2023. Full record data from each publication was downloaded in CSV file format.

Bibliometric Analysis

Bibliometrics employed VOSviewer software (version 1.6.17, Leiden University, Leiden, The Netherlands) for network construction and visualization based on co-authorship and co-occurrence. The bibliometric study also utilized the PoP application to obtain information on citations per year, number of articles, number of citations, citations per year, citations per article, and citations per author. The output of the analysis produced a map of publications, countries, authors, citations, journals, articles and theme networks based on keywords.

RESULT AND DISCUSSION

Result

This project aims to visual mapping of research publications on premature baby care based on bibliometric analysis.

Quantitative Distribution of Research Publications (1947-2023)

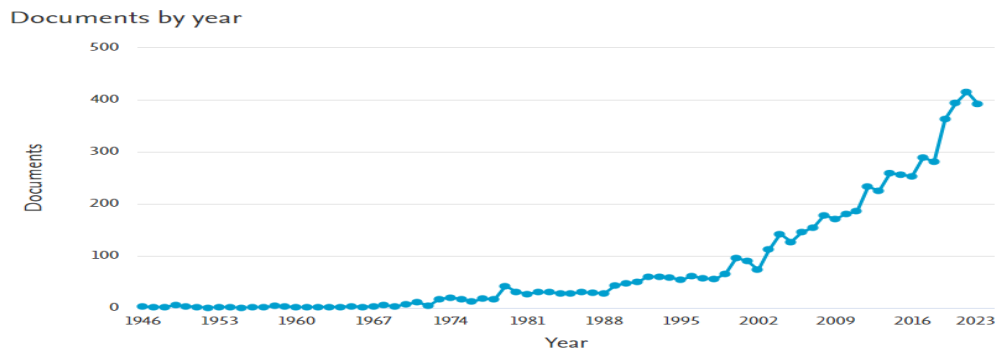


Figure 1 The Increase of Publications (1947-2023)

The publication of research articles discussing premature infant care has been started in 1946-2022, totaling 6102 documents. There is an increasing trend in the number of articles on premature baby care.

Quantitative Distribution of Research Publications : Trends in the Last 10 Years

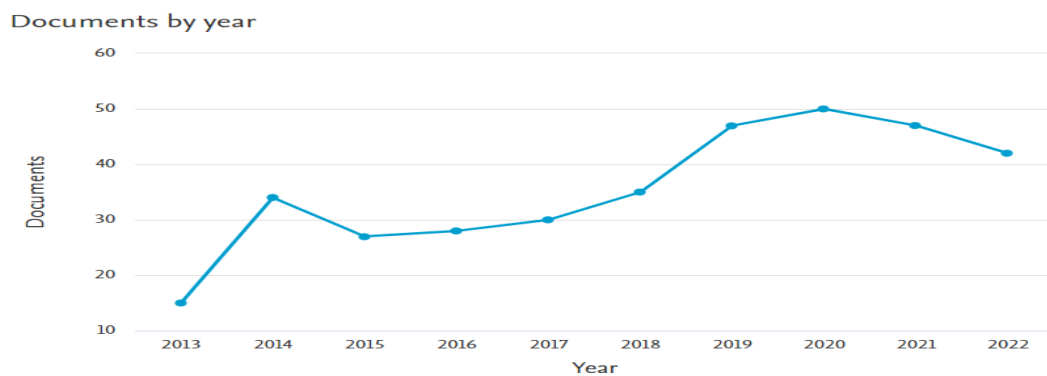


Figure 2 Distribution of Publication Trends in the Last Ten Years

Figure 2 presents the published articles on the trend of the last 10 years and illustrates that the care of premature babies has increased, but in some years such as 2014-2016 there has been a decrease in documents.

Distribution of Countries Producing Research on Premature Baby

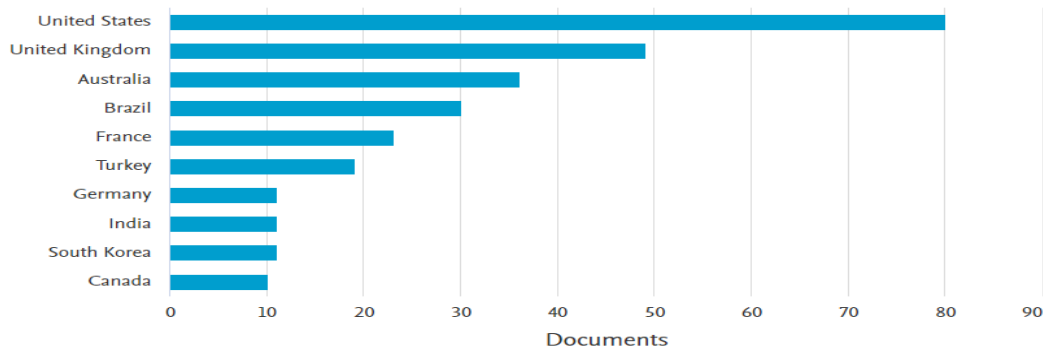


Figure 3 Distribution of Countries Producing Research on Premature Baby

The most productive country for premature baby care research is the United States with 28.5% of the total publications in the last 10 years.

