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Opportunities and challenges of complementary therapies in maternal and child health

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Abstract
Maternal and child health remains a paramount global concern that driven by persistently high mortality rates across many regions. Though conventional protocols are standard in clinical practice, their limitations have underscored the growing necessity for complementary interventions. Currently, complementary therapies serve an important role in supporting the promotive, preventive, and curative dimensions of maternal care. Yet, the literature regarding the specific opportunities and challenges of such integration remains sparse or largely unexplored. Therefore, the article presents a comprehensive examination of both the opportunities and challenges in the field to act as a hands-on guide for maternity nurses in the provision of complementary care. The integration of complementary therapies deals with numerous multiple challenges. Primary among these is a lack of strong evidence, compounded by inadequate standard clinical protocols and regulatory frameworks. Furthermore, implementation is often hindered by suboptimal public awareness, technical complexities, financial issues, and a shortage of specialized healthcare professionals. Conversely, these challenges can be addressed by using some key opportunities. For instance, prioritizing a holistic healthcare model, integrating psychosocial support, engaging community-based resources, and evaluating patient satisfaction. Evidence suggests that complementary therapies has great potential in supporting standard care in maternal and child health. However, further standardized regulation, robust clinical studies, and intensive professional training for nurses are needed to optimize its implementation in daily practice, both in hospitals and communities.

Keywords: Child health, complementary therapies, holistic care, maternity nursing, nursing care

A brief overview

Maternal nursing contributes to the Sustainable Development Goals (SDGs) by targeting the reduction of maternal and infant mortality worldwide (Taminato et al., 2023; Rosa et al., 2021). The key indicators of a country's public health status are the Maternal Mortality Rate (MMR) and the Infant Mortality Rate (IMR) (Dagher & Linares, 2022). The World Health Organization (WHO) reported that in 2023, approximately 260,000 maternal deaths occurred each year (Feng et al., 2025). Maternal mortality arises from both direct and indirect causes. Direct causes include hypertensive disorders—such as preeclampsia and eclampsia—hemorrhage, infections, and various obstetric and non-obstetric complications (Cresswell et al., 2025; Pratiwi et al., 2024). In addition to these clinical factors, indirect causes are categorized by the 'Three Delays' and the 'Four Too's.' The Three Delays involve delays in deciding to seek care, reaching a referral facility, and receiving appropriate treatment (Dana et al., 2020). Similarly, the Four Too's refer to high-risk reproductive behaviors: being too young (under 20), too old (over 35), having too many children (more than three), or having births too close together (intervals of less than two years). Previous studies have also indicated that maternal malnutrition contributes to restricted infant growth and neonatal mortality (Asferie et al., 2025; González-Fernández et al., 2024). Infant mortality is caused by mother's health condition, low birth weight (LBW), neonatal asphyxia, neonatal infections, non-communicable diseases (NCDs), and communicable diseases (Pal et al., 2025; Darmstadt et al., 2025). This situation highlights significant disparities in access to and quality of healthcare services, particularly in regions with limited resources.

The quality of the nursing care holds significant importance in safeguarding the developmental environment of the fetus (Bula-Romero et al., 2025), Thus, the health of the nation's future generation is established during the prenatal stage, where the mother's health status remains the primary influence (Patwardhan et al., 2025). Therefore, investing in

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the improvement of maternal and child health is a matter of national importance that requires urgent focus and commitment. For example, maternal healthcare must be prioritized throughout the pre-pregnancy, pregnancy, childbirth, and postpartum periods (Wojcieszek et al., 2023). To sustain ongoing care, every mother has the right to access health facilities that are safe, high-quality, and affordable. The health initiative supports a child's development and aims to minimize health risks from before birth until adulthood (Tegegne et al., 2024; Furness et al., 2025). Nurses are central to maternal and pediatric care, performing diverse interventions independently and as part of multidisciplinary teams (César-Santos et al., 2024; Bawah et al., 2023). Chief among these independent actions is the implementation of complementary therapies—an approach that bridges traditional and modern medicine (Fowler & Newton, 2006; Widiarta et al., 2022). The value of these therapies lies in their ability to improve the healing process along with serve as vital tools for health promotion and disease prevention (Dingley et al., 2021).

