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HOMNYA
Envisioning Health Innovation

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TABLE OF CONTENTS

HOMNYA
Envisioning Health Innovation

LUCINA
The official journal of the National Federation of the Councils of Midwifery Profession
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One Million More Midwives: a Professional and Systemic Responsibility

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Keywords: *International Day of the Midwife; Midwifery workforce; Maternal and neonatal health.*

The International Day of the Midwife 2026 takes place in a global context that calls for an urgent and unavoidable reflection on the strategic role of the midwifery profession within contemporary healthcare systems. The theme "One Million More Midwives" reflects a well-established reality: without adequate investment in the midwifery workforce, it will not be possible to ensure safe, equitable, and sustainable levels of care. International estimates indicate a need for approximately one million additional midwives worldwide. This figure should not be interpreted merely as a staffing shortage, but rather as a structural indicator of the fragility of healthcare systems in their capacity to meet sexual, reproductive, maternal, and neonatal health needs. The uneven distribution of human resources, insufficient workforce planning in education and training, and the limited recognition of the profession all contribute to a complex situation that requires coordinated and sustained interventions at both international and national levels.

Available scientific evidence consistently shows that midwife-led models of care are associated with improved outcomes for women and newborns. Continuity of care, a personalized approach, and integration within multidisciplinary pathways are key determinants of care quality. However, these outcomes cannot be fully achieved without an adequate number of professionals and without organizational systems able to enhance their skills and autonomy.

The issue, in fact, is not exclusively quantitative. The shortage of midwives is closely related to the quality of work, job stability, recognition of advanced competencies, and the development of professional leadership. In many healthcare settings, midwives are not yet fully integrated into decision-making processes, despite their central role in the health pathways of women and families. In this sense, the International Day of the Midwife takes on a significance that goes beyond celebration. It becomes an opportunity to reaffirm the deeply strategic nature of the profession and to draw attention to the need for

forward-looking health policies able to invest in education, employment, and professional development.

The "One Million More Midwives" campaign promoted by the International Confederation of Midwives is not merely a numerical target, but a vision of global health that places equity, quality of care, and recognition of the value of midwives at its core. Reducing inequalities and improving maternal and child health outcomes depend largely on the ability of healthcare systems to strengthen this profession in a structural and continuous way.

The challenge we face today concerns not only the present, but above all the future. Investing in midwives means investing in the sustainability of healthcare systems, the safety of care, and the protection of the rights of women and future generations. It is a responsibility that involves institutions, the scientific community, and the profession itself, and it requires a shared and concrete vision. From this perspective, the International Day of the Midwife 2026 represents a moment of awareness and commitment: not a point of arrival, but a necessary step to reaffirm that global health inevitably depends on strengthening the midwifery profession.

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President FNOPO

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Protecting Physiology in the Delivery Room: What is the Future of the Low Obstetric Risk Model?

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Abstract

This perspective and policy reflection explores the evolving role of midwifery care within contemporary healthcare systems, highlighting the need to reorient maternity care interventions toward models aimed at promoting and safeguarding physiological processes, centred on the person, and grounded in a rights-based approach. In the context of increasing chronic conditions, psychosocial stress, and the medicalisation of pregnancy and childbirth, the promotion of physiology – particularly during the first 1,000 days – emerges as a strategic public health priority with long-term implications for maternal, neonatal, and societal well-being. The paper examines organisational models such as the Low Obstetric Risk (LOR) framework and the Italian Community Health Centres, emphasising their capacity to enhance continuity of care, reduce unnecessary interventions, and address social and health inequities. Special attention is given to the midwife's role as case manager, including in non-physiological scenarios such as labour with epidural analgesia, where interdisciplinary collaboration and emotional, relational, and informational support remain essential. The article further discusses the competencies required of the 21st-century midwife, underscoring continuous education, advanced clinical skills, community engagement, and participation in research and innovation – including the ethical integration of artificial intelligence. The work advocates for a paradigm shift toward an integrated, holistic, and salutogenic model of maternity care, positioning midwives as key agents in promoting individualised, safe, and sustainable birth pathways.

Keywords: *Low Obstetric Risk (LOR); Midwife-led care; Physiology; First 1000 days; Community Health Centres; Epidural; Continuity of care; Salutogenesis.*

Physiology, Contemporary Society, and Health Promotion in the First 1000 Days

In a constantly evolving healthcare context, it is essential to reflect on the future of midwifery care and on how to enhance physiological processes. Contemporary society is characterised by an increase in chronic diseases, sedentary lifestyles, and rising levels of psychosocial stress. These conditions contribute to the medicalisation of physiological events, including pregnancy and childbirth, which are increasingly treated as pathological conditions requiring monitoring and clinical intervention, even when not strictly necessary.

This trend has significant implications both for healthcare systems, resulting in increased interventions and costs, and for culture, as it reduces individuals' trust in the natural processes of the human body. Therefore, promoting physiology becomes a strategic priority, particularly in pregnancy and childbirth[1]. Supporting the natural unfolding of these processes means fostering a model of health that respects biological timing and prioritises the mother–infant dyad[2,3].

A substantial body of scientific evidence has demonstrated that the first 1000 days of life – from conception to the child's second year – represent a critical window of opportunity for both individual and public health. Maternal health conditions during pregnancy, nutrition, family environment, and psychosocial support significantly influence neonatal neurocognitive, immune, and psychosocial development, as well as long-term well-being, with lasting effects into adulthood[4,5].

Investing in the first 1000 days, therefore, means investing in a healthier, more equitable, and resilient society. Public policies must recognise this priority by allocating adequate resources and promoting strong interdisciplinary collaboration between health and social professionals[4,5].

In this context, the implementation of parenting support programmes is particularly important to assist families during the delicate transition following childbirth. Attention to maternal and paternal mental health, as well as the promotion of healthy lifestyles, are essential components of a truly holistic approach.

Midwives play a crucial role in this framework through prevention, education, support, and continuous care. Their contribution extends beyond pregnancy and childbirth to include postnatal support – such as breastfeeding promotion, prevention of postpartum depression, parenting support, and guidance toward health and social services – ensuring continuity of care throughout the birth pathway. This integrated approach improves maternal and neonatal outcomes and contributes to reducing social and health inequalities.

Midwives also act as a bridge between scientific evidence and women's lived experiences, promoting a culture of birth that recognises health as a holistic, global, and One Health concept, not merely the absence of disease.

From this perspective, public policies should invest in first 1000 days programmes involving not only the healthcare sector but also educational and social services. The interconnection between physical health, mental well-being, and socioeconomic conditions highlights the need for an integrated, multidisciplinary, and multidimensional approach[4,5]. Due to their specific training and competencies, midwives play a key role in caring for women and couples throughout the birth pathway, promoting physiological processes through a salutogenic model and activating integrated care pathways when necessary.

Care and Organisational Models

The LOR Model and the Community Health Centres

The structuring of care models is one of the main challenges for contemporary healthcare systems. The traditional hospital-based, physician-centred model has ensured safety for decades but has also contributed to the progressive medicalisation of childbirth.

The transition toward midwifery-led models involves reorienting healthcare systems from fragmented, risk-oriented care toward models in which women and newborns receive equitable, person-centred, respectful, integrated, and high-quality care from conception throughout the postnatal period. This care is provided and coordinated by midwives working collaboratively within interdisciplinary teams.

Midwifery care models are adaptable across different levels and contexts, including home, community, and hospital settings; public and private sectors; public–private partnerships; low-resource settings; and humanitarian or crisis contexts. These models ensure accessibility, equity, and cultural relevance for women, newborns, families, and communities.

The core principles guiding midwifery care models include equity and human rights-based care for all women and newborns; person-centred and respectful care fostering trust and partnership; high-quality care aligned with midwifery philosophy; midwife-coordinated care across all settings; and integrated, collaborative care.

In 2017, the Italian Ministry of Health[6], issued guidelines for the autonomous management of low-risk pregnancies by midwives, leading to the progressive implementation of the Low Obstetric Risk (LOR) model. In this model, the midwife is a primary reference professional for women with low-risk pregnancies, promoting physiological processes, reducing unnecessary clinical interventions, and restoring women's active role in their birth experience.

Furthermore, Ministerial Decree 77/2022 introduced a new organisational structure for community healthcare in Italy, identifying "Community Health Centres" as key proximity-based facilities[7]. These centres aim to provide integrated, multidisciplinary, and personalised services. Within this framework, as well as in family counselling centres, midwives play a decisive role in promoting maternal and child health, prevention, and health education, while also reducing inequalities in access to care[7].

The implementation of the LOR model and Community Health Centres contributes to reducing inappropriate hospitalisations, improving continuity of care, and enhancing the healthcare system's responsiveness to population needs. An important consideration is the need to integrate community and hospital experiences through collaborative networks among professionals, ensuring continuity and fluidity of care pathways rather than fragmentation. Within this integrated context, the midwife assumes the role of case manager, acting as the primary professional reference for women throughout their life course and coordinating multidisciplinary care to address bio-psycho-social needs.

Scientific Evidence and Quantitative Outcomes

Recent literature provides robust empirical support for the midwifery-led care model in low-risk pregnancies. The updated Cochrane Review by Sandall et al.[3], which included 17 randomised trials and 18,533 women, found that midwife continuity of care models, compared with other models of care, likely increase spontaneous vaginal birth from 66% to 70% (RR 1.05; 95% CI 1.03–1.07; moderate-certainty evidence) and likely reduce caesarean section rates from 16% to 15% (RR 0.91; 95% CI 0.84–0.99; moderate-certainty evidence). Women receiving midwife con-

tinuity of care models also reported lower rates of instrumental birth and more positive birth experiences.

The meta-analysis by Sriram et al.[2], which pooled 44 studies for a total of 1,397,320 women, confirms and extends these findings: midwife-led care for low-risk pregnancies is associated with lower risks of unplanned caesarean section, instrumental vaginal delivery, labour augmentation, epidural/spinal analgesia, episiotomy, and active management of the third stage. Shorter hospital stays and lower rates of infection, manual placental removal, blood transfusion, and intensive care admission are also reported, without compromising neonatal outcomes.