Distribution of Institutions Producing Premature Baby Study

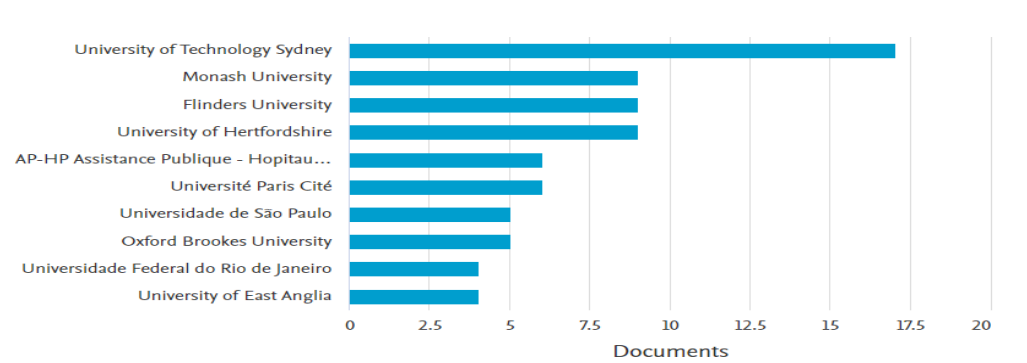


Figure 4 Top Institutions Publishing Most Study on Premature Baby

Figure 4 illustrates that the University of Technology Sydney, Monash University and Flinder University are the institutions that publish the most articles on the theme of premature baby care.

Distribution based on Document Type

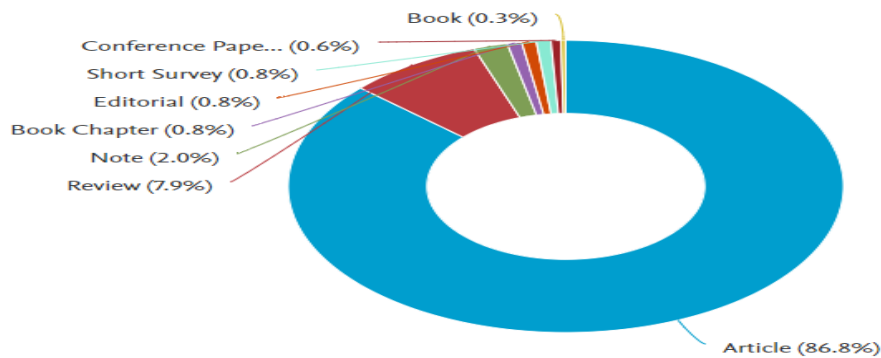


Figure 5 Distribution based on Document Type

Type document publications on premature infant care from 2013 to 2022. The publication is dominated by the type of Original Article by 86.7%.

Distribution based on Journal Article

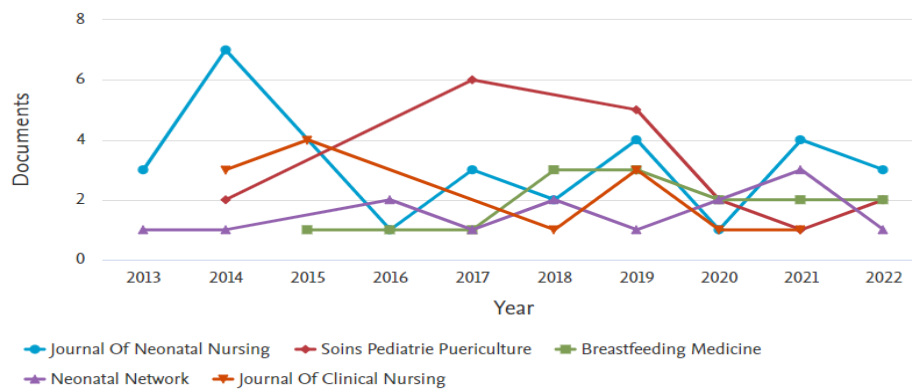


Figure 6 Percentage of Journal Article

The trend of producing journal documents over the last 10 years was generated in the journal of neonatal Nursing by 20.9%, Soins Pediatrie Puericulture 13.4%, and Breastfeeding Medicine 11.2%.

