

Global Trends in Patient-Centered Fertility Care: A Bibliometric and Contextual Review

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ABSTRACT

Objective

This study provides a comprehensive bibliometric review of patient-centered care (PCC) in in vitro fertilization (IVF), a domain integral to improving patient outcomes, satisfaction, and experiences in assisted reproductive technology. By analyzing global research output and trends, this study aims to identify key themes, contributors, and gaps in the literature to inform future research and practice.

Methods

Data were collected from Scopus and Web of Science databases, covering the period from 2003 to 2024. Bibliometric analyses, conducted using R Studio and Biblioshiny, examined publication trends, keyword frequencies, and collaborative networks among authors, institutions, and countries. A supplementary literature review contextualized bibliometric findings to address limitations in metadata.

Results

A total of 54 studies from 33 unique sources were analyzed, revealing an annual growth rate of 11.57% in PCC publications up to 2023. The USA and the Netherlands led in research output, contributing 22 and 16 publications, respectively. Mayo Clinic and prominent authors such as Nelen W. and Kremer J. were key contributors. Keywords like “infertility,” “in vitro fertilization,” and “patient care” demonstrated increasing prominence, underscoring growing interest in PCC. Barriers to PCC were identified at institutional, communication, environmental, and personal levels, while facilitators included multidisciplinary approaches and technological integration.

Conclusion

This review highlights PCC's critical role in enhancing IVF outcomes and identifies gaps in psychological support, clinician-patient communication, and access equity. Recommendations include targeted interventions, international collaborations, and integration of personalized care models. Future research should explore innovative strategies to overcome barriers and advance PCC frameworks in fertility care.

Keywords

Patient Centered Care; Patient Centered Nursing; In Vitro Fertilization; Test Tube Fertilization

INTRODUCTION

Patient-centered care in the context of In Vitro Fertilization (IVF) has been a topic of increasing interest in recent years^(1,2). This approach, which prioritizes the needs and values of patients, is considered a key element in improving the quality of fertility care. The concept of patient-centered care first emerged in the nursing profession

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during the 1960s and was later adopted within infertility and assisted reproductive technology (ART) in the new millennium ^(1, 2). It is worth noting that infertility is a global health challenge of considerable magnitude. The estimated prevalence of infertility worldwide varies between 3.5% and 26.4%. However, the repercussions of infertility are more severe in developing countries, where one out of every four couples grapples with reproductive difficulties ⁽³⁻⁵⁾.

The path to infertility treatment is often long and filled with emotional and social stress (6, 7). In the past, the quality of infertility care was primarily evaluated based on outcome measures. However, this perspective is evolving, with an increasing emphasis on patient-centered care (PCC) as a crucial component of high-quality infertility care ^(2, 8, 9). Current research indicates that patients undergoing IVF treatment attach importance to seven out of eight dimensions of patient-centeredness. These dimensions include medical skills, respect, coordination, accessibility, information, comfort, support, partner involvement, and a good attitude of and relationship with fertility clinic staff. Furthermore, studies have shown that positive experiences of patient-centered care are associated with intentions to comply with fertility treatment ^(2, 10). Patient-centered care has been shown to significantly improve fertility outcomes, with research indicating a positive correlation between this approach and treatment success rates, patient satisfaction, and overall patient experience ^(11, 12).

Despite these advancements, there are still significant gaps in our understanding of patient-centered care in IVF ^(1, 2). For instance, while preliminary research has defined what “patient-centered care” is from the patients’ perspective, there is a need for more comprehensive studies to further explore this concept. Additionally, the psychological status of couples undergoing ART treatment, clinician-patient communication, and relational specificities featuring ART care are areas that require further investigation¹¹. Future research can focus on these areas to provide a more holistic understanding of patient-centered care in IVF. Such knowledge may help clinicians and healthcare organizations provide better care to couples affected by infertility problems and receiving ART treatments¹. Furthermore, the development and validation of a standardized questionnaire to measure patient-centered care in infertility health care could be a valuable tool for future studies^{2,11}.