Of public-health relevance is the impact of community-based midwifery continuity of care on socially disadvantaged populations, where it may substantially reduce preterm birth and contribute to narrowing perinatal inequalities[3,8].

Limitations, Conflicting Evidence, and Implementation Considerations

A balanced reading of the literature also requires consideration of less favourable evidence. The retrospective cohort study by Wernham et al.[1], conducted in New Zealand on 244,047 pregnancies, reported a higher frequency of selected adverse neonatal outcomes in the midwife-led care group compared with the medical-led group: 5-minute Apgar score <7 (OR 0.52; 95% CI 0.43–0.64 favouring the medical-led group), birth-related asphyxia (OR 0.45; 95% CI 0.32–0.62), and neonatal encephalopathy (OR 0.61; 95% CI 0.38–0.97).

These results should be interpreted with caution in light of important methodological and contextual limitations: the retrospective design, the risk of residual confounding, and the New Zealand maternity system, which is characterised by particularly extensive midwifery autonomy and referral patterns that differ from those in many European settings. The accompanying editorial cautions against generalising these findings, noting that pooled evidence supports the efficacy and safety of midwife-led care when integrated within systems with clear risk-stratification criteria and timely transfer protocols.

The key implication is the need for context-specific implementation, supported by:

- explicit and shared risk-stratification criteria for entry into and continuation within the LOR pathway;
- formal, timely transfer protocols when risk factors or complications emerge;
- structural integration with hospital care and with interdisciplinary teams (obstetric, anaesthetic, neonatal, psychological, social, other medical specialists);
- sustainable organisational models in terms of on-call arrangements and workload, with dedicated attention to the prevention of professional burnout;
- adequate financing and governance, with process and outcome indicators monitored over time.

The literature highlights that the effectiveness of the LOR model depends not only on the model itself, but on the organisational, professional, and cultural conditions in which it is implemented[3,9]. Inter-professional resistance, workforce shortages, heterogeneous training, and the absence of clear transfer pathways are among the main obstacles to its sustainability and replicability.

WHO Recommendations for Intrapartum Care

The recommendations issued by the World Health Organization (WHO) for a positive childbirth experience[5] and WHO Labour Care Guide User's Manual[10], provide the international reference for midwifery practice in intrapartum care in low-risk pregnancies. Table 1 summarises the key recommendations relevant to the LOR model.

Table 1. Summary of selected WHO recommendations (2018–2020) relevant to intrapartum care in low-risk pregnancies. Adapted from WHO recommendations[5,10].

Intrapartum practice	WHO 2018 - 2020 Recommendation (low-risk pregnancies)
Vaginal examination	Vaginal examination every 4 hours during the active phase is recommended, unless otherwise clinically indicated
Fetal monitoring	Intermittent auscultation of fetal heart rate is recommended; routine continuous CTG not recommended in low-risk labour
Partogram	Use of a partogram for labour surveillance is recommended (4-hour action line)
Mobility and position	Mobility and choice of birthing position recommended; upright positions in the second stage support physiology
Continuous support	Continuous one-to-one support during labour is recommended for all women
Episiotomy	Routine use is not recommended; only on selected clinical indication
Oxytocin augmentation	Routine augmentation to accelerate labour is not recommended in the absence of dystocia
Cord clamping	Delayed cord clamping (≥1 minute) recommended to improve neonatal outcomes
Skin-to-skin contact	Immediate, uninterrupted skin-to-skin contact between mother and newborn for at least the first hour after birth is recommended
Respectful maternity care	Respectful maternity care – which refers to care organized for and provided to all women in a manner that maintains their dignity, privacy and confidentiality, ensures freedom from harm and mistreatment, and enables informed choice and continuous support during labour and childbirth is recommended
Effective communication	Effective communication between maternity care providers and women in labour, using simple and culturally acceptable methods is recommended
Companionship	A companion of choice is recommended for all women throughout labour and childbirth
Continuity of care	Midwife-led continuity-of-care models, in which a known midwife or small group of midwives supports a woman throughout the antenatal, intrapartum and postnatal continuum, are recommended in settings with well-functioning midwifery programmes

The WHO recommendations for a positive childbirth experience[5], together with the WHO Labour Care Guide User's Manual[10], introduce a paradigmatic shift in maternity care, highlighting the value of a positive birth experience and providing recommendations not only on clinical and care-related aspects but also on the professional behaviours required.

Consistent application of these recommendations within the LOR model translates the principle of safeguarding physiology into concrete clinical practices, reducing unnecessary interventions and promoting a positive and respectful childbirth experience.

Midwifery Care During Labour with Epidural Analgesia

The midwife's role as case manager remains relevant even in non-physiological conditions, such as labour with epidural analgesia – one of the most effective techniques for pain relief and widely used in hospital settings[11]. Antenatal psychological variables, including anxiety, fear of childbirth, and maternal–fetal attachment, can significantly influence women's analgesic preferences[12].

International guidelines converge on the principle that, in the absence of medical contraindications, maternal request itself constitutes a sufficient indication for labour analgesia[13,14]. This principle underscores women's right to effective pain relief and requires healthcare organisations to ensure equitable access to labour analgesia across all maternity settings.

The widespread use of epidural analgesia has partially modified care dynamics, requiring an adaptation of the midwife's role, which nevertheless remains central in ensuring holistic care. Epidural analgesia must not reduce childbirth to a purely technical act: the midwife preserves the centrality of the woman, promotes early mother–infant contact, and supports postpartum physiology[5], ensuring personalised and respectful care.

Midwifery support begins in the antenatal period, through structured information about benefits, limitations, and potential side effects of epidural analgesia[14]. Antenatal discussion enables the woman to make an informed choice and to prepare emotionally, reducing anticipatory anxiety and improving overall satisfaction[15].

Continuous one-to-one support during labour is a well-established recommendation also for women receiving epidural analgesia: the presence of a trained caregiver reduces the use of additional pharmacological interventions, improves perinatal outcomes, and enhances women's reported experience[5,16]. During the procedure, midwives collaborate with anaesthesiologists within a multidisciplinary team, ensuring safety, postural assistance, and continuous monitoring of maternal and fetal well-being[17], and act as communicative mediators between the woman, the healthcare team, and the partner/caregiver, fostering trust.

The emotional impact of epidural analgesia depends largely on subjective and contextual variables – expectations, professional support, and cultural background. It is therefore essential to promote care models that integrate clinical aspects with emotional, physical, environmental, communicative, and relational support, ensuring one-to-one care and a positive, respectful, woman-centred birth experience for all women.

The Midwife of the Third Millennium and the New Paradigm in Birth Care

The role of the midwife has evolved significantly in recent decades. Once limited to childbirth assistance, it now encompasses a complex integration of clinical, relational, and organisational competencies. The modern midwife promotes key public-health pillars: enhancement of physiology, women's empowerment, continuity of care, and reduction of unnecessary medicalisation.

Contemporary midwifery-led care is embedded in a healthcare system oriented toward prevention and health promotion, requiring increased attention to women's rights and personalised care pathways. The midwife plays a pivotal role, providing emotional, informational, and clinical support.

As highlighted by the WHO[5], the transition toward midwifery-led care models involves moving from fragmented, risk-based systems to equitable, respectful, and person-centred care. In these models, midwives provide continuous care from conception through the first two years of life, supporting quality and safety[5].

Current healthcare systems still tend to interpret childbirth through a technocratic model characterised by urgency, control, and intervention. While this approach has improved safety, it has also led to excessive medicalisation, sometimes without clear clinical benefits, risking the loss of the human and experiential dimensions of childbirth. A new paradigm is therefore needed – one that places trust in physiological processes at its core, respects natural timing, and values the relationship between women and healthcare professionals. This paradigm is grounded in empathy, active listening, and continuity of care.

Within this framework, midwives are well positioned to promote the humanisation of childbirth. Their continuous presence has been associated with reduced invasive interventions, improved pain perception, shorter labour duration, and improved maternal and neonatal outcomes. Furthermore, fostering empowerment and informed choice strengthens women's autonomy and contributes to a culture of respectful maternity care.

The social dimension of midwifery is equally important. Beyond clinical care, midwives foster partnerships with women, promote community health, and support families in building networks of solidarity and mutual aid (community midwifery). They guide women through physical and emotional changes, helping them develop personalised strategies for pregnancy, childbirth, breastfeeding, and parenting. This paradigm shift is, therefore, not only clinical but also cultural and organisational: it requires a broader understanding of health that emphasises prevention, relationships, and respect for individual experiences.

Continuing Education, Professional Development, Research, and Innovation in Midwifery

The evolution of midwifery requires continuous professional development. Training should not be limited to technical and scientific knowledge but must also include relational, communicative, and ethical competencies, which are essential for person-centred care.

Multidisciplinary education enhances collaboration with other healthcare professionals, strengthens continuity of care, and supports innovative organisational models. Recognising midwives'

autonomy in clinical decision-making is crucial for modernising healthcare systems.

Continuous education tools should include clinical simulation, applied research, and mentoring programmes between senior and junior professionals. These approaches enhance practical skills, update methodologies, and strengthen soft skills and ethical awareness.

Scientific research is a cornerstone of midwifery advancement. Clinical, epidemiological, and organisational studies enable the development of evidence-based protocols, optimisation of resources, and improved safety for women and newborns. Midwives should actively participate in research both as critical consumers of scientific literature and as producers of new knowledge. Evidence-based practice promotes high standards of care and organisational innovation.

Artificial Intelligence and Technological Innovation in Midwifery Care

Emerging technologies, including artificial intelligence (AI), are beginning to find applications in obstetric and perinatal care. Among the most documented areas of development are decision-support systems for cardiotocography (AI-driven CTG), recently the subject of qualitative and clinical studies that assess their reliability and acceptance among midwives and perinatal specialists[18]; predictive algorithms for risk stratification of preterm birth, preeclampsia, and gestational diabetes; and telemedicine applications for community follow-up and perinatal education.