Distribution based on Keyword Analysis

Table 5. Top 30 Keywords of Research Document on Premature Baby Care

NO	KEYWORDS	Amount	LINK TOTAL	STRENGTH
1	Human	262	4197	
2	Humans	226	3844	
3	Newborn	214	3522	
4	Female	200	3549	
5	prematurity	198	3228	
6	Baby, newborn	195	3361	
7	Baby, premature	130	2210	
8	Baby	118	1924	
9	Adult	114	2252	
10	Aericle	109	2039	
11	pregnancy	94	1618	

12	Male	92	1765
13	Neonatal intensive care unit	92	1557
14	Intensive care units, neonatal	85	1534
15	pyschology	74	1376
16	Gestational age	63	1212
17	procedures	52	952
18	Mothers	49	871
19	Mother	48	975
20	Neonatal	48	974

The following 20 keywords above are based on the highest number of premature baby care during 2013-2022. The keyword “human” is found as many as 262 with a total link strength 4197

Visualization of Co-Occurrences Network

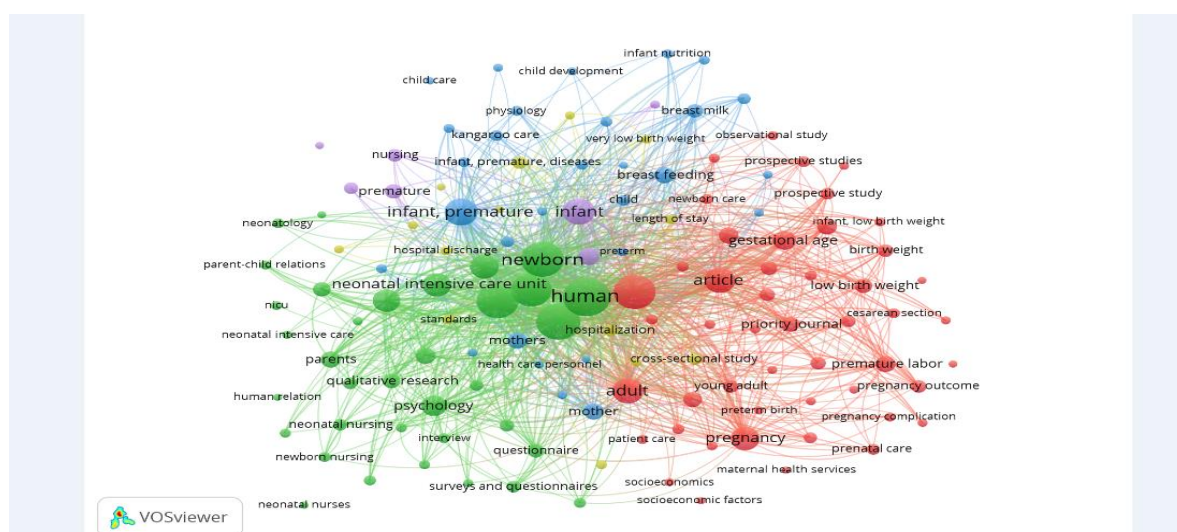


Figure 6. Visualization of Co-Occurrences Network

The number of keywords is 133 items divided into 5 clusters, 6290 links and Total Link Strength 41383. Different colors represent different clusters that work closely together, the size of the circle is proportional to the number of articles of the theme, and the distance between two themes illustrates the relatedness of the two themes. Among them, there are 5 different clusters, some of them are closely related to the theme

Research Citation on Premature Baby Care

Table 4 Top 10 Documents Cited in Research on Premature Baby Care

No	Authors	Title	Year	Source	Cites
1	L.M. Howard, H. Khalifeh	Perinatal mental health: a review of progress and challenges	2020	World Psychiatry	242
2	E.-S. Cho, S.-J. Kim, M.S. Kwon, H. Cho, E.H. Kim, E.M. Jun, S. Lee	The Effects of Kangaroo Care in the Neonatal Intensive Care Unit on the Physiological Functions of Preterm Babies, Maternal-Baby Attachment, and Maternal Stress	2016	Journal of Pediatric Nursing	116
3	A.C. Munn, S.D. Newan, M. Mueller, S.M. Phillips, S.N. Taylor	The Impact in the United States of the Baby-Friendly Hospital Initiative on Early Baby Health and Breastfeeding Outcomes	2016	Breastfeeding Medicine	105

