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PERSPECTIVE ARTICLE

Integration of Perinatal Mental Health into Maternal and Child Care: Progress and Challenges from the World Health Organization's Perspective

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Introduction: Perinatal mental health is essential for maternal and child well-being, and its promotion has the potential to improve health outcomes while reducing social and healthcare costs in both the short and long term. The World Health Organization (WHO) is making efforts to integrate mental health into maternal and child health services on a global scale.

Areas covered: Since 2001, the WHO has addressed mental health in its documentation, emphasizing the importance of safeguarding child health and supporting caregivers. However, perinatal mental health has primarily been developed within maternal and child health care strategies. The publication of the "Guide for Integration of Perinatal Mental Health in Maternal and Child Health Services" (2022) marks a significant advancement through providing specific recommendations for implementing perinatal mental health within healthcare systems.

Expert opinion: Despite these advances, integrating perinatal mental health into healthcare systems faces challenges, including the integration of care for fathers and families, training healthcare professionals, and considering women's lived experiences. Barriers include gender and age discrimination, mental health stigma, and deficiencies in healthcare infrastructure, particularly in low- and middle-income countries (LMICs).

Conclusion: Comprehensive maternal and child health care has the potential to improve maternal and child well-being while reducing long-term costs. To enhance perinatal mental health globally, it is essential to integrate it at all levels of healthcare, incorporating user experiences, strengthening professional training, and ensuring adequate resources within healthcare systems.

Keywords: World Health Organization, mental health, perinatal mental health, mother-child health, human rights

Introduction

The right to mental health is a fundamental human right, constituting an essential part of individuals' health and well-being; a key element for individual, community, and socio-economic development (WHO, 2006; WHO, 2022e; WHO, 2022f). The World Health Organization (WHO) is the United Nations agency responsible for promoting the highest possible level of health for all people, and its recommendations are critical in shaping healthcare system policies. Over the past quarter-century, the WHO has developed a framework to recognize, protect, and promote mental health, which has progressively incorporated the specificities of the perinatal period

(WHO, 2022a). It is estimated that one in five women experience some form of mental health issue during pregnancy and/or the first year postpartum (WHO, 2022a). Scientific evidence has demonstrated that promoting maternal health and positive experiences during the perinatal period and early childhood yields short- and long-term benefits for both maternal and child health and well-being (United Nations, 2003; Powell et al., 2022; Roque et al., 2022). Additionally, perinatal mental health problems carry an extremely high economic burden, often requiring healthcare, social and judicial resources in the short and medium term (Conecta Perinatal, 2022). A 2014 study by the London School of Economics found that 28.0% of the additional costs are directed toward maternal care, while 72.0% are allocated to the care of children over their lifetimes (Bauer et al., 2014). This study estimates that the long-term costs of perinatal depression, anxiety disorders and psychosis reach £8.1 billion per birth cohort per year. Therefore, the early detection and treatment of perinatal mental health disorders can be highly cost-effective strategies for healthcare systems.

Despite this, perinatal mental health care remains insufficient in many regions of the world (Tripathy, 2020; Paricio del Castillo, 2024). In part, this is due to a historically prevailing approach to maternal and child health that focuses on mother-baby survival rather than on promoting well-being, given the dramatic maternal and infant mortality rates that still persist in many countries (WHO, UNICEF, UNFPA, 2023). However, with the arrival of the 21st century, the WHO has intensified its efforts to achieve the highest possible level of health and well-being for mothers and their babies, beyond mere survival. In parallel with the WHO's work, numerous authors have recognized the value of preventing and addressing maternal distress, and this has begun to materialize in clinical practice. In several countries, clinical practice guidelines have been implemented, encouraging obstetric and medical teams to assess the emotional state and stress adaptation of pregnant women. A notable example is the guideline issued by the National Institute for Health and Care Excellence (NICE) in 2007, which advocated for the routine evaluation of maternal mental health in the prenatal context (NICE, 2007).

This paper conducts the WHO's documentary review to outline the historical evolution of the organization protecting perinatal mental health and developing its comprehensive perinatal care model. The review also aims to assess the challenges faced and opportunities arising in healthcare systems worldwide in implementing the WHO's integrated maternal and child healthcare model.