Hence, a thorough review of the existing literature on PCC for patients experiencing infertility and undergoing ART treatments such as IVF is vital for the formulation of new empirical and therapeutic guidelines for infertility treatment. Moreover, an in-depth examination of the published literature is crucial for comprehending the subtleties of patient-centered care in the realm of infertility and IVF treatments, including its influence on treatment outcomes, patient satisfaction, and the overall healthcare experience. This can also offer insights into the challenges and opportunities present in implementing patient-centered strategies in fertility care settings. This understanding can steer the development of strategies to improve the quality of care for individuals and couples undergoing fertility treatments^{14,15}. While numerous review articles have discussed PCC for infertile patients undergoing ART treatments such as IVF ^(1, 14, 15), none have specifically scrutinized the global research output and trends in this field. Bibliometric analysis stands as a robust technique for the quantitative assessment of scholarly articles, facilitating researchers in tracking the progression of distinct fields. It is an instrumental tool that employs mathematical and statistical methodologies to scrutinize the expansion, productivity, and overarching patterns of publications pertinent to a specific subject ^(16, 17). Within the realm of medical research, such analyses are integral in illustrating research trajectories and advancements, motivating researchers to discern leading nations and institutions, as well as areas that warrant enhancement. This study will serve as a foundational reservoir of information for subsequent comparisons and evaluations. It endeavors to identify trends and progressions in this research domain and underscore potential areas for intensified focus and development.

MATERIALS AND METHODS

Research Approach

In order to conduct a comprehensive review of studies related to the patient-centered care for IVF patients, we gathered data from the Scopus and Web of Science Core Collection (WOS-CC). Our research approach was designed to be broad, covering various facets of this area of study. The data collection was carried out in May 2024. The search strategy can be encapsulated as follows: “Care, Patient-Centered” AND “In Vitro Fertilization” (Title) or “Care, Patient-Centered” AND “In Vitro Fertilization” (Abstract) (Table S1). The

search spanned from 2003 to 2024, without any time restrictions, in line with the indexing in the Scopus and Web of Science database. The information gathered from two databases was consolidated, meticulously reviewed, and any instances of repeated data were eliminated (Table S2).

We restricted our inclusion criteria to original and review research articles published in English. We excluded other types of publications and papers not relevant to the subjects of patient-centered care for IVF patients. The process of article selection is illustrated in Figure 1.

R Studio and Biblioshiny analysis

The bibliometric examination was carried out utilizing Rstudio v.4.4.0 software, a robust open-source statistical software, in combination with the bibliometric R-package. This was accessed on the date of 3 May 2024., in conjunction with the Biblioshiny tool. Biblioshiny enables user-friendly and interactive bibliometric studies, allowing for the investigation of trends in publications, networks of collaboration, and associations of keywords [12]. Networks of co-authorship were established to discern patterns of collaboration among researchers. An analysis of keyword cooccurrence was performed to pinpoint clusters of terms that represent research themes. Patterns of citations were scrutinized to ascertain the impact and influence of articles in the field.

Recognition of Key Institutions, Sources, Authors, and Collaborating Nations

We constructed graphical illustrations to depict the relationships between the most active institutions and authors, providing insights into their collaborative efforts. Countries were ranked in terms of productivity, based on the percentage of papers originating from each. Furthermore, we evaluated the degree of collaboration among the top 10 most productive countries. To represent this collaboration visually, we created a map based on the quantity of publications from each country.

Analysis of Keyword Frequencies

A temporal analysis was conducted with enhanced precision to monitor the periodic emergence of specific keywords over the years. A TreeMap was carefully constructed to illustrate the distribution and prominence of the top 10 most frequently occurring keywords. A detailed thematic analysis was performed to highlight the prevailing trends and themes within the selected articles.

RESULTS

Summary of the Studies

This study undertook a comprehensive exploration of the need of patient-centered care for IVF patients, examining articles published from 2003 to 2024. A total of 54 pertinent studies were rigorously scrutinized, originating from 33 unique sources. The analysis incorporated contributions from 198 authors, yielding an acceptable average of 16.67 citations per document over the past decade. The most significant findings regarding the need of patient-centered care for IVF are outlined, drawing from the most frequently cited research articles of the past decade (Table 1). Moreover, the Annual Growth Rate until 2023 for this field of research was calculated to be 11.57%, indicating a consistent increase in scholarly publications over the study duration. However, this value for 2024 was 0%, a result which can be valuable at the end of 2024. The substantial volume of research output is further underscored by the inclusion of 316 references and 190 unique author keywords. Collaborative studies involving the authors accounted for 4.81% of the research endeavors.

Trends in Publication and Citation

The data reveals variations in the average total citations per article over different years. Specifically, in 2006, there was a marked rise in the average total citations per year, peaking at 5.2. In contrast, 2007 saw the lowest value, with an average of zero citations per year. Furthermore, the quantity of publications fluctuated annually, with the greatest number of articles published in 2022 ($N = 7$) and the fewest in 2004, 2005, and 2009 ($N = 0$). Figure 2 graphically illustrates the trend in publications over the years (Figures 1A and 1B).