Complementary therapies: The basic and implementation in maternal and child health

Complementary and alternative medicine (CAM) was defined as diagnosis, treatment and/or prevention which complements mainstream medicine by contributing to a common whole, satisfying a demand not met by orthodoxy, or diversifying the conceptual framework of medicine (Ernst et al., 2001). Complementary therapies or CAM support holistic nursing by addressing the bio-psycho-social-spiritual needs of patients **(Figure 1)**. Such integrative approaches mirror early nursing philosophies that prioritize natural elements for a recovery. For example, Florence Nightingale through her Environmental Theory emphasized that the environment—including fresh air, clean water, efficient drainage, cleanliness, and light—supports and accelerates healing process (Kolagari, 2023). The theory posits that psychological and social factors are essential to the recovery process. This mirrors the holistic perspective of complementary therapies, which treats the patient as a unified whole. Another nursing theorist, Martha Rogers with her Theory of Unitary Human Beings perceives humans as energy fields continuously interacting with their environment (Hedlund, 2023). Therapies such as healing touch, meditation, and energy therapy are consistent with this concept, as they influence the patient's energy field. Similarly, Sister Callista Roy with her Adaptation Theory describes individuals as adaptive systems that respond to internal and external stimuli (Chen, 2025). Complementary therapies assist patients in adapting to stress and illness through practices such as yoga, music therapy, or meditation, thereby reducing anxiety and pain. These therapies strengthen coping mechanisms and promote both psychological and physiological adaptation.

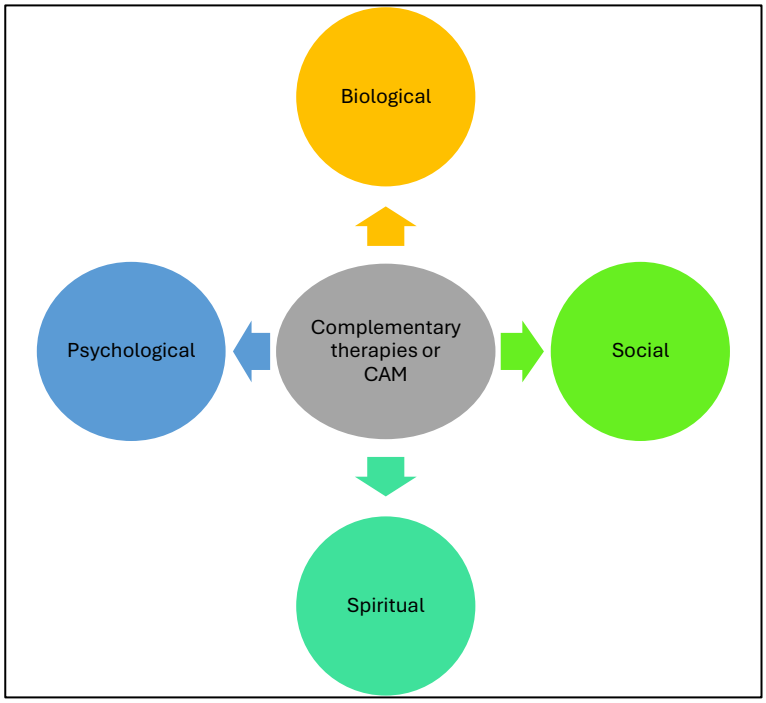


Figure 1. Complementary therapies or CAM and the targets (Generated by author from literature).

Complementary therapies or CAM aim to support healing without contradicting established medical values or health regulations. The global trend toward the use of complementary therapies continues to rise (Ogbu et al., 2023). This shift is driven by growing public awareness of holistic approaches and a desire to reduce the side effects associated with modern medical treatments (Wong et al., 2023). In the United States, approximately 42% of adults utilize complementary therapies (Rashrash et al., 2017). Similarly, data from Europe shows a 25.9% usage rate within a 12-month period, with Germany reporting the highest prevalence at 39.5% (Kemppainen et al., 2018). The WHO reported that more than 100 countries have established regulations governing complementary therapies (Hoenders et al., 2024). According to the 2018 Indonesian Basic Health Research (Riskesdas), approximately 30% of the population has utilized traditional or complementary medicine (Kementerian Kesehatan Republik Indonesia, 2018). Furthermore, the Indonesian Ministry of Health reported that roughly 60% of community health centers (Puskesmas) nationwide now provide complementary services, with a specific focus on acupressure and infant massage (Kementerian Kesehatan Republik Indonesia, 2023).