WHO's Work in Protecting Perinatal Mental Health

The WHO has been a pioneering organization in recognizing the importance of mental health care within health-care systems. In 2001, the WHO's annual report on world health addressed mental health for the first time in a dedicated monograph (WHO, 2001b). That same year, the "Mental Health Atlas" was published, a document that has since been updated several times, with the most recent version released in October 2021 (WHO, 2001a; WHO, 2021b). These documents marked a turning point through acknowledging the need for measures to reduce the burden of mental disorders and to improve the capacity of nations to respond to the challenges posed by these disorders' prevalence. The WHO highlighted that mental health issues incur significant economic costs and are inadequately resourced, further noting that individuals with mental disorders often suffer severe human rights violations.

In 2002, the 55th World Health Assembly endorsed the WHO's "Global Mental Health Action Programme", which placed mental health on the global public health agenda (WHO, 2002). Subsequently, in 2008, the WHO launched the "Mental Health Gap Action Programme" (mhGAP), aimed at low- and middle-income countries (LMICs), to expand mental health services by means of increasing financial and human resources through government and stakeholder commitments (WHO, 2008b). This program emphasized the integration of mental health care into non-specialized healthcare services, an approach that would later become crucial in developing the framework for perinatal mental health care. In that same year, under Bertolotto's leadership, the WHO convened a group of experts to analyze pregnant and postpartum women's mental health and its impact on child survival and well-being (WHO, 2008a).

Over a decade later, in 2019, the WHO launched the "Special Initiative for Mental Health (2019-2023): Universal Health Coverage for Mental Health", a five-year program backed by a \$60 million investment aimed at ensuring affordable access to quality care for individuals with mental disorders in 12 priority countries (WHO, 2019).

In response to the 2012 World Health Assembly resolution on the global burden of mental disorders and the need for a comprehensive, coordinated response by countries' health and social services, the WHO adopted the "Comprehensive Mental Health Action Plan 2013-2020" (WHO, 2013). This global plan provided guidance for national action plans and highlighted strategies for mental health promotion and prevention. However, by 2022,

after the "Mental Health Atlas 2020" revealed insufficient progress in several countries, the WHO updated this plan as the "Comprehensive Mental Health Strategic Plan 2013-2030", approved during the 74th World Health Assembly (WHO, 2022c). This updated plan seeks to improve mental health through more effective governance, emphasizing mental health promotion, prevention for at-risk populations, and ensuring universal coverage for mental health services through community-based approaches. It also stresses the importance of strengthening mental health research.

In 2022, the WHO released the "World Mental Health Report: Transforming Mental Health for All", which asserts that improving a country's mental health would yield significant societal progress and calls on governments to accelerate its implementation (WHO, 2022e). The report identifies two key strategies for mental health reform: promoting mental health for all and protecting those at risk, especially children and adolescents. It emphasizes that mental health care should be provided within communities and integrated into general health services, ensuring that responsibility for mental health care extends beyond the health sector alone.

Chapter 6 of this report underscores the need for "multisectoral promotion and prevention for all", with particular attention given to early childhood, childhood, and adolescence as critical periods of vulnerability and opportunity in mental health (WHO, 2022e, p. 7). The report recognizes the profound impact that early caregiving and childhood experiences have on mental health across the lifespan: "Supportive caregiving and learning environments can be enormously protective of future mental health. Conversely, adverse childhood experiences increase the risk of mental disorders" (WHO, 2022e, p. 8). The strategies proposed to reduce risks and promote protective factors for child mental health policies feature supporting mental health, caregiver support, and the improvement of community and digital environments.

Although the WHO's mental health documents acknowledge the importance of promoting the mental health of caregivers and ensuring supportive childhood environments, they do not explicitly describe the need to protect perinatal mental health, which is often addressed under the broader scope of "youth health" (United Nations, 2022). Critics have pointed out that initiatives like the pan-European Mental Health Coalition, which aims to improve mental health across Europe through inclusive policies, prevention, and access to quality services, have only partially integrated perinatal mental health into these efforts (WHO, 2022b). The lack of a specific focus on perinatal mental health risks underestimating its importance, highlighting the need to address it as a distinct priority.