A recent systematic review[19] documents the rapid expansion of AI and machine-learning applications in obstetrics and midwifery, with particular attention to fetal monitoring, diagnostic imaging support, and prediction of adverse outcomes. These tools can support data-driven clinical decisions but cannot replace the human relationship, empathy, and support that characterise midwifery care. Innovation must therefore be integrated critically and ethically, taking into account the risk of excessive epistemic reliance, dataset bias, algorithmic transparency, and the protection of women's privacy[18].

A further area of research concerns the evaluation of the impact of health policies on maternal and child health. Longitudinal and comparative studies can identify best practices and guide resource allocation toward more equitable and efficient systems.

Conclusions

The midwife of the third millennium is a key figure in the future of maternal and child health. By integrating clinical, scientific, and relational competencies, midwives promote personalised, safe, and sustainable care pathways centred on physiology, continuity of care, and women's autonomy. Strengthening midwifery-led models of care should, therefore, be considered a strategic priority for improving maternal and neonatal outcomes and reducing health inequalities. Current evidence supports the effectiveness of continuity of care models for low-risk pregnancies, showing reduced unnecessary interventions and improved birth outcomes. At the same time, the safety and sustainability of these models depend on appropriate organisational conditions, including clear risk assessment, interdisciplinary collaboration, timely referral pathways, and support for professional well-being. Strengthening maternity services will require sustained investment in education, research, leadership, and innovation. The future of the LOR model depends not only

on clinical effectiveness, but also on the ability of healthcare systems to promote respectful, humanised, and woman-centred care that safeguards physiology, dignity, autonomy, and community well-being.

Declarations

Artificial Intelligence (AI) – Assisted Technology Statement

In preparing this manuscript, the authors used AI tools to support language editing and bibliographic organisation. The authors take full responsibility for the scientific content, interpretation of the evidence, and conclusions presented in the manuscript.

Authors' Contributions

Gabriella Gentile: conception and drafting of the manuscript; Anna Domenica Mignuoli: critical literature review; Angela Maccagnola: final revision and supervision. All authors read and approved the final version of the manuscript.

Conflict of Interest

The authors declare that they have no conflict of interest to disclose in relation to this work.

Data Availability Statement

Not applicable. No original datasets were generated or analysed in this study.

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References

1. Wernham E, Gurney J, Stanley J, Ellison-Loschmann L, Sarfati D. A Comparison of Midwife-Led and Medical-Led Models of Care and Their Relationship to Adverse Fetal and Neonatal Outcomes: A Retrospective Cohort Study in New Zealand. PLoS Med. 2016;13(9):e1002134.
2. Sriram S, Almutairi FM, Albadrani M. Midwife-Led Versus Obstetrician-Led Perinatal Care for Low-Risk Pregnancy: A Systematic Review and Meta-Analysis of 1.4 Million Pregnancies. J Clin Med. 2024;13(22):6629.
3. Sandall J, Fernandez Turienzo C, Devane D, et al. Midwife continuity of care models versus other

models of care for childbearing women. Cochrane Database Syst Rev. 2024;4(4):CD004667.

4. UNICEF. Early Childhood Development: the first 1000 days [Internet]. 2020 [cited 2026 May 22]. Available from: https://www.unicef.org/early-childhood-development/first-1000-days
5. World Health Organization (2018). WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: WHO. Available from: https://www.who.int/publications/i/item/9789241550215
6. Italian Ministry of Health. Guidelines for the autonomous management of low-risk pregnancies by midwives. Rome: Ministry of Health; 2017.
7. Italian Ministry of Health. Ministerial Decree 77/2022: models and standards for the development of community healthcare in the National Health Service. Rome: Ministry of Health; 2022.
8. Fernandez Turienzo C, Bick D, Briley AL, et al. Midwifery continuity of care versus standard maternity care for women at increased risk of preterm birth: A hybrid implementation-effectiveness, randomised controlled pilot trial in the UK. PLoS Med. 2020;17(10):e1003350.
9. Renfrew MJ, McFadden A, Bastos MH, et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. Lancet. 2014;384(9948):1129-1145.
10. World Health Organization (2020). WHO Labour Care Guide User's Manual. Geneva: WHO. Available from: https://www.who.int/health-topics/maternal-health
11. Anim-Somuah M, Smyth RM, Cyna AM, Cuthbert A. Epidural versus non-epidural or no analgesia for pain management in labour. Cochrane Database Syst Rev. 2018;5(5):CD000331.
12. Fumić Dunkić L, Vuletić G. Pain and anxiety experience in the choice of epidural analgesia in delivery. Acta Clin Croat. 2022;60(3):399-405.
13. American College of Obstetricians and Gynecologists' Committee on Practice Bulletins–Obstetrics. ACOG Practice Bulletin No. 209: Obstetric Analgesia and Anesthesia. Obstet Gynecol. 2019;133(3):e208-e225.
14. NICE (2023). Intrapartum care: care of healthy women and their babies during childbirth. NICE Guideline NG235. National Institute for Health and Care Excellence, London. Available from: https://www.nice.org.uk/guidance/ng235
15. Cherel Q, Burey J, Rousset J, et al. Epidural analgesia information sessions provided by anesthetic nurses: impact on satisfaction and anxiety of parturient women a prospective sequential study. BMC Anesthesiol. 2022;22(1):105.
16. Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Database Syst Rev. 2017;7(7):CD003766.
17. Chalmers B, Hodnett ED. Effects of epidural analgesia on labor progress and maternal–infant outcomes. J Perinat Educ. 2019;28(3):156-165.
18. Dlugatch R, Georgieva A, Kerasidou A. AI-driven decision support systems and epistemic reliance: a qualitative study on obstetricians' and midwives' perspectives on integrating AI-driven CTG into clinical decision making. BMC Med Ethics. 2024;25(1):6.
19. Giaxi P, Vivilaki V, Sarella A, Harizopoulou V, Gourounti K. Artificial Intelligence and Machine Learning: An Updated Systematic Review of Their Role in Obstetrics and Midwifery. Cureus. 2025;17(3):e80394.

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The Role of Interprofessional Education in Midwifery Training: a Narrative Review

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Running Title: Interprofessional Education in Midwifery Training

Abstract

Background: Interprofessional education (IPE) is increasingly recognised as essential for encouraging collaborative care practices among future healthcare providers. By fostering teamwork among different healthcare disciplines, IPE aims to improve patient care quality. However, while there is growing evidence of IPE's effectiveness in general healthcare education, its impact specifically on midwifery students remains underexplored. This study investigates the effectiveness of IPE in preparing midwifery students to provide enhanced maternity care through improved interprofessional collaboration as professionals.

Methods: Using the PICO framework, the research question was formulated, and a structured literature search was conducted in PubMed and the Cochrane Library for studies published up to March 2026. Twelve relevant studies were included in the review, which showed positive outcomes of IPE interventions for the various healthcare disciplines, including midwifery.

Results: The analysis revealed generally positive outcomes from IPE interventions. Participants across different healthcare disciplines, including midwifery, reported improved interprofessional competencies and positive experiences with IPE. However, a few studies also highlighted some critical issues, such as scepticism among participants and possible short-term effects of IPE, demonstrating the importance of ongoing integration of IPE into healthcare education.

Conclusions: Despite the overall positive outcomes of IPE interventions, the lack of specific data on midwifery students is evident. This gap in the literature underscores the need for future research to explore the unique effects of IPE for midwifery students. Continued investigation is crucial to ensure that IPE is effectively tailored to meet the needs of midwifery education, thereby enhancing collaborative maternity care practices in the long term.

Keywords: *Interprofessional Education; Midwifery; Midwifery Students; Professional Role; Professional Responsibility.*

Background

Interprofessional education (IPE) is an approach to education that takes students from different healthcare professions and has them learn together to strengthen collaborative care practices to improve patient outcomes. The World Health Organization (WHO) defines IPE as when "students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes"[1]. One of IPE's aims is to break down professional barriers and encourage teamwork and communication among future healthcare providers inclu-

ding midwives, nurses, physicians, and other allied health professionals[2]. The importance of interprofessional collaboration in the improvement of the quality of maternity care and maternity care outcomes has been noted by numerous national reports[3,4]. This emphasis is further reinforced at the international policy level, as the International Confederation of Midwives (ICM), in collaboration with the International Federation of Gynecology and Obstetrics (FIGO), has recently highlighted interprofessional collaboration as a key strategy for strengthening sexual and reproductive healthcare systems, including through improved joint working and shared learning across professional groups, with a joint statement currently forthcoming[5].

Midwifery and maternity care are often multidisciplinary practices, with midwives, obstetricians, paediatricians, nurses, and others working side-by-side, so for midwifery students, IPE can be of particular interest and use. Effective IPE interventions during midwifery education can help the midwifery student to integrate didactic material with practical skills, while at the same time promoting an understanding of roles and responsibilities across professions[6]. IPE implemented at the undergraduate level has been found to be helpful in developing interprofessional skills such as effective teamwork, communication, and leadership, all of which contribute to enhanced patient safety[7]. The objective of this review is to investigate the effectiveness of IPE for midwifery students by examining the currently available literature. This review contributes to the existing literature on IPE and midwifery by examining the current evidence and identifying directions for future research relevant to collaborative maternity care.

Methods

Study design

This study was designed as a narrative review with structured search elements to provide a broad interpretive synthesis of the literature on interprofessional education in relation to midwifery students. A narrative approach was considered more appropriate than a systematic review because of the heterogeneity of study designs, educational contexts, intervention formats, and reported outcomes. Although structured search procedures were used to enhance transparency in study identification and selection, no formal systematic review reporting framework was applied.

Research question

The research question was formulated using the PICO framework as follows:

Population (P): healthcare students, including midwifery students

Intervention (I): interprofessional education (IPE)

Comparison (C): not applicable

Outcome (O): interprofessional competencies, including teamwork, communication, and role understanding.