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The physiological processes underlying complementary therapy involve complex mechanisms designed to restore harmony and balance (Nguyen & Lavretsky, 2020). For instance, meditation and massage therapy activate the parasympathetic nervous system, triggering the body's relaxation and recovery responses (Lee & Frazier, 2011). Beyond neurological regulation, these therapies can also lower stress hormones while increasing endorphin production, resulting in significant analgesic and mood-enhancing effects (Abrahão et al., 2019). Another key physiological mechanism involves the optimization of hormonal balance, which strengthens the immune system and combat infections (Nilashi et al., 2020). Regarding cardiovascular health, relaxation-based modalities such as meditation and yoga are instrumental in reducing blood pressure and improving heart function (Joshi et al., 2024). Furthermore, massage enhance circulation and delivery of oxygen throughout the body (Field, 2016). Nutritional and herbal interventions, including dietary modifications, also play a role by improving digestive function and mitigating gastrointestinal disturbances (Kim et al., 2020). For the musculoskeletal system, massage and stretching reduce joint and muscle pain (Liza et al., 2023). Exercises such as yoga and tai chi improve flexibility, reduce injury risk, and improve physical performance (Chen, 2019; Krishnamurthy, 2023). Chromopressure as combination of chromo therapy and acupressure can be used to reduce fatigue (Rahayu et al., 2022). All the aforementioned therapies can be applied within the context of maternal and child health, provided they are administered with specific dosages and durations.

Furthermore, the author has conducted several studies on complementary therapies specifically tailored for maternal and child health. For instance, acupressure was found effective in managing nausea and vomiting during the first trimester (Putri et al., 2017) and relieving pain during the labor process (Fitriyani et al., 2024). Regarding psychological well-being, Murottal therapy significantly reduced anxiety in third-trimester pregnant women (Ulya et al., 2024). The author also developed Pain Digital Acupressure (PDA) specifically to address labor pain (Koestoer & Rahayu, 2017). In the postpartum period, SPEOS massage therapy can be utilized to facilitate breast milk production (Sari et al., 2017), while warm and cold compresses effectively manage perineal pain (Purwaningsih et al., 2015). Building on this research, the author developed a Mangrove Leaf Extract Nanogel to reduce labor pain (Rahayu et al., 2019; Rahayu et al., 2021). This innovation led to the creation of LINTARI (*Bersalin Tanpa Nyeri*), a product that has been granted a simple patent and received both BPOM authorization and Halal certification in Indonesia. The studies mentioned above demonstrate that the use of complementary therapies in maternal and child health is already well-established. In fact, participants often experience the beneficial effects within a particular timeframe. However, their implementation is not without its challenges and opportunities, particularly for maternity nurses.

Challenges and opportunities

A significant challenge for maternity nurses is the lack of robust evidence supporting the safety and efficacy of complementary therapies. Although practices such as using *katuk* leaves for lactation are widespread in some countries such as Indonesia, they often lack the validation of high-standard clinical trials. To address this, there is a critical need for experimental research and meta-analyses. Such evidence is vital for evaluating potential side effects and establishing these interventions as legitimate components of nursing practice. Another point is the absence of clear national standards for complementary nursing practice poses significant risks to safety. Hence, establishing regulation is essential to protect both patients and healthcare providers from adverse outcomes. Then, the general public has not yet fully understood or accepted complementary nursing as therapies. Many people still perceive complementary therapy as a traditional approach lacking scientific foundations or even equate it with untested alternative practices. Consequently, doubt and skepticism persist regarding the effectiveness and safety of complementary therapies. Some complementary therapies require specific equipment and infrastructure that are not yet available in all healthcare facilities. For example, therapies such as acupuncture, biofeedback, hydrotherapy, or technology-based music therapy. The cost of complementary therapies may be a barrier for some patients, particularly those from low-income groups. Several therapies—such as acupuncture, herbal treatments, therapeutic yoga, massage, and aromatherapy—are not fully covered by national health insurance programs such as Indonesia's National Health Insurance (JKN). As a result, patients often have to pay out-of-pocket, which can become a financial burden. Also, most healthcare professionals, including nurses, have not yet received adequate formal education or training in complementary therapies. Consequently, the practice of complementary therapy remains limited and has not been fully integrated into healthcare services. Clinical communication among healthcare professionals is known as challenges in implementing therapies.