4	A. Wesolowska, E. Sinkiewicz-Daro, O. Barbarska, U. Bernatowicz-Lojko, M.K. Borszewska-Kornacka, J.B. van Gudover	Innovative techniques of processing human milk to preserve key components	2019	Nutrients	69
5	J.A. Kavle, M. Landry	Addressing barriers to maternal nutrition in low- and middle-income countries: A review of the evidence and programme implications	2018	Maternal and Child Nutrition	63
6	L. Aydon, Y. Hauck, J. Murdoch, D. Siu, M. Sharp	Transition from hospital to home: Parents' perception of their preparation and readiness for discharge with their preterm baby	2018	Journal of Clinical Nursing	61
7	E.C. Romanis	Artificial womb technology and the frontiers of human reproduction	2018	Journal of Medical Ethics	56
8	R.E. Black	Global Prevalence of Small for Gestational Age Births	2015	Nestle Nutrition Institute Workshop Series	55
9	K. Finlayson, A. Dixon, C. Smith, F. Dykes, R. Flacking	Mothers' perceptions of family centred care in neonatal intensive care units	2014	Sexual and Reproductive Healthcare	49
10	E. Wilson, A.-K. Edstedt Bonamy, M. Bonet, L. Toome, C. Rodrigues, E.A. Howell, M. Cuttini, J. Zeitlin	Room for improvement in breast milk feeding after very preterm birth in Europe: Results from the EPICE cohort	2018	Maternal and Child Nutrition	48
11	J. Tinloy, C.H. Chuang, J. Zhu, J. Pauli, J.L. Kraschnewski, K.H. Kjerulff	Exercise during Pregnancy and Risk of Late Preterm Birth, Cesarean Delivery, and Hospitalizations	2014	Women's Health Issues	48
12	C. Ionio, E. Mascheroni, C. Colombo, F. Castoldi, G. Lista	Stress and feelings in mothers and fathers in NICU: Identifying risk factors for early interventions	2019	Primary Health Care Research and Development	48
13	M. Turner, A. Chur-Hansen, H. Winefield, M. Stanners	The assessment of parental stress and support in the neonatal intensive care unit using the Parent Stress Scale - Neonatal Intensive Care Unit	2015	Women and Birth	48
14	H. Aagaard, L. Uhrenfeldt, M. Spliid, L. Fegran	Parents' experiences of transition when their babies are discharged from the Neonatal Intensive Care Unit: a systematic review protocol	2015	Journal of Clinical Nursing	46
15	R. Bruno, E. Petrella, V. Bertarini, G. Pedrielli, I. Neri, F. Facchinetti	Adherence to a lifestyle programme in overweight/obese pregnant women and effect on gestational diabetes mellitus: a randomized controlled trial	2017	Maternal and Child Nutrition	46
16	F. Yuksel, S. Akin, Z. Durna	Prenatal distress in Turkish pregnant women and factors associated with maternal prenatal distress	2014	Journal of Clinical Nursing	40
17	M. Turner, A. Chur-Hansen, H. Winefield	The neonatal nurses' view of their role in emotional support of parents and its complexities	2014	Journal of Clinical Nursing	39
18	A. Stefana, E.M. Padovani, P. Biban, M. Lavelli	Fathers' experiences with their preterm babies admitted to neonatal intensive care unit: A multi-method study	2018	Journal of Advanced Nursing	38
19	C. Fowler, J. Green, D. Elliott, J. Petty, L. Whiting	The forgotten mothers of extremely preterm babies: A qualitative study	2019	Journal of Clinical Nursing	33
20	L. Brabin, B.J. Brabin, S. Gies	Influence of iron status on risk of maternal or neonatal infection and on neonatal mortality with an emphasis on developing countries	2013	Nutrition Reviews	33

Table 4 shows that the most citation publications are Perinatal mental health research: a review of progress and challenges published in 2020 with a total citation of 242.

In the era of internet publishing, the level of visits becomes the main indicator of a content. Unlike the case with publishing related to online journal articles, the quality indicator of a journal article is the citation rate. If the citations / citations are higher for the article, the quality value of the scientific article can also be said to be good, as published in the form of journals, books, proceedings and so on. The citation rate is also an indicator of assessing the effect of an article on the advancement of science, technological innovation, art and culture in their respective fields.