Search strategy

A literature search was conducted in PubMed and the Cochrane Library in March 2026. For PubMed, the following search strategy was used: (((“student midwi*” OR “students, midwi*”) OR (“midwifery” [MeSH] OR “midwi*” OR “nurse midwi*” OR “obstetrics”)) AND (“Interprofessional Education” [MeSH] OR “education, interprofessional” OR “interprofessional” OR “patient care team*” OR “intersectoral collaboration” OR “multidisciplinary team*” OR “care team*,

multidisciplinary")) AND ("professional role" [MeSH] OR "professional roles" OR "role*" OR "professional responsibilit*" OR responsibilit*). The search strategy was adapted as appropriate for the Cochrane Library. No language restrictions were applied during database searching. All studies identified as eligible for inclusion were published in English. No date restrictions were applied. Reference lists of included studies were also manually screened to identify additional relevant articles.

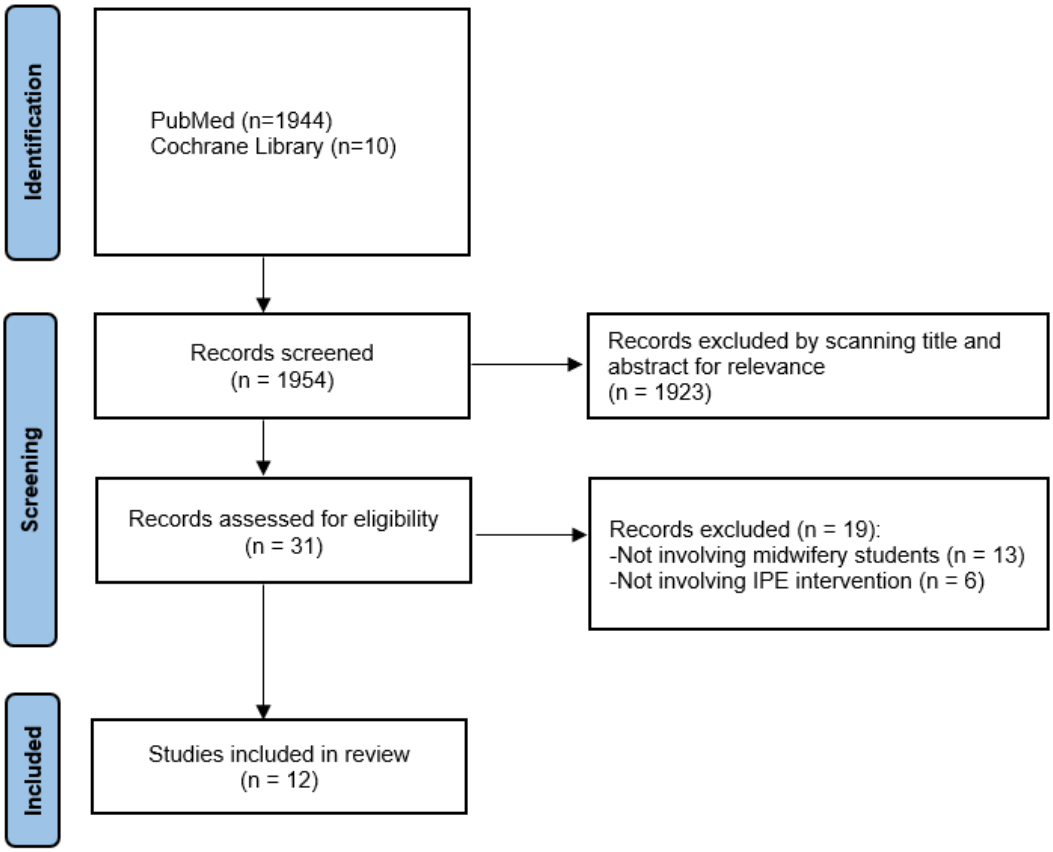
Eligibility criteria

Studies were included if they examined interprofessional learning involving midwifery students or multidisciplinary student groups including midwifery. Quantitative, qualitative, and mixed-methods studies were included. Articles not relevant to educational settings or not addressing interprofessional competencies were excluded.

Study selection

Titles and abstracts were screened, followed by a full-text review of eligible articles. Study selection was conducted by the authors, with disagreements resolved through discussion. A total of 1,954 records were identified through database searching and screened by title and abstract, of which 1,923 were excluded. Thirty-one full-text articles were assessed for eligibility, and 19 were excluded due to lack of relevance to midwifery education or failure to address interprofessional competencies. Twelve studies met the inclusion criteria and were included in the final analysis. The study selection process is illustrated in Figure 1, which provides a transparent overview of article identification, screening, and final inclusion.

Figure 1. Flow diagram illustrating the study selection process.



Data extraction and synthesis

Relevant data were extracted from each study, including study design, sample characteristics, context, data collection methods, and main findings. Given the heterogeneity of study designs and outcomes, findings were synthesised using a narrative approach.

Results

Characteristics of included studies

Of the 12 articles examined[8-19], seven studies adopted a mixed methods study design[8,11,13–15,17,19], four used a quasi-experimental design[10,12,16,18] and one employed the Q-methodology[9].

In terms of data collection, several studies used self-assessment questionnaires, either alone or in combination with pre- and post-intervention measures[8,10,12,14,16,18], while others incorporated qualitative methods such as focus groups or open-ended responses to capture students' experiences[13,15,17,19]. Standardised tools to assess interprofessional competencies and attitudes were used in some studies[11,18], while others relied on study-specific instruments[9,13].

Participants typically consisted of multidisciplinary cohorts of healthcare students, including midwifery, nursing, and medical students, often alongside other allied health professions[8-19]. Across the studies, IPE interventions varied considerably in structure and duration, ranging from single-session workshops and short simulation exercises to longitudinal or curriculum-integrated programs[8-19]. The main characteristics of the included studies are summarised in Table 1, including study design, educational context, participant characteristics, intervention type, and main findings.

Impact of IPE on interprofessional competencies

The included studies reported improvements in collaborative skills among healthcare students, including midwifery students[8-19]. Several interprofessional competency domains showed improvements, including teamwork[9,10,11,13], roles and responsibility clarification[11,15,17] and communication[11,13,16]. IPE participation was associated with improvements in interprofessional scores[8] and in additional competencies relevant to effective interprofessional collaboration such as breaking down prejudices[13], social competence[8], and self-confidence[16].

Positive changes in attitudes toward interprofessional collaboration were also reported across different educational contexts, including community-based learning, simulation-based interventions, and virtual case-based activities[11,12,16,19]. In addition, a recent quasi-experimental study involving midwifery, nursing, and medical students reported significant improvements in competence, autonomy, and perceptions of interprofessional collaboration following an IPE intervention[18].

However, not all outcomes were uniformly positive. Some studies reported participant scepticism regarding the educational value of IPE or suggested that improvements might not extend to all dimensions of interprofessional identity[8,9].

Midwifery-specific findings

Findings related specifically to IPE and midwifery students were limited, as the majority of the included studies reported their data without subcategorising participants by health profession, instead presenting aggregated results across multidisciplinary student groups. Only a limited

number of studies reported findings specific to midwifery students[14,18]. Where profession-specific data were available, midwifery students generally demonstrated positive responses to IPE interventions, including improvements in collaborative attitudes and perceived need for cooperation[14,18]. However, some evidence suggested that attitudinal changes may vary across professional groups, with midwifery and medical students demonstrating lower levels of change in certain attitudinal domains in one study[14].

Despite the lack of specific findings related to midwifery students, the broader evidence suggests that health professions students, including midwifery students, experienced improvements in collaborative competencies and attitudes across a range of educational formats[10,11,18]. More recent evidence continues to support positive outcomes, although findings are still predominantly reported at an aggregate rather than profession-specific level[18].

Critical issues and limitations of IPE

Although most studies reported positive outcomes, certain limitations and challenges were reported. While most students participating in IPE interventions expressed positive feedback, some participants were sceptical or disagreed as to the benefits of IPE[9]. In addition, some evidence suggests that despite the reported positive effects of IPE on students' perceptions of themselves and others, it does not necessarily affect a student's interprofessional identity[8]. The durability of IPE effects also remains uncertain. While some evidence suggests that positive perceptions may decline over time following isolated interventions8, other studies have reported sustained positive effects at follow-up[16].

Discussion

The findings from all analysed studies included in this review suggest a generally positive effect for IPE's integration into healthcare education[8-19]. IPE studies that incorporate midwifery students have been reported to improve the interprofessional skills needed for effective care of a patient[8–19]. These findings align with those of Wakefield et al.[10], who demonstrated through a series of interdisciplinary teaching sessions notable positive feedback from midwifery students in the areas of working as a healthcare team, understanding different perspectives of patient care and learning one's role in an interdisciplinary group, which are considered important for the healthy functioning of a multi-disciplinary medical team. In this context, the growing emphasis on interprofessional collaboration within global maternity care policy[5] further underscores that the competencies gained through IPE are increasingly viewed not merely as educational outcomes, but as essential components of effective health system functioning.

While the results highlight that IPE has been associated with improvements in student scores across all interprofessional skills areas, these findings suggest that participating in IPE may improve students' perceptions of the usefulness of IPE in their preparation to work as professionals in the medical fields. This suggests that a future curriculum incorporating more IPE into medical health professionals' education may be well received by students. Recent quasi-experimental evidence further supports these findings, demonstrating significant improvements in competence, autonomy, and collaborative attitudes following structured IPE interventions invol-

ving midwifery, nursing, and medical students[18]. These findings are also consistent with previous reports suggesting that sustained interprofessional educational experiences may be mutually beneficial for midwifery and medical students, particularly in improving understanding of differing professional roles and values[20,21].

Despite the positive outcomes in all studies, certain negative feedback was noted, in particular that of some students who expressed scepticism that IPE would be helpful in their education[7,9]. In addition, some evidence suggests that poorly designed IPE interventions may inadvertently reinforce negative professional stereotypes[22]. This suggests a need for caution during the planning and intervention phases of IPE.