To characterize the distribution of scientific articles across various journals, Bradford's Law was used. It was meticulously identified three core journals that consistently attracted researchers (Figure 3A). Based on Bradford's Law, these core journals collectively accounted for a significant portion of the total articles published on the patient-centered care for IVF patients. Our analysis of publication data from these core journals revealed that the journal "Human Reproduction" emerged as the most prolific, contributing a noteworthy 10 articles—approximately 18% of the total articles within the study period (Table 2). Additionally, we examined the local citations received by these

core journals from other articles within our dataset. Remarkably, “Human Reproduction” stood out with the highest number of local citations, amassing an impressive total of 285 citations (Figure 3B).

Prominent Institutions, Authors, Nations, and Their Network of Collaboration

Mayo clinic, located in USA, contributed 10 articles, representing 18.5% of the total research output on the subject (Figure 4A). The authors, Nelen W. and Kremer J had highest number of articles with 9 and 8 articles, respectively (16.6% and 14.8% of total articles, respectively). The authors who have published the most papers are detailed in Figure 4B. The Three-Fields Plot effectively portrays the complex network of relationships among cited references, authors, and author keywords. This offers precious understanding into the context of patient-centered care for IVF patients over the decade from 2003 to 2024 (Figure S1).

USA and the Netherlands emerged as the frontrunners in scientific output, contributing 22 and 16 publications, respectively. This was followed by Sweden with 5 articles, Brazil with 4, and the Denmark with 4 papers (Table S3). Publications from a single country accounted for 40.7% and 29.6% in USA and the Netherlands, respectively. On the other hand, collaboration was observed among European countries. Brazil and Spain, as well as Sweden and Norway, each produced some of their research output in collaboration with each other. English grammar: No collaboration was observed between the other countries (Figure S2).

Intersection, Emerging Trends, and Key Terms

Biblioshiny was used to scrutinized the most frequently encountered author keywords. The analysis encompassed commonly found infertility, in vitro fertilization, patient care, and terms associated with patient-centered care. Keywords pertaining to in vitro fertilization (“in vitro fertilization”), infertility (“infertility”) and patient care (“patient care”) displayed a rising trend, with 63, 36 and 36 instances in 2024, respectively. The frequency of the keywords “infertility therapy” and “patient-centered care” remained fairly constant over the years, with 22 and 21 instances in 2024, respectively. Research on pregnancy witnessed a significant surge, with 25 instances in 2024, indicating increasing focus on these patients. Keywords related to health care quality have consistently attracted research interest over the years, with 16 instances in 2024, reflecting the importance of

patient care quality (Figure S3).

The chronological examination of key terms indicates that “patient care” reached its highest citation count in 2017, while “patient-centered care” maintained its relevance in 2016. Subjects such as in vitro fertilization (24%), infertility (14%), and infertility therapy (8%) also exhibit significant frequencies, reflecting the ongoing interest in infertility disease and its treatments’ methods (Figure S4).

Altogether, this research offers a thorough analysis of the worldwide scientific work on thymoquinone in the context of cancer studies over the previous ten years. It highlights the foremost journals in this area, the articles with the greatest influence, and the most fruitful collaborations among institutions, authors, and nations. Furthermore, it brings to light the significant and emerging terms that have garnered interest. The insights from this study present a clear picture of the current research scenario, emphasizing potential areas that are primed for further investigation.

DISCUSSION

Bibliometric studies offer a quantitative assessment of scholarly literature, enabling researchers to track the progression, productivity, and overarching patterns of publications within a specific field. These analyses provide valuable insights into research trends, collaborations, and emerging areas of focus, making them instrumental tools for guiding future research endeavors. Bibliometric analysis is a way to look at the impact of different research areas, how important individual researchers are, and how relevant certain academic articles are. It also helps to find out which papers are really influential, which helps us understand the whole picture of specific research fields ⁽¹⁸⁾.

The findings of this bibliometric analysis underscore the growing recognition of PCC as a crucial component of high-quality infertility care, particularly in the context of IVF treatment. The study’s identification of a consistent increase in scholarly publications, with an Annual Growth Rate of 11.57% until 2023, reflects the increasing attention being paid to this area of research.

One of the key results of previous studies are the great effectiveness of PCC in IVF patients. These studies highlight the positive correlation between PCC and improved fertility outcomes, treatment success rates, patient satisfaction, and overall patient experience (19-

23). The aim of this comprehensive analysis was showing the importance of this matter; which aligns with previous literature, which has consistently demonstrated the benefits of adopting a patient-centered approach in fertility care ^(19-22, 24). Moreover, Han et al. declared that the study of patient-centered care continues to be a primary area of focus in research. This finding indicates that future investigations should concentrate on refining clinical nursing practices, elevating the standard of care, and safeguarding the delivery of care. Moreover, in response to the escalating demand for healthcare, it is imperative that nursing research evolves to keep pace with trends and address the healthcare requirements of the broader community ⁽²⁴⁾.