Table 5. Top 20 document comparison of articles cited with GS Rank on premature baby care

No Urut	Authors	Year	Publisher	Cites	GSRank	Cites Year	Per CitesPer Author
1	L.M. Howard, H. Khalifeh	2020	Blackwell Publishing Ltd	242	25	80.67	121
2	E.-S. Cho, S.-J. Kim, M.S. Kwon, H. Cho, E.H. Kim, E.M. Jun, S. Lee	2016	W.B. Saunders	116	92	16.57	17
3	A.C. Munn, S.D. Newman, M. Mueller, S.M. Phillips, S.N. Taylor	2016	Mary Ann Liebert Inc.	105	68	15	21
4	A. Wesolowska, E. Sinkiewicz-Darol, O. Barbarska, U. Bernatowicz-Lojko, M.K. Borszewska-Kornacka, J.B. van Goudoever	2019	MDPI AG	69	93	17.25	12
5	J.A. Kavle, M. Landry	2018	Blackwell Publishing Ltd	63	17	12.6	32
6	L. Aydon, Y. Hauck, J. Murdoch, D. Siu, M. Sharp	2018	Blackwell Publishing Ltd	61	24	12.2	12
7	E.C. Romanis	2018	BMJ Publishing Group	56	77	11.2	56
8	R.E. Black	2015	S. Karger AG	55	34	6.88	55
9	K. Finlayson, A. Dixon, C. Smith, F. Dykes, R. Flacking E. Wilson, A.-K. Edstedt Bonamy, M. Bonet, L. Toome, C. Rodrigues, E.A. Howell, M. Cuttini, J. Zeitlin	2014	Elsevier B.V.	49	39	5.44	10
10	J. Tinloy, C.H. Chuang, J. Zhu, J. Pauli, J.L. Kraschnewski, K.H. Kjerluff	2018	Blackwell Publishing Ltd	48	4	9.6	6
11	C. Ionio, E. Mascheroni, C. Colombo, F. Castoldi, G. Lista	2019	Cambridge University Press	48	36	12	10

13	M. Turner, A. Chur-Hansen, H. Winefield, M. Stanners	2015	Elsevier	48	54	6	12
14	H. Aagaard, L. Uhrenfeldt, M. Spliid, L. Fegran	2015		46	40	5.75	12
15	R. Bruno, E. Petrella, V. Bertarini, G. Pedrielli, I. Neri, F. Facchinetti	2017	Blackwell Publishing Ltd	46	44	7.67	8
16	F. Yuksel, S. Akin, Z. Durna	2014	<u>Wiley-Blackwell Publishing Ltd</u>	40	83	4.44	13
17	M. Turner, A. Chur-Hansen, H. Winefield	2014	<u>Wiley-Blackwell Publishing Ltd</u>	39	43	4.33	13
18	A. Stefana, E.M. Padovani, P. Biban, M. Lavelli	2018	Blackwell Publishing Ltd	38	22	7.6	10
19	C. Fowler, J. Green, D. Elliott, J. Petty, L. Whiting	2019	Blackwell Publishing Ltd	33	15	8.25	7
20	L. Brabin, B.J. Brabin, S. Gies	2013	<u>Oxford University Press</u>	33	72	3.3	11

The analysis of table 5 illustrates that there is a difference between the number of citations in the journal and the Google scholar Rank (GS Rank). A high number of citations is not always a high number of GS rank. There is a variation between the number of citations and GS Rank.

Discussion

A search of the Scopus database revealed that publications discussing premature infant care were first published in 1946. Figure 2 provides information on 6102 publications found until 2022. Documents on the scope of the nursing field found 614 publications. While in the trend of the last 10 years, the field of nursing obtained 355 publications. The cumulative index and the number of publications have increased from year to year. The publication with the most documents is the period of 2022. The most productive country conducting premature infant care research is the United States with the number of publications amounting to 28.5% of the total research in the last 10 years trend (Figure 3). The type of document is dominated by original articles by 86.7%, followed by review articles by 47.9 (Figure 5).

In the past decade, numerous researchers have delved into studies concerning the care of premature infants. An effective way to gauge the evolution of a scientific discipline is to analyze the interplay among keywords associated with that field. The publication of study results and scientific research serves as a comprehensive overview of the emerging topics within a specific scientific domain over a defined period. Consequently, scrutinizing the progression of research topics

not only provides insights into subjects currently under exploration by researchers but also influences the trajectory of knowledge advancement in that field.