Conversely, in the WHO's documents and strategies related to maternal and child health, there is a long-standing focus on perinatal mental health, with considerable attention given to maternal well-being and child care. Based on a human rights framework, the WHO emphasizes the importance of centering women's preferences, values, and autonomy in the healthcare provided throughout their reproductive processes, encouraging active participation in improving care quality and promoting positive experiences. The WHO also supports integrating psychosocial care into health promotion activities during pregnancy, childbirth, and the postpartum period.

Women's rights in reproductive health, as well as the significance of their experiences with maternity care, are prominently reflected in the 2014 statement "Prevention and Elimination of Disrespect and Abuse during Facility-based Childbirth" (WHO, 2014c). This declaration calls attention to the global mistreatment of women during childbirth, which not only violates their right to respectful care but also threatens their rights to life, health, physical integrity and non-discrimination. It urges stronger "action, dialogue, research, and support to address this major public health and human rights issue" (WHO, 2014c, p. 1).

Between 2016 and 2022, the WHO updated its recommendations on pregnancy, childbirth, and postnatal care, presenting a trilogy of guidelines where women's experiences and their perceived quality of care play a central role. This is evident in the titles of the recommendations: "Antenatal Care for a Positive Pregnancy Experience", "Intrapartum Care for a Positive Childbirth Experience" and "Postnatal Care for the Mother and Newborn for a Positive Postnatal Experience" (WHO, 2016; WHO, 2018; WHO, 2022d).

In 2020, the WHO published its guidelines on "Improving Early Childhood Development", identifying maternal mental health as a foundational pillar for child development (WHO, 2020). The document highlights that achieving optimal child development requires affectionate caregiving, and often, caregivers need support to provide this. It also emphasizes the need to integrate specific psychological interventions for maternal mental health support into early childhood health and development services.

However, the first WHO document specifically dedicated to perinatal mental health was the "Guide for Integration of Perinatal Mental Health in Maternal and Child Health Services" (WHO, 2022a). This guide represents a major milestone, due to not only placing perinatal mental health at the forefront but also providing specific recommendations for integrating maternal mental health care into service provision and evaluating the impact of established programs. It outlines a comprehensive approach to perinatal mental health, ranging from promoting

mental health and preventing disorders to treating affected mothers, providing early mental health interventions within maternal and child services, and addressing vulnerable groups. The guide proposes a personalized and stepped-care intervention model, tailored to each woman and context of care.

In Annex III, the guide includes a list of quality indicators for assessing the proper implementation of mental health care within maternal and infant care services (WHO, 2022a). Key metrics to monitor these include mental health promotion, screening and detecting mental health issues, social support, psychological interventions, medication, health professional training, provider supervision, and service coordination. For each of these areas, it suggests various indicators, such as the number of perinatal mental health programs, the number of women served, their satisfaction levels, screening coverage, the number of women identified with perinatal mental health problems, medication prescriptions, the types of psychotropic drugs used, the number of psychological interventions provided, the number of professionals trained to perform first-level psychological interventions, among others (WHO, 2022a).

Implementation of Perinatal Mental Health Services: A Critical Discussion

As advocated by the WHO, perinatal mental health care includes its integration into pediatric and maternity services (WHO, 2022a). Developing maternal and child health services with comprehensive care requires significant structural changes. Some of these changes entail training and educating the professionals involved, allocating resources for service coordination, involving fathers and families in care, and taking the experiences into consideration as reported by the women using the services, among other issues (WHO, 2022a).

The challenges to integrating perinatal mental health into maternal and child healthcare are numerous. Some of the barriers to achieving adequate perinatal mental health care are the same as those that hinder the comprehensive care of mental health in healthcare systems. The WHO notes that, despite the increase in resources allocated to mental health in recent years, most health systems worldwide still fail to adequately invest in its care (WHO, 2018). Furthermore, individuals with mental health issues often suffer the unfavorable effects of other social determinants of health, such as poverty, violence, or unequal power relations, and often become stigmatized within healthcare systems (WHO, 2013). As a result, people with mental health issues often face greater difficulties in receiving adequate, quality, and non-discriminatory healthcare.

In the case of perinatal mental health care, additional gender-based discrimination against women and age-based discrimination in early childhood also come into play. The discrimination that many women still face in healthcare is