Furthermore, previous studies emphasize on the importance of seven out of eight dimensions of patient-centeredness for IVF patients, including medical skills, respect, coordination, accessibility, information, comfort, support, and partner involvement, further reinforces the need for a holistic and comprehensive approach to fertility care ^(20, 25). By prioritizing these aspects, healthcare providers can enhance the overall quality of care and improve patient outcomes.

In addition, the identification of gaps in our understanding of PCC in IVF, particularly from the patients' perspective and in areas such as the psychological status of couples undergoing ART treatment, clinician-patient communication, and relational specificities featuring ART care, underscores the need for further research ⁽¹⁷⁾. Addressing these gaps can provide a more comprehensive understanding of the unique challenges and needs of individuals and couples undergoing fertility treatments, ultimately leading to the development of more effective and tailored interventions.

The study's findings also highlight the importance of collaborative efforts and international cooperation in advancing research on PCC in IVF. The identification of the USA and the Netherlands as frontrunners in scientific output, coupled with the observation of limited collaborations among other countries, suggests the potential for increased global partnerships and knowledge-sharing. Such collaborations can facilitate the exchange of best practices, foster cross-cultural understanding, and accelerate the development of innovative strategies for patient-centered fertility care ^(26, 27).

Furthermore, the analysis of keyword frequencies and emerging trends provides valuable insights into the

evolving focus areas within PCC research for IVF patients. The rising prominence of keywords such as "pregnancy" and "health care quality" reflects the growing emphasis on patient outcomes and the overall quality of care, which is consistent with the goals of patient-centered care.

Advantages and Disadvantages of Bibliometric Studies

Bibliometric analysis serves as a valuable tool for identifying key trends, influential authors, and prominent institutions in PCC research. These studies provide evidence-based insights into the evolution of scholarly focus, thereby guiding future research priorities ⁽¹⁸⁾. However, bibliometric analyses face certain limitations. Firstly, the reliance on citation metrics can overlook seminal works published in less-cited journals, potentially skewing the results ⁽¹⁷⁾. Secondly, bibliometric studies fail to capture qualitative aspects such as patient experiences, ethical considerations, and socio-cultural influences on PCC practices ⁽²⁸⁾. For instance, a focus on numerical indicators might neglect the emotional and psychological dimensions of patient-centered IVF care ⁽²⁹⁾. Therefore, bibliometric analysis, while instrumental in mapping research trajectories, must be complemented by in-depth literature reviews to provide richer, contextually grounded insights into PCC for IVF.

Barriers to Patient-Centered Care and Communication

Despite its recognized benefits, implementing PCC in IVF encounters numerous barriers. These barriers span institutional, systemic, communication, environmental, and personal domains, each influencing the patient experience and overall care quality.

Institutional and Healthcare System-Related Barriers

Institutional and healthcare system barriers significantly hinder the implementation of PCC. These include rigid institutional policies, insufficient funding, lack of training in PCC principles, and resource constraints ⁽³⁰⁾. For example, in many healthcare systems, the focus remains predominantly on treatment success rates, with insufficient attention to the emotional and psychological needs of IVF patients ⁽³¹⁾. Furthermore, healthcare providers often operate under time constraints, which limits their ability to engage in meaningful communication with patients ⁽³²⁾. Such systemic challenges undermine the holistic care philosophy central to PCC.

Additionally, disparities in access to IVF services

exacerbate inequities in care quality. Low-resource settings often lack the infrastructure required for effective PCC, such as psychological counseling services, which are essential for addressing the emotional toll of infertility⁽³³⁾. Addressing these barriers requires systemic reforms, including increased funding, training, and policy adjustments to prioritize patient-centered approaches in IVF care.

Communication-Related Barriers

Effective communication is a cornerstone of PCC but remains a significant challenge in IVF settings. Barriers to communication include medical jargon, cultural differences, and the inherent emotional stress associated with infertility⁽³⁴⁾. Many patients report dissatisfaction with the level of information provided, particularly regarding treatment risks, alternatives, and outcomes⁽²⁰⁾. Moreover, power dynamics between patients and providers can discourage open dialogue, leading to unmet expectations and reduced trust in the healthcare system⁽³⁵⁾.

To overcome these barriers, healthcare providers must adopt strategies that enhance transparency and shared decision-making. This includes using patient-friendly language, actively involving patients in treatment planning, and fostering an environment where patients feel comfortable expressing their concerns⁽³⁶⁾. Training programs focused on communication skills can also equip clinicians with the tools needed to navigate these challenges effectively.