Another issue reported by IPE participants that should be considered is the finding of a relatively short-term effect of IPE interventions, which was demonstrated by the waning of positive feedback several months after an IPE event[8]. Although this data set was not looked at in every study, it does suggest that ongoing IPE should be considered when designing curricula, as opposed to stand-alone events, so that the positive effects of IPE continue to inform the students throughout their years of health sciences education. Some evidence suggests that challenges associated with interprofessional learning between midwifery and medical trainees may be easier to address over time, particularly when differences in educational background and training levels are appropriately considered in intervention design[23].

From a systems perspective, this need for continuity in interprofessional learning reflects broader calls from organisations such as the ICM and the FIGO for sustained and integrated approaches to collaboration across professional groups, rather than isolated or episodic initiatives[5]. However, other evidence has reported sustained improvements in attitudes toward interprofessional education over longer follow-up periods[24].

Student participants from every study expressed the importance of interprofessional teamwork, interprofessional education, and social competencies for their future careers, but it should be noted that nearly all study results were generalised across the different student groups, instead of being categorised based on the individual health profession. Only a limited number of studies reported profession-specific findings, with few studies presenting results separately by health profession[10,14]. In addition, recent educational interventions have highlighted how simulation-based IPE, particularly when incorporating ethical case discussions, can enhance students' awareness of ethical dimensions and further support the development of interprofessional attitudes and identity[19]. However, the lack of data specific to midwifery and IPE interventions highlights a gap in the body of research and limits the strength of conclusions regarding IPE integration within midwifery education.

Future research with the specific aim of reporting data on midwifery students' reactions to IPE is needed to move from the well-founded and studied concept that IPE is vital for preparing medical and health profession students to the specific positive effects of IPE on midwifery students. This finding is echoed by Abraha et al.[25] in their research, which emphasises the need for further research to improve IPE initiatives for midwifery students.

Limitations

This review has several limitations and potential sources of bias that should be considered when interpreting the findings. First, the narrative design, while appropriate for providing a broad interpretive overview of a heterogeneous body of literature, does not include a formal methodological quality assessment or risk-of-bias appraisal of the included studies. Second, the search was limited to two databases (PubMed and the Cochrane Library), which may have resulted in the omission of relevant studies indexed in other databases. Third, the relatively small number of included studies and the substantial heterogeneity in study designs, educational settings, intervention formats, and outcome measures limit the comparability and generalisability of the findings. In addition, many of the reported outcomes were based on self-reported perceptions and attitudes rather than objective measures of behavioural or clinical change. Finally, the majority of studies reported aggregated results across multidisciplinary student groups, with limited profession-specific data relating to midwifery students, which restricts the ability to draw conclusions about the unique impact of interprofessional education within midwifery training.

Conclusions

This review highlights the potential role of IPE in enhancing the skills necessary for collaborative practice among midwifery students and future maternity care professionals. The findings suggest that IPE may improve essential competencies such as teamwork, communication skills and understanding of one's role while working on a multi-professional care team, all of which may contribute to a more integrated maternity care model and potentially better patient outcomes. Integrating IPE more consistently into midwifery education may support improved collaboration across healthcare teams and contribute to the enhancement of professional practice. However, conclusions regarding the specific impact of IPE within midwifery education should remain cautious, given the limited profession-specific evidence and the predominance of self-reported outcome measures. Future research should focus on the long-term effects of IPE, including positive and potential negative impacts, and should incorporate more profession-specific and objective outcome measures. A specific emphasis on IPE in relation to midwifery students is needed to address the current gap in the literature and to better inform the development of interventions tailored to this population.

Declarations

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Artificial Intelligence (AI) – Assisted Technology Statement

No artificial intelligence (AI) tools or generative AI technologies were used in the preparation of this manuscript.

Authors' Contributions

All authors: 1) have made substantial contributions to the conception and design of the study, as well as to data collection, analysis, and interpretation; 2) have participated in drafting and revising

the manuscript; 3) have read and approved the final version of the manuscript submitted.

Conflict of Interest

The authors declare that they have no conflict of interest to disclose.

Data Availability Statement

Data sharing is not applicable to this article as no datasets were generated or analysed.

Ethics Approval

Not applicable.

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References

1. World Health Organization. Framework for action on interprofessional education and collaborative practice. Geneva: WHO; 2010.
2. Barr H, Koppel I, Reeves S, Hammick M, Freeth D. Effective Interprofessional Education: Argument, Assumption, and Evidence. Oxford: Blackwell Publishing Ltd; 2005.
3. Findings, conclusions and essential actions: From the independent review of maternity services at the Shrewsbury and Telford Hospital NHS Trust. 2022. Available from: https://www.ockendenmaternityreview.org.uk/wp-content/uploads/2022/03/FINAL_INDEPENDENT_MATERNITY_REVIEW_OF_MATERNITY_SERVICES_REPORT.pdf. Accessed April 2026.
4. The National Maternity Review. Better births: improving outcomes of maternity services in England: a five year forward view for maternity care. [2016]. Available from: https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf. Accessed April 2026.
5. International Confederation of Midwives. ICM and FIGO commit to interprofessional collaboration. International Confederation of Midwives. 2025. Available from: https://internationalmidwives.org/icm-and-figo-commit-to-interprofessional-collaboration/. Accessed April 2026.
6. Thistlethwaite J. Interprofessional education: a review of context, learning and the research agenda. Med Educ. 2012;46(1):58-70. doi:10.1111/j.1365-2923.2011.04143.x.
7. Kumar A, Ameh C. Start here: principles of effective undergraduate training. Best Pract Res Clin Obstet Gynaecol. 2022;80:114-125. doi:10.1016/j.bpobgyn.2021.11.010.
8. Bostedt D, Dogan EH, Benker SC, Rasmus MA, Eisner E, Simon NL, et al. Interprofessional socialization of first-year medical and midwifery students: effects of an ultra-brief anatomy training. BMC Med Educ. 2024;24(1):464. doi:10.1186/s12909-024-05451-w.
9. Mackinnon C, Akhtar-Danesh N, Palombella A, Wainman B. Using Q-methodology to determine students' perceptions of interprofessional anatomy education. Anat Sci Educ. 2022;15(5):877-885. doi:10.1002/ase.2109.
10. Wakefield A, Furber C, Boggis C, Sutton A, Cooke S. Promoting interdisciplinarity through educational initiative: a qualitative evaluation. Nurse Educ Pract. 2003;3(4):195-203. doi:10.1016/S1471-5953(02)00119-1.

11. Wong E, Leslie JJ, Soon JA, Norman WV. Measuring interprofessional competencies and attitudes among health professional students creating family planning virtual patient cases. BMC Med Educ. 2016;16(1):273. doi:10.1186/s12909-016-0797-8.
12. Keshmiri F, Barghi TS. Interprofessional education in a community-based setting: An opportunity for interprofessional learning and collaboration. J Educ Health Promot. 2021;10:298. doi:10.4103/jehp.jehp_1015_20.
13. Netherwood M, Derham R. Interprofessional education: merging nursing, midwifery and CAM. Br J Nurs. 2014;23(13):740-743. doi:10.12968/bjon.2014.23.13.740.
14. Selvakumaran K, Selvakumaran K, Norman G, Palombella A, Rockarts J, Wainman B. Assessment of attitudes and perceptions of health care students in an inter-professional cadaveric dissection elective. FASEB J. 2019;33(1_supplement):328.2. doi:10.1096/fasebj.2019.33.1_supplement.328.2.
15. Feltham C, Foster J, Davidson T, Ralph S. Student midwives and paramedic students' experiences of shared learning in pre-hospital childbirth. Nurse Educ Today. 2016;41:73-78. doi:10.1016/j.nedt.2016.03.020.
16. McLelland G, Perera C, Morphet J, McKenna L, Hall H, Williams B, et al. Interprofessional simulation of birth in a non-maternity setting for pre-professional students. Nurse Educ Today. 2017;58:25-31. doi:10.1016/j.nedt.2017.07.016.
17. Lee T, Yoon SW, Fernando S, Willey S, Kumar A. Blended (online and in-person) Women's Health Interprofessional Learning by Simulation (WHIPLS) for medical and midwifery students. Aust N Z J Obstet Gynaecol. 2022;62(4):596-604. doi:10.1111/ajo.13531.
18. Vermeulen J, Buyl R, Hubloue I, Pauwels S, Diltoer M, Stas L, et al. A quasi-experimental study on the impact of interprofessional education on collaborative attitudes among midwifery, nursing, and medicine students in Brussels, Belgium. Eur J Midwifery. 2025;9:31. doi:10.18332/ejm/204273.
19. Vogel C, Schildmann J, Sommerlatte S, Schmidt E. "Well advised" - Simulation of an ethical case consultation with students of evidence-based nursing, midwifery, and human medicine as part of an interprofessional education course. GMS J Med Educ. 2026;43(3):Doc31. doi:10.3205/zma001825.
20. Furber C, Hickie J, Lee K, McLoughlin A, Boggis C, Sutton A, et al. Interprofessional education in a midwifery curriculum: the learning through the exploration of the professional task project (LEAPT). Midwifery. 2004;20(4):358-366. doi:10.1016/j.midw.2004.04.001.
21. Kaplan R, Shaw-Battista J, Stotland NE. Incorporating nurse-midwifery students into graduate medical education: lessons learned in interprofessional education. J Midwifery Womens Health. 2015;60(6):718-726. doi:10.1111/jmwh.12315.
22. Reid AM, Fielden SA, Holt J, MacLean J, Quinton ND. Learning from interprofessional education: A cautionary tale. Nurse Educ Today. 2018;69:128-133. doi:10.1016/j.nedt.2018.07.004.
23. Avery MD, Jennings JC, Germano E, Andrighetti T, Autry AM, Dau KQ, et al. Interprofessional Education Between Midwifery Students and Obstetrics and Gynecology Residents: An American College of Nurse-Midwives and American College of Obstetricians and Gynecologists Collaboration. J Midwifery Womens Health. 2020;65(2):257–264. doi:10.1111/jmwh.13057.
24. Beck Dallaghan GL, Hultquist TB, Nickol D, Collier D, Geske J. Attitudes toward interprofessional education improve over time. J Interprof Educ Pract. 2018;13:24-26. doi:10.1016/j.xjep.2018.08.007.
25. Abraha TA, W/Tensay KT, Gebre MB, et al. Opportunities and challenges in clinical learning of midwifery students in public Universities of Tigray Region, Ethiopia, 2020: a qualitative study. BMC Med Educ. 2023;23:801. doi:10.1186/s12909-023-04765-5.