This research identifies 58 countries that participated in publications in the last 10 years, and the country that dominated the publication of premature infant care is held by the United States at 19.04%, followed by the United Kingdom 11.9% and Australia 8.6% (Figure 3). Affiliations identified in this research is totally 350 institutions, which dominated the publication is held by the University of Technology Sydney at 4.8% of the total documents, followed by Monash University 2.6%, and Flinders University 2.5% (Figure 4). The 356 journals identified in this study are dominated by the Journal of Neonatal Nursing at 7.7%, followed by Soins Pédatrie Puericulture at 5.1% and Breastfeeding Medicine at 4.3% (Table 6).

A total of 159 authors have been identified in this study, but only 15 authors have more than 2 documents. The author with the most documents is Green, J. with 14 documents from University of Tasmania, Hobart, Australia. Followed by Petty, J. with 9 documents from University of Hertfordshire Hatfield, United Kingdom. However, the country with the most documents is the United States. This country always requires and promotes the scholars to produce the up to date research. It is reasonable that the United States can be the most productive country in producing research publication document.

Analysis of the number of citation percentages shows that the most cited publication articles are from authors namely L.M. Howard, H. Khalifeh. The title of the article is “Perinatal mental health: a review of progress and challenges”. In the 2020 World Psychiatry publisher, it shows 242 citations. Furthermore, there are E.-S. Cho, S.-J. Kim, M.S. Kwon, H. Cho, E.H. Kim, E.M. Jun, S. Lee in 2016 with the publisher Journal of Pediatric Nursing with 116 citations by the article entitled “The Effects of Kangaroo Care in the Neonatal Intensive Care Unit on the Physiological Functions of Preterm Babies, Maternal-Baby Attachment, and Maternal Stress”.

Based on the 355 documents identified, the publication entitled Perinatal mental health: a review of progress and challenges is the most cited article by other researchers (Table 4). Citations are subjected to bibliometric analysis to measure research impact as a reflection of the number of references an article receives over time. The results of the citation analysis are able to evaluate research performance, as well as find the most influential papers.(Aski et al., 2020; Kumar et al., 2023; Lv et al., 2019; Yadava et al., 2019)

The most citations are in the publication article Perinatal mental health: a review of progress and challenges: a review is the title of a paper that discusses perinatal mental health which has become an important focus in recent years. The paper is a type of review article that describes in full and broadly, so many authors cite the paper.

From the view of this research, there has not been a bibliometric analysis that presents a broader literature review related to concepts in the field of nursing, especially premature babies. Therefore, this research is conducted to explore information about the development of previous researches related to the phenomenon of premature baby care. Classifying research and trends in selected topics, as well as providing keyword insights can be applied by future researchers

in order to enrich literacy studies on premature baby care. The use of bibliometric analysis methods in studies is useful for measuring and estimating the growth and development of science in a certain period of time in a quantitative manner. The bibliometric analysis method can be used to determine the development of studies on the topic of premature infant care. This method can be used to find out the development of new topics in a discipline, examine the achievements of a study; analyze the relationship between a discipline and technology and mapping the topic of study of a scientific discipline. In addition, bibliometrics can be used to forecast future events or potentials so that they can bring greater benefits and help make accurate strategic plans.

CONCLUSION AND RECOMMENDATION

This study offers a comprehensive summary of the primary topics associated with the care of premature infants that have been investigated in recent years. The observed pattern reveals a consistent increase in the number of publications annually regarding prenatal care, signifying a growing interest in this particular subject.. The United States currently stands out as the country with the most publications on the theme of premature baby care. The number of publications amounted to 28.5% of the total research in the last 10 years of trend time. The highest number of publications and citations L.M. Howard, H. Khalifeh. The top institution publishing the most studies on premature infant care is the university of technology Sydney, whose main journal publishes studies on premature baby care that are multidisciplinary or interdisciplinary in nature.

Premature baby care has currently been carried out as an effort to improve the health status of infants. Many innovations have been developed to reduce morbidity and mortality rates of newborns with premature conditions. The government has supported the program to reduce infant morbidity, synergizing with other fields is an effort to achieve success. Therefore, it is necessary to intensify efforts to reduce mortality in premature babies. Innovation in the health sector is needed in order to optimize the development of premature babies so as to reduce the number of further disabilities. The goal is to optimize the growth and development of premature babies for the next life.

ACKNOWLEDGEMENT

The researchers would like to thank to Universitas 'Aisyiyah Surakarta for supporting this research. Then, they also thank to P3M who has helped in improving the grammar of the writing.

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