Environment-Related Barriers

The clinical environment plays a pivotal role in shaping patient experiences. Inadequate privacy, overcrowded clinics, and a lack of patient-friendly spaces can create a stressful atmosphere, undermining the principles of PCC⁽³⁷⁾. For instance, IVF procedures often involve frequent visits to the clinic, making the environment a critical factor in patient satisfaction. Studies have shown that patients value comfort, privacy, and respect during their interactions with healthcare providers⁽³⁸⁾.

Improving the physical and emotional environment in IVF clinics requires investments in infrastructure and a cultural shift towards more patient-centric practices. Simple measures such as ensuring private consultation rooms, reducing wait times, and creating a supportive atmosphere can significantly enhance the patient experience⁽³⁹⁾.

Personal and Behavior-Related Barriers

Patient-related factors also influence the success of PCC in IVF. Personal barriers include psychological distress, fear, and mistrust of healthcare providers, which can hinder effective communication and engagement⁽⁴⁰⁾. Behavioral factors, such as reluctance to ask questions or adhere to treatment plans, further complicate the delivery of PCC⁽²⁰⁾.

Healthcare providers must adopt empathetic and individualized approaches to address these challenges. Psychological support services, such as counseling and peer support groups, can help patients cope with the emotional burden of infertility and foster trust in the care process⁽⁴¹⁾. Additionally, empowering patients through education and active involvement in their care can mitigate behavioral barriers and enhance adherence to treatment protocols⁽⁴²⁾.

Facilitators of Patient-Centered Care and Communication

Facilitators of PCC in IVF include strong patient-provider relationships, effective use of technology, and a multidisciplinary approach to care. Building trust and rapport with patients is essential for fostering open communication and shared decision-making⁽²⁹⁾. Advances in technology, such as electronic health records and telemedicine, offer new opportunities to enhance patient engagement and streamline care processes⁽³⁹⁾.

Moreover, a multidisciplinary approach that integrates medical, psychological, and social support services can address the diverse needs of IVF patients. Collaborative care teams, including reproductive specialists, mental health professionals, and patient advocates, can provide comprehensive and coordinated care, aligning with the principles of PCC⁽³⁸⁾.

Solutions and Strategies to Overcome Barriers

To overcome barriers to PCC, healthcare systems must implement targeted strategies that address systemic, communication, and environmental challenges. Key solutions include:

Policy Reforms: Advocating for policies that prioritize PCC in healthcare systems, including funding for training programs and infrastructure improvements⁽⁴³⁾.

Provider Training: Developing training programs focused on communication skills, cultural competence, and empathy to enhance patient-provider interactions (36).

Technology Integration: Leveraging digital tools such as telemedicine and online patient portals to facilitate communication and access to information (39).

Support Services: Establishing psychological counseling and peer support programs to address the emotional needs of IVF patients (41).

Patient Education: Empowering patients through education about their treatment options, potential risks, and expected outcomes to enhance engagement and adherence (42).

Future Prospects

The future of PCC in IVF lies in integrating personalized care approaches, advancing research, and fostering global collaborations. Personalized medicine, which tailors treatments based on individual patient characteristics, holds promise for enhancing the effectiveness and patient-centeredness of IVF care (44, 45). Further research is needed to explore the psychological and relational aspects of PCC, as well as the long-term outcomes of patient-centered approaches in IVF (29).

Global collaborations can facilitate knowledge-sharing and the development of standardized PCC guidelines, addressing disparities in care quality across regions. By embracing these strategies, the field of IVF can continue to evolve, ensuring that patient-centered principles remain at the forefront of fertility care.

CONCLUSION

This bibliometric and literature-based review underscores the increasing scholarly focus on patient-centered care (PCC) in IVF as a pivotal strategy to enhance patient outcomes and satisfaction. Key findings include the identification of barriers spanning institutional constraints, communication challenges, and environmental and personal factors and the exploration of facilitators such as multidisciplinary teams and technology-driven solutions. Notably, this study adds value by integrating a critical review of existing research with bibliometric data, identifying

trends and gaps in global research output. The analysis reveals significant strides in PCC research, yet persistent gaps in addressing psychological and relational aspects of care remain. The study emphasizes the importance of fostering international collaborations and developing standardized, patient-centered practices tailored to diverse sociocultural contexts. By addressing these challenges, the field can move towards more equitable and comprehensive care for individuals and couples undergoing fertility treatments. This work lays the foundation for advancing PCC research and practice, ensuring its central role in improving the quality of infertility care globally.