Table 1. Characteristics of the included studies

Author(s) (year)	Study Design	Context	Sample	Study Scope	Data Collection Instruments	Results
Bostedt et al., 2024 [8]	Mixed methods	University of Münster, Germany	42 students: 24 students of midwifery sciences and 18 students of medicine	Determine whether an ultra-brief IP training in anatomy (a four- hour block) may be sufficient to promote key elements of inter- professionalism	Self-assessment questionnaires	Improvement in IP scores, IP identity unaffected, both sets of students considered IP, teamwork and social competencies to be of importance for their future careers
Mackinnon et al., 2022 [9]	Q - methodology	IPE Intervention in Anatomy at McMaster University, Canada	26 students in the course from the medical, nursing, midwifery, physician assistant, occupational therapy, and physiotherapy programs	Determine which aspects of the IPE Intervention in Anatomy at McMaster University contributed to the development of healthcare student's interprofessional skills	Q-sample of 43 statements about the IPE dissection course derived from previous qualitative studies of the program	3 groups of students emerged: IPE Enthusiasts, Practical IPE Advocates, Skeptical IPE Anatomists
Wakefield et al., 2003 [10]	Quasi - experimental study	University of Mancheste r, England	10-second year nursing, 17- third year midwifery and 13- fourth year medical students	Develop multi- professional education, provide further opportunities to explore problem- oriented professional task-based earning, foster collaborative working and learning	Pre- and post-study questionnaires	IPE has been described as an important component of midwifery, nursing and medical education
Wong et al., 2016 [11]	Mixed methods	University of British Columbia, Canada	26 undergraduate students of medicine, pharmacy, nursing, midwifery, dentistry, counselling, psychology and computer science	Evaluate the changes in perception towards IP collaboration, before and after the project	Surveys combining the CanMEDS and CIHC framework s and the Memorial University IPA questionnaire	General improvement in the skills necessary for effective IP collaboration, especially observed within the areas of IP communication, team functioning, and role clarification
Keshmiri and Barghi, 2021 [12]	Quasi-experimen tal study	Shahid Sadoughi University of Medical Sciences Yaz, Iran	122 students of medicine, pharmacy, nursing, midwifery, public health, and nutrition	Assess the effect of IP community -based education on attitudes and performance of IP collaboration	Self-assessment questionnaires	IP education remarkably improves attitudes toward teamwork, readiness for IP learning, and IP collaboration

Author(s) (year)	Study Design	Context	Sample	Study Scope	Data Collection Instruments	Results
Netherwood and Derham, 2014 [13]	Mixed methods	University setting (not specified), United Kingdom	Third-year students enrolled in nursing, midwifery, homeopathy and complementary therapies degree courses	Determine the value of IPE and ascertain what each group could learn from the other	Focus- group discussions	Six themes emerged: interaction; breaking down prejudices; knowledge of self; knowledge of others; common aims; and organizational limitations. Common aims allow students to recognize the benefits of integrated care
Selvakumaran et al., 2019 [14]	Mixed methods	McMaster University, Canada	Eight cohorts of 28–35 first year students in medicine, midwifery, nursing, physician's assistant, physiotherapy, and occupational therapy programs, over eight years	Assess the attitudes and perceptions of healthcare students towards inter-professional (IP) learning, at the entire cohort and at the professional group level	Pre- and post-study self-assessment scales	All groups saw improvements in numerous categories, midwifery students saw marked improvement in “perceived need for cooperation”, and were resistant to changes of attitudes across 5-7 categories
Feltham et al., 2016 [15]	Mixed methods	University of Cumbria, Carlisle, England	Twenty-five midwifery students and thirty-one paramedic students	Explore the experiences of midwifery and paramedic students with IPE	Focus group sessions	4 main themes were identified, benefits of IPE in the areas of professional practice, professional governing bodies, professional codes and scope of practice were seen
McLelland et al., 2017 [16]	Quasi-experimental study	Unnamed university in Victoria, Australia	10 paramedics, 10 nursing, and four midwifery students	Determine effect of an IPE simulated birth scenario on self-efficacy scores and clinical knowledge and assess students' satisfaction	Satisfaction with simulation survey, serial surveys of clinical knowledge and self-efficacy	Self-efficacy and confidence significantly improved at 1 month and 4 months, clinical knowledge significantly increased in only the nursing group, students’ satisfaction high
Lee et al., 2022 [17]	Mixed methods	Monash University Melbourne, Australia	98 medical students and 39 midwifery students	Evaluate the IPE simulation teaching intervention and explore how it contributes to learning	Post workshop surveys	Benefits of IPE across 5 themes emerged including 'low- pressure simulation environments’ and 'peer- assisted learning’

Author(s) (year)	Study Design	Context	Sample	Study Scope	Data Collection Instruments	Results
Vermeulen et al., 2025 [18]	Quasi-experimental study	University-based IPE simulation (Belgium)	269 students (midwifery, nursing, medicine)	Evaluation of IPE impact on interprofessional collaboration and attitudes	Interprofessional Education Perception Scale (IEPS); open-ended question	Significant improvements in competence, autonomy, and perception of collaboration ($p<0.001$); positive attitudes consistent across groups; supportive qualitative feedback
Vogel et al., 2026 [19]	Mixed methods	Simulation-based ethical case discussions in interprofessional setting (Germany)	96 healthcare students (midwifery, nursing, medicine)	Exploration of interprofessional collaboration and ethical awareness	Questionnaires and qualitative feedback	Positive changes in attitudes toward interprofessional collaboration; increased awareness of ethical dimensions; qualitative findings highlighted value of experiential and interprofessional learning

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Italian Translation and Cultural Adaptation of the Prenatal Breastfeeding Self-Efficacy Scale

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Abstract

Background: Maternal self-efficacy is one of the main predictors of breastfeeding continuation during the first six months. The Prenatal Breastfeeding Self-Efficacy Scale (PBSES) is a validated tool to measure pregnant women's breastfeeding confidence, yet it lacked an Italian version at the time of assessment. This study aimed to translate and culturally adapt the PBSES into Italian, providing the basis for future psychometric validation and its potential use in identifying women at risk of early discontinuation of exclusive breastfeeding.

Methods: The PBSES instrument followed the World Health Organization (WHO) translation guidelines, which included forward translation, expert panel review, back translation and pre-testing with cognitive interviews. Sixty pregnant women joined the study through online recruitment to evaluate both understanding and cultural appropriateness.

Results: 10 out 20 items of the PBSES needed minor modifications for cultural adaptation, which included simplification of terms and the clarification of ambiguous concepts. The final Italian version demonstrated high comprehension and conceptual equivalence with the original scale.

Conclusions: The final version of the PBSES developed in this study provides a foundational instrument that, following psychometric validation in the Italian population, could serve as an evidence-based tool for healthcare professionals to identify women at high risk of premature breastfeeding cessation during antenatal care.

Keywords: *Maternal self-efficacy; Breastfeeding; Prenatal care.*

Introduction

Breastfeeding is well-known as the best practice for feeding a newborn. As strongly recommended by the World Health Organization (WHO)[1] and United Nations International Children's Emergency Fund (UNICEF)[2], infants should be exclusively breastfed for the first six months following birth; beyond that period, breastfeeding can continue if the mother and child desire, in combination with age-appropriate complementary foods.

Breast milk provides all the essential nutrients necessary to ensure healthy growth for infants. It offers short-term benefits, such as protection against child infections and malocclusion, and long-term benefits, including increased intelligence, as well as likely reductions in overweight and diabetes[3]. Breastfeeding offers important health benefits for mothers, such as lowering the likelihood of developing breast and ovarian cancers and reducing the risk of type 2 diabetes. Moreover, shorter durations of breastfeeding have been linked to an increased risk of postpartum depression[4].

Globally, exclusive breastfeeding within the first six months of life is currently maintained by 48% of infants[2]; consequently, the majority of the paediatric cohort is deprived of full protective factors during early development. Epidemiological data from the 2023 report confirms a shortfall in meeting the WHO 2025 target[2], which aimed for a minimum threshold of 50% in alignment with the six maternal and infant nutrition goals outlined by the World Health Assembly in 2012[5]. In Italy, while the national average during the first three months is 46.7%, the epidemiological picture is highly fragmented by geographical disparities[6]. By the fourth and fifth months of life, there is a pronounced reduction in adherence, with interregional rates ranging from 13.5% in Sicily to 43.2% in Friuli Venezia Giulia, compared to a rate of 32% reported in Lombardy[6].

Increasing the rate of exclusive breastfeeding is a mission. To achieve this goal, numerous studies over the past decades have investigated which factors are related to the decision of a mother to early breastfeeding drop out. One recurring factor has been shown to influence the duration of breastfeeding: self-efficacy[7].

Self-efficacy, as defined in Bandura's cognitive theory, refers to an individual's confidence in their ability to manage their actions and influence life circumstances[8]. Bandura's theory was first applied to breastfeeding mothers by Dennis and Faux[9], who developed the Breastfeeding Self-Efficacy Scale, an instrument used during the postpartum period to assess a mother's confidence in her ability to successfully breastfeed. Since its first use in 1999, during the last decades, the instrument has become widely used in many contexts, from San Juan to Adelaide[10,11].

Two systematic reviews conducted in 2023 and 2024 demonstrated that self-efficacy-based instruments are valuable for clinical and research purposes[12,13]. The breastfeeding self-efficacy of a woman can identify women at elevated risk of discontinuation of the practice, who are most likely to interrupt breastfeeding before six months.