However, regardless of the issues mentioned, there are numerous opportunities that can be optimized to integrate complementary therapies into maternal and child health. For instance, adopting a holistic approach with focusing on physical, emotional, and spiritual dimensions (Pavković et al., 2024). This perspective facilitates psychological support, and overcome anxiety often inherent in maternity and pediatric care. Furthermore, the high degree of community

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availability confirms that these interventions remain accessible even in underserved regions (Jones et al., 2018; Prasad et al., 2024). As these therapies are integrated into standard protocols, there is a chance to increase patient satisfaction as families feel more empowered and engaged during care delivery. This momentum is bolstered by government support, which provides the necessary regulatory frameworks and policy to formalize these practices within national health systems. The government's role is important to optimize the integration of complementary therapies in hospitals or community practices. In Indonesia, complementary therapy has gained official recognition through several health regulations issued by the Ministry of Health. For example, Minister of Health Regulation No. 1109/Menkes/Per/IX/2007 about the implementation of traditional complementary medicine services, Government Regulation (PP) No. 103 of 2014 on traditional health services, and Minister of Health Regulation (Permenkes) No. 15 of 2018 regarding the implementation of traditional complementary health services. The 2018 regulation elaborates on the types of complementary health services, licensing requirements for traditional health practitioners—such as the Traditional Health Worker Registration Certificate (STRTKT) and the Traditional Health Worker Practice License (SIPTKT)—as well as provisions regarding health facilities and adaptation obligations for existing institutions. From a clinical standpoint, many complementary interventions are favored for their minimum side effects that offering an adjunct to conventional pharmacology (Odegard et al., 2022). Moreover, the inclusion of these modalities encourages specialized training in clinical communication to bridge gaps and build stronger therapeutic alliances. Finally, the rising clinical interest in this field is stimulating a surge in research funding. This investment is essential for establishing the evidence base required to standardize these interventions and ensure sustainability in clinical practice **(Table 1)**.

Table 1. Challenges and opportunities in implementing complementary therapies.

Challenges	Opportunities
Limited strong scientific evidence for some therapies	Holistic approach
Lack of standards and regulations	Psychological support
Limited public awareness	Community availability
Technical challenges	Enhanced patient satisfaction
Financial barriers	Government support
Limited human resources	Minimum side effect
Clinical communication among healthcare professionals	Affordable
	Training in clinical communication
	Research funding

Conclusion

The implementation of complementary therapies or CAM in maternal and child health offers opportunities and clinical potential. However, it is equally essential that maternity nurses possess both the self-confidence and the passion required to implement these modalities. This personal commitment is vital, as it determines the sustainability of such programs and directly impacts the development of nursing competencies in today's era of globalization and hyper-competition. Furthermore, basic research on complementary therapies should be continuously advanced into applied research, ultimately facilitating the translation of research findings into industrial applications and commercialization in the future. It is essential that complementary therapy courses be integrated into nursing education curricula globally. Such an integration would empower nurses to establish independent professional practices that specialize in these complementary modalities.

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AI statements

The author declared that no generative AI tools were used in the writing or creation of this manuscript. All content was critically reviewed, modified, and approved by the author, who retain full responsibility for the manuscript's accuracy and ethics.

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Author's declaration
This article is written based on research experience in the fields of maternity nursing and complementary therapies. The author hopes that the insights from this work can be widely used to improve clinical nursing practice worldwide.

Availability of data and materials
All data and materials in this article are derived from relevant literature and research previously conducted by the author. All sources are cited in the reference section of this article.

Competing interests
The author declared that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical clearance
Ethical approval was not required for this study because it did not involve human participants or animal subjects.

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Publishers and journal's note
This article is highly compelling that offering a detailed and profound exposition. It was authored by a nursing professor specializing in maternity nursing and complementary therapies, with over 30 years of experience in the field. The insights presented a fresh perspective for maternity and pediatric nurses looking to integrate complementary therapies into patient care.

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Authors' insight

Key points

- Complementary therapy is increasingly being sought by pregnant women and new mothers for managing symptoms and improving well-being.
- There is a need for more clinical nursing research to support their effectiveness and safety in maternal and child health.
- Incorporating complementary therapy into standard healthcare practice requires regulatory, training, and support from health policy maker.

Emerging nursing avenues

- What are the most effective complementary therapies for managing common pregnancy symptoms like nausea and back pain?
- How can healthcare providers assure safe of complementary therapies among pregnant women, new mothers, and child health?
- What are the barriers to integrating complementary therapy services into public healthcare systems for maternal and child health in countries?

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