DECLARATIONS

Supplementary Materials: Not applicable.

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, L.S.Y. and A.A.; methodology, L.S.Y., A.T.K., V.N.L., L.Z.O., A.N.N., M.G.N., and A.A.; software, A.A.; validation, L.S.Y., A.T.K., V.N.L., L.Z.O., A.N.N., M.G.N., and A.A.; formal analysis, L.S.Y. and A.A.; investigation, L.S.Y. and A.A.; resources, L.S.Y. and A.A.; data curation, L.S.Y. and A.A.; writing original draft preparation, L.S.Y., A.T.K., V.N.L., L.Z.O., A.N.N., M.G.N., and A.A.; writing review and editing, L.S.Y. and A.A.; visualization, L.S.Y. and A.A.; supervision, L.S.Y. and A.A.; project administration, L.S.Y. and A.A.. All authors have read and agreed to the published version of the manuscript.”

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Acknowledgments: Not applicable.

Conflicts of Interest: Author Alireza Afshar was employed by PerciaVista R&D Co. The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Table 1. The top 10 most cited documents on patient-centered care for IVF patients (2003–2024)

Rank	Study ID [References]	Title of the Document	Journal Name	Total Citations	DOI
1	Schmidt L., 2006 (46)	Infertility and assisted reproduction in Denmark	Danish Medical Bulletin	151	NA
2	Schmidt L., 2003 (47)	High ratings of satisfaction with fertility treatment are common: findings from the Copenhagen Multi-centre Psychosocial Infertility (COMPI) Research Programme	Human Reproduction	92	10.1093/humrep/deg505
3	Rooney KL., 2016 (48)	The impact of stress on fertility treatment	Current Opinion in Obstetrics and Gynecology	51	10.1097/GCO.0000000000000261
4	Baysal O., 2015 (49)	Decision-making in female fertility preservation is balancing the expected burden of fertility preservation treatment and the wish to conceive	Human Reproduction	46	10.1093/humrep/dev116
5	Tuill Ws., 2006 (50)	Patient-centred care: using online personal medical records in IVF practice	Human Reproduction	46	10.1093/humrep/del214
6	Edmonds Bt., 2014 (51)	Shared decision-making and decision support: their role in obstetrics and gynecology	Current Opinion in Obstetrics and Gynecology	36	10.1097/GCO.0000000000000120
7	Wilkinson J., 2017 (37)	Developments in IVF warrant the adoption of new performance indicators for ART clinics, but do not justify the abandonment of patient-centred measures	Human Reproduction	28	10.1093/humrep/dex063
8	Trenaman L., 2014 (52)	Measuring the cost of care in benign prostatic hyperplasia using time-driven activity-based costing (TDABC)	Healthcare	27	10.1016/j.hjdsi.2014.09.002
9	Van Empel Iwh., 2011 (53)	Organizational determinants of patient-centered fertility care: a multilevel analysis	Fertility and sterility	26	10.1016/j.fertnstert.2010.08.021
10	Vercellini P., 2015 (54)	Introduction: Management of endometriosis: moving toward a problem-oriented and patient-centered approach	Fertility and sterility	25	10.1016/j.fertnstert.2015.09.004

Table 2. The top 10 most cited journals on patient-centered care for IVF patients (2003–2024).

Journal	Number of Articles
Human Reproduction	285
Fertility and Sterility	110
Current Opinion in Obstetrics and Gynecology	87
Journal of Assisted Reproduction and Genetics	38
Bmc Women's Health	35
Australian Family Physician	18
Acta Obstetricia Et Gynecologica Scandinavica	16
Reproductive Biomedicine Online	14
Human Reproduction Open	6
Australian and New Zealand Journal of Obstetrics and Gynaecology	6