Many versions of the instrument have been developed over the years, in particular a specific form designed for pregnant women: the Prenatal Breastfeeding Self-Efficacy Scale (PBSES). In 2006, Wells et al[14] developed this tool based on the concept of self-efficacy. The PBSES consists of 20 items, each scored on a Likert scale ranging from 1 (not at all confident) to 5 (completely confident). The items are grouped into four thematic factors, except for two remaining independents. The thematic areas are:

- Confidence in the ability to respond to the request to breastfeed
- Confidence in gathering information on how to breastfeed
- Confidence in the ability to breastfeed with other people around and a sense of embarrassment
- Confidence in dealing with social pressure related to breastfeeding

The total score ranges from a minimum of 20 to a maximum of 100, with higher scores indicating greater perceived self-efficacy. In particular, the prenatal version refers to pregnant women, because evidence suggests that mothers decide how they will breastfeed their babies before giving birth[15]. Wells et al[14] also highlighted that understanding a woman's level of self-efficacy, regarding future breastfeeding during pregnancy, can give health professionals more time to support mothers who may be vulnerable or insecure about exclusive breastfeeding.

The instrument has been translated and validated in various contexts. A Turkish version[16] confirmed the validity and reliability of the PBSES, and other translated versions have also been assessed with a Taiwanese and Spanish sample[17,18], demonstrating a good predictive role.

Given the advantages of administering this scale during pregnancy, its simplicity, and ease of application, the PBSES has been identified as a suitable instrument for recognizing women at risk of early interrupting exclusive breastfeeding. Considering that an Italian version is not yet available, we aimed at translating the original PBSES[14] into the Italian language and to culturally adapt the instrument.

Materials and Methods

The English version of the scale was translated into Italian and culturally adapted to create different linguistic versions of the original PBSES. To achieve this goal, the steps recommended by the WHO were followed[19]. This well-established method includes forward translation, a discussion with a panel of experts, back-translation, pre-testing, and cognitive interviews to obtain a definitive version of the instrument. The translation process, developed by the WHO, ensures the scale's intercultural and conceptual equivalence.

Ethical approval for the study was obtained from the Ethics Review Committee of the University of Milano-Bicocca (Prot. n. 0008867/2023, UOR 003297; Milan, Italy). All participants provided informed consent prior to participation. Formal permission to translate and culturally adapt the PBSES into Italian was obtained from the copyright holder.

Forward translation

A midwifery student, who was proficient in the English language and culture but was a native speaker of Italian, produced an initial version of the scale. The translation focused on the intercultural adaptation of words and phrases rather than a literal translation, using the most common and simple language possible. As a result of this process, the first version of the scale was obtained.

Expert panel

Three bilingual midwives with experience in clinical practice and research formed the expert panel. The goal at this stage was to identify and resolve any inadequate expressions or concepts from the initial Italian translation performed by the student. The expert panel discussed certain words or expressions and suggested alternative options. At the end of this phase, a second version of the scale was developed.

Back translation

An independent translator, fluent in Italian but whose native language was English, with no prior knowledge of the instrument or familiarity with midwifery, retranslated "version 2" of the scale back into English. The focus of the back translation was the same as that of the initial translation into Italian: conceptual and cultural equivalence was prioritized over literal accuracy. By comparing the original scale with "version 2" in English, the independent native English-speaking translator confirmed the conceptual equivalence.

Pre-test and cognitive interviews

The instrument was administered to the target population. WHO's cultural adaptation method recommends involving 10 participants per section of the instrument. Since the PBSES is divided into four factors grouping 18 items, plus two independent items, the scale was administered to a total of 60 women.

The inclusion criteria for participants were being pregnant, being over 18 years old, and having proficiency in Italian. Participants were recruited through convenience sampling via social networks. An invitation letter, containing an access link, was published on the researchers' social media accounts (Instagram, Facebook). The letter provided a brief description of the study and the women who decided to participate submitted their email address through the access link.

Participants were provided with email contacts through which they could request clarifications about the study, obtain information regarding data publication, and, if necessary, withdraw their participation.

The questionnaire was distributed to the mailing list compiled during recruitment. It was administered online via Google Forms, ensuring complete anonymity, and could be accessed only after participants provided informed consent. Although consent to participate was obtained from 88 women, only 60 actively completed the questionnaire. Recruitment took place from February 1 to March 15, 2023. Participants' ages ranged from 25 to 48 years. In terms of marital status, 61.7% (n = 36) were married, and the remaining 40.0% (n = 24) were either cohabiting or single. Regarding gestational age, the sample included 3.3% (n = 2) participants in the first trimester (0–13+6 weeks), 30% (n = 18) in the second trimester (14–27+6 weeks), and 66.7% (n = 40) in the third trimester (28+ weeks). In terms of parity, for 83.3% (n = 50) responders were their first pregnancy, while 16.7% (n = 10) participants reported having previous pregnancies. The educational level of the sample was medium to high: 75% (n = 45) women held a university degree, of whom 55.5% (n = 25) had a master's degree. Additionally, 23.3% (n = 14) women had a high school diploma, and 1.7% (n = 1) participant had completed lower secondary education. Many women 85% (n = 51) had already decided on the newborn's feeding method after birth. Among these, 50.9% (n = 26) participants intended to exclusively breastfeed postpartum.

Participants were then asked to rephrase each of the 20 items in their own words to test the equivalence of the expressed concept. They were also asked to highlight any words or expressions that were difficult to understand and, if applicable, suggest alternative wording that could make the statement clearer.

Final version

Based on the data collected during the pre-test phase, the final version of the instrument was established. Rather than employing a rigid statistical threshold, item modifications were driven by a qualitative consensus approach within the expert committee. Revisions were triggered whenever participants' feedback highlighted a clear conceptual misalignment, semantic ambiguity, or cultural bias that could compromise the item's face validity. Consequently, every instance of participant hesitation or negative feedback was systematically re-evaluated by the panel to determine whether a phrasing amendment was required.

Results

Initial Translation and Expert Panel Review (Phases 1 and 2)

In the first phase, the forward translation yielded an Italian version of the Prenatal Breastfeeding Self-Efficacy Scale (PBSES) characterized by clear, accessible language, ensuring comprehensibility for individuals outside the midwifery field. A conceptual rather than a literal approach was prioritized to preserve the original meaning. During the second phase, the expert panel resolved ambiguities regarding inadequate terminology, generating Version 2 of the PBSES (**Supplementary Table 1**). The subsequent back-translation phase revealed no substantial discrepancies between the original and back-translated versions, confirming conceptual equivalence across all items.

Pre-Testing and Cultural Adaptation (Phase 3)

Pre-testing of the 20-item instrument confirmed that 10 items were retained unchanged from Version 2, whereas the remaining 10 items required minor cultural adaptations based on participant feedback. Three representative examples of the adaptation process are presented below, while all modifications are reported in **Supplementary Table 2**. These refinements improved clarity, readability, and cultural appropriateness without altering the conceptual meaning of the original items. Factor 4 required no further cultural adaptations during the pre-testing phase, as participants reported no comprehension difficulties or culturally inappropriate wording.

Factor 1: Item 4 Adaptation

For Item 4 of Factor 1 ("I can breast-feed my baby when I'm upset"), the overarching conceptual meaning was validated by 81.7% (n = 49) of participants. The literal Italian translation of "upset" was utilized in 40% (n = 24) of responses. Conversely, 60.0% (n = 36) of participants employed alternative expressions denoting an altered emotional state, including "worried" (11.7%, n = 7), "agitated" (8.3%, n = 5), and "not calm" (6.7%, n = 4). Additionally, 5% of responses (n = 3) associated "upset" with physical or psychophysical distress, using terms such as "not feeling well", "mental and physical fatigue", or "altered psychophysical state". To reflect this semantic breadth, Item 4 was modified by appending the Italian equivalent of "worried" after "upset," linked by the conjunction "or."

Factor 2: Item 1 Adaptation

Item 1 of Factor 2 ("I can find out what I need to know about breast-feeding my baby") achieved a general conceptual agreement of 73.3% (n = 44). In rewording the item, 66.7% (n = 40) of

respondents introduced the term "information" to convey the core meaning of "what I need to know." However, the exact phrase "I need to know" was omitted by 60% (n = 36) of the sample, while 16.7% (n = 10) replaced it with adjectives such as "necessary", "useful" (6.7%, n = 4), or "essential" (1.7%, n = 1). Furthermore, 6.7% (n = 4) introduced the adverb "easily," which was absent in the original English formulation. Consequently, the item was culturally adapted by replacing "what I need to know" with "necessary" and "what" with "information."

Factor 3: Item 2 Adaptation

Cultural adaptation was also applied to Item 2 of Factor 3 ("I can breast-feed my baby around people I do not know"). The English preposition "around" was rephrased as "in the presence of" in 35% (n = 21) of cases. Regarding the phrase "people I don't know," 46.7% (n = 28) of participants chose more specific definitions, substituting it with "strangers" (25%, n = 15) or "unknown people" (21.7%, n = 13). The item wording was adjusted accordingly to enhance clarity in the target population.

At the end of the pre-testing phase, a final Italian version of the scale was obtained (**Supplementary Table 2**).

Discussion

The present study successfully translated and culturally adapted the Prenatal Breastfeeding Self-Efficacy Scale (PBSES) into Italian. A rigorous methodology was guaranteed, following the steps recommended by WHO[19]. The forward translation ensured that the Italian version of PBSES could be understood even by individuals without specific knowledge of midwifery, with a focus on clarity and accessibility instead of a literal translation. The expert panel led to minor adjustments in terminology to enhance cultural relevance and ease of comprehension. The back translation confirmed that the adapted items have the same meaning as the original scale. The pre-testing phase was conducted on a target population: participants clearly understood the general meaning of the scale, reporting a comprehension for each item ranging from 71.7% to 90%. Participants proposed alternative wording for 50% of the items; however, these refinements did not alter the conceptual meaning of the original statements. The final Italian version was, therefore, developed with the aim of achieving both linguistic equivalence and cultural appropriateness. Studies that have translated and cultural adapted self-efficacy scales in different languages report challenges like those encountered in our adaptation of the PBSES. The Spanish adaptation of the PBSES[18] faced linguistic modifications due to idiomatic expressions and cultural interpretations of breastfeeding-related terms. Similar results occurred in the Portuguese translation and cultural adaptation of Breastfeeding Self-Efficacy Scale, with minor modification of items[20].