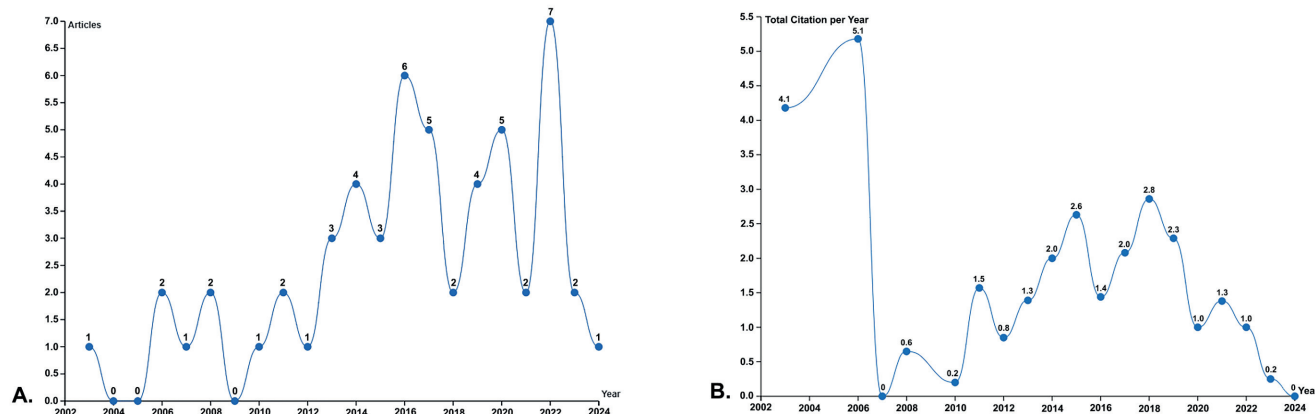


Figure 1. The diagrammatic representation of the screening procedure employing PRISMA.

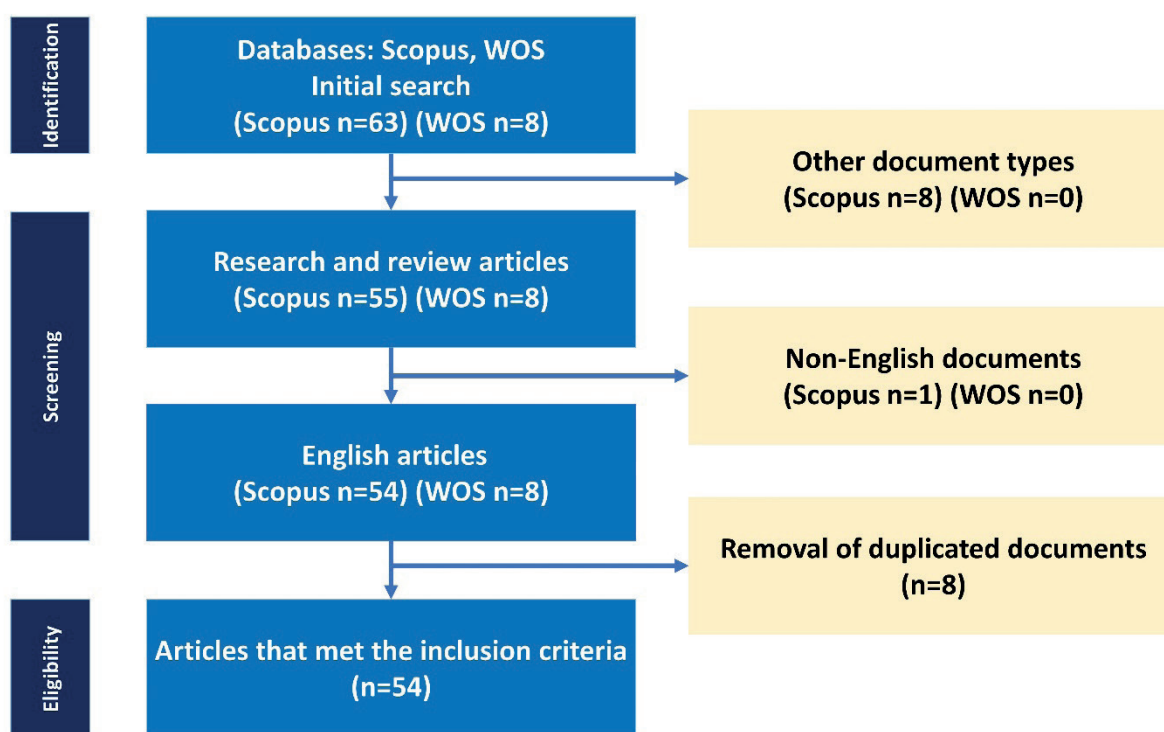


Figure 2. The worldwide yearly pattern of (A) the number of publications and (B) citations related to patient-centered care for IVF patients (2003–2024) is presented.

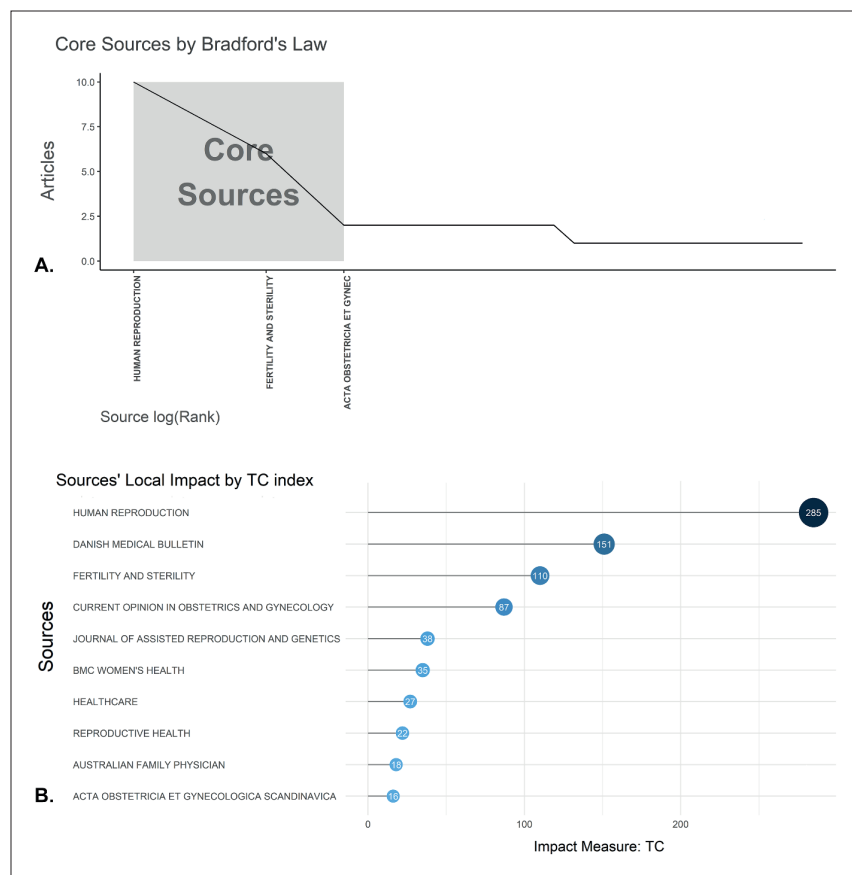


Figure 3. (A) The application of Bradford's Law has led to the identification of three key journals focusing on the patient-centered care for IVF patients during the period from 2003 to 2024. (B) Sources' local impact of the journals represented by their total citations from 2003 to 2024.

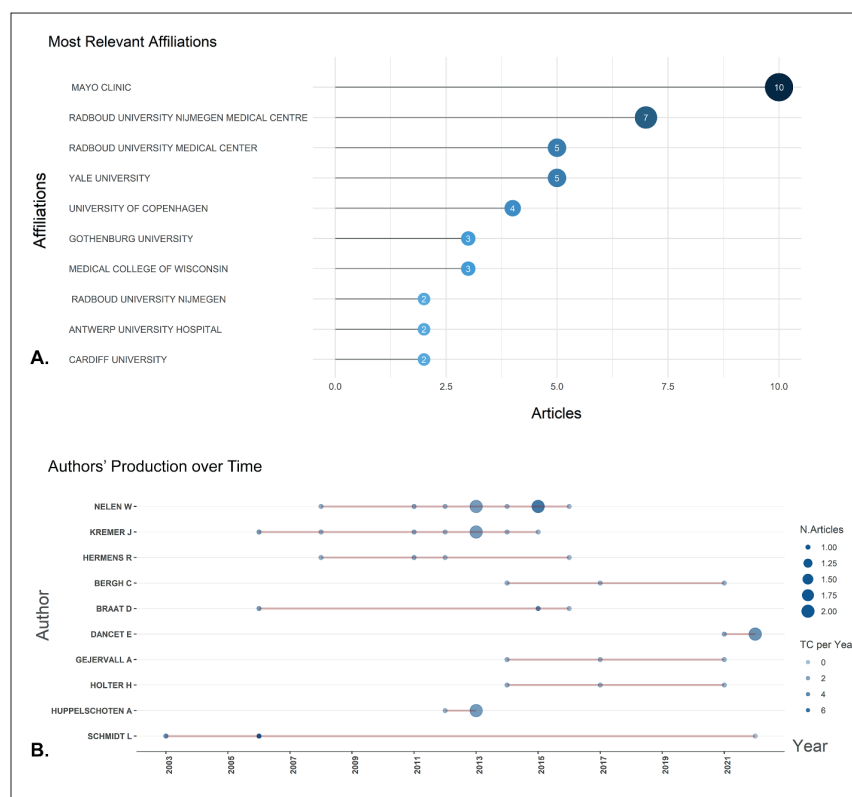


Figure 4. The most prolific authors, institutions, countries, and their collaborative network are depicted in (A). In (B), the ten authors who have made the most significant contributions and their output over time on the subject of the patient-centered care for IVF patients from 2003 to 2024 are presented.

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