Our study confirmed this trend, as participants proposed simplifications and modifications for certain terms *(e.g., "people I do not know "→" strangers"),* well knowing the overall meaning of the items, but using popular and familiar terms for the Italian language.

The final version of the PBSES, developed in this study, provides a foundational instrument for psychometric validation within the Italian population. Only after undergoing this validation process will this scale become a deployable, evidence-based resource for healthcare professionals during antenatal care and breastfeeding training, enabling the early identification of women at

high risk for premature breastfeeding cessation. Indeed, while the Breastfeeding Self-Efficacy Scale-Short Form[21] represents the only self-efficacy tool previously adapted into Italian, its applicability is strictly limited to the postpartum period; consequently, specific instruments to assess maternal self-efficacy antenatally remain lacking.

As a result of a recent systematic review and meta-analysis, prenatal interventions focused on breastfeeding may assist mothers with low self-efficacy to increase their confidence and ability to breastfeed[22]. The translated PBSES can be implemented into prenatal care programs, particularly during prenatal visits with midwives or lactation consultants. Healthcare providers can use the scale to assess a woman's confidence in breastfeeding before childbirth, enabling early identification of those who may need additional support. Pregnant women with low self-efficacy scores can receive targeted interventions, such as one-on-one counselling or peer support programs, that have been demonstrated as helpful strategies[23]. In the scale many topics are treated (e.g., breastfeeding in public, managing social pressure, or seeking information about breastfeeding), so it could be easy to target specifical interventions based on the score reached by women. Follow-up assessments using postnatal self-efficacy scales, such as the Breastfeeding Self-Efficacy Scale[21], can be conducted postpartum to monitor progress and reinforce positive breastfeeding experiences.

Limitations

This study should be interpreted considering some limitations. While the tool was successfully adapted according to WHO guidelines, its clinical implementation is pending formal psychometric validation–including internal consistency, test-retest reliability, and construct, convergent, and predictive validity at 3 and 6 months. Furthermore, regarding generalizability, the small sample size and social network-based recruitment may have introduced selection bias, restricting representativeness. Additionally, the sample's 94% prenatal intention to exclusively breastfeed drastically exceeds the actual Italian exclusive breastfeeding rate at 3 months (46.7%), suggesting an overrepresentation of highly motivated mothers[24]. While this potential bias limits generalizability to women facing lower motivation or greater breastfeeding difficulties, such a mismatch between prenatal intent and postpartum reality is a widely recognized phenomenon, typically driven by systemic and clinical barriers encountered after childbirth that heavily impact longitudinal outcomes. A low level of self-efficacy is widely associated with breastfeeding discontinuation[25], contributing to a suboptimal percentage of exclusive breastfeeding during the first 6 months[2]. However, because breastfeeding outcomes are inherently determined by the interplay of multiple confounding factors, investigating prenatal self-efficacy at this stage would represent only a beginning. Nevertheless, establishing an instrument upon which clinical practice can be objectively grounded would provide a substantial starting point. Future research will focus on a rigorous validation study deploying a multi-centre recruitment strategy to enhance sample representativeness. This subsequent phase is designed to comprehensively evaluate the tool's psychometric properties, including internal consistency, test-retest reliability, and construct validity. Furthermore, a longitudinal follow-up will be integrated to evaluate the scale's predictive validity against exclusive breastfeeding outcomes at 3 and 6 months postpartum.

Conclusions

The aim of the study was achieved through the translation and cultural adaptation of the scale. The final version of the PBSES developed in this study addresses a key determinant of breastfe-

eding duration and, following formal psychometric validation, could serve as an evidence-based tool for healthcare professionals to identify women at high risk of premature breastfeeding cessation during antenatal care.

Declarations

Artificial Intelligence (AI) – Assisted Technology Statement

No AI-assisted technologies were used in the preparation of this manuscript.

Authors' Contributions

All authors meet the 4 authorship criteria as defined by the International Committee of Medical Journal Editors (ICMJE). Each author has contributed substantially to the conception and design of the study, the analysis and interpretation of data, and the drafting and critical revision of the manuscript, as follows: VFZ, EV - Research concept and design, Collection and/or assembly of data, Data analysis and interpretation, Writing the article, Critical revision of the article, Final approval of the article; AN - Research concept and design, Data analysis and interpretation, Writing the article, Critical revision of the article, Final approval of the article; MS, SF - Research concept and design, Data analysis and interpretation, Critical revision of the article, Final approval of the article. All authors have approved the final version of this manuscript.

Conflict of Interest

The authors have no conflict of interest to declare.

Data Availability Statement

The data used and analysed during the current study are available upon reasonable request from the corresponding author.

Ethics Approval

Approval by the Ethics Committee was obtained from the Ethics Review Committee of the University of Milano-Bicocca - Italy (Prot. n. 0008867/2023, UOR 003297).

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Informed consent

All participants provided informed consent prior to participation.

References

1. World Health Organization. WHO recommendations on maternal and newborn care for a positive postnatal experience. Geneva: WHO; 2022.
2. United Nations International Children's Emergency Fund, World Health Organization. Glo-

bal breastfeeding Scorecard 2023 – Rates of breastfeeding increase around the world through improved protection and support. Geneva: UNICEF, WHO; 2023.

3. Victora CG, Bahl R, Barros AJ, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(10017):475-490.
4. Chowdhury R, Sinha B, Sankar MJ, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(467):96-113.
5. World Health Organization. Comprehensive implementation plan on maternal, infant and young child nutrition. Geneva: WHO; 2014
6. Istituto Superiore di Sanità. Sorveglianza Bambini 0-2 anni. ISS; 2022.
7. De Jager E, Skouteris H, Broadbent J, Amir L, Mellor K. Psychosocial correlates of exclusive breastfeeding: a systematic review. Midwifery. 2013 May 1;29(5):506-18.
8. Bandura A. Social foundations of thought and action. Englewood Cliffs, NJ. 1986;1986(23-28):2.
9. Dennis CL, Faux S. Development and psychometric testing of the Breastfeeding Self-Efficacy Scale. Res Nurs Health. 1999;22(5):399-409.
10. Molina Torres M, Dávila Torres RR, Parrilla Rodríguez AM, Dennis CL. Translation and validation of the breastfeeding self-efficacy scale into Spanish: data from a Puerto Rican population. J Hum Lact. 2003;19(1):35-42.
11. Baghurst P, Pincombe J, Peat B, Henderson A, Reddin E, Antoniou G. Breast feeding self-efficacy and other determinants of the duration of breast feeding in a cohort of first-time mothers in Adelaide, Australia. Midwifery. 2007 Dec 1;23(4):382-91.
12. Borona G, Gualdana G, Maga G, et al. Breastfeeding Self-Efficacy: A Systematic Review of Psychometric Properties Using COSMIN. J Hum Lact. 2023;39(4):595-614.
13. Dennis CL, McQueen K, Dol J, Brown H, Beck C, Shorey S. Psychometrics of the breastfeeding self-efficacy scale and short form: a systematic review. BMC Public Health. 2024 Feb 29;24(1):637.
14. Wells KJ, Thompson NJ, Kloeblen-Tarver AS. Development and psychometric testing of the prenatal breast-feeding self-efficacy scale. Am J Health Behav. 2006;30(2):177-187.
15. Johnson NA, Fuell Wysong E, Tossone K, Furman L. Associations Between Prenatal Intention and Postpartum Choice: Infant Feeding and Contraception Decisions Among Inner-City Women. Breastfeed Med. 2019;14(7):456-464.
16. Aydin A, Pasinlioglu T. Reliability and Validity of a Turkish version of the Prenatal Breastfeeding Self-Efficacy Scale. Midwifery. 2018;64:11-16.
17. Teng YF, Ho YJ. The Influence of Prenatal Breastfeeding Self-Efficacy on Breastfeeding Behavior of Taiwanese Pregnant Women. J Hum Lact. 2024;40(3):445-453.
18. Piñeiro-Albero RM, Ramos-Pichardo JD, Oliver-Roig A, et al. The Spanish version of the prenatal breast-feeding self-efficacy scale: reliability and validity assessment. Int J Nurs Stud. 2013;50(10):1385-1390.
19. World Health Organization. Process of translation and adaptation of instruments. Geneva: WHO; 2016.
20. Oriá MO, Ximenes LB. Translation and cultural adaptation of the Breastfeeding Self-Efficacy Scale to Portuguese. Acta Paulista de Enfermagem. 2010; 23:230-8.

21. Petrozzi A, Gagliardi L. Breastfeeding Self-Efficacy Scale: Validation of the Italian Version and Correlation With Breast-feeding at 3 Months. J Pediatr Gastroenterol Nutr. 2016;62(1):137-139.
22. Maleki A, Faghihzadeh E, Youseflu S. The Effect of Educational Intervention on Improvement of Breastfeeding Self-Efficacy: A Systematic Review and Meta-Analysis. Obstet Gynecol Int. 2021;2021:5522229.
23. Chang YS, Beake S, Kam J, Lok KY, Bick D. Views and experiences of women, peer supporters and healthcare professionals on breastfeeding peer support: A systematic review of qualitative studies. Midwifery. 2022;108:103299.
24. Pizzi E, Salvatore MA, Giusti A, et al. Monitoring prevalence of breastfeeding and associated factors: results of the 2022 data collection of the Italian surveillance of children aged 0-2 years. Ann Ist Super Sanita. 2025;61(1):3-12.
25. Tuthill EL, McGrath JM, Graber M, Cusson RM, Young SL. Breastfeeding Self-efficacy: A Critical Review of Available Instruments. J Hum Lact. 2016;32(1):35-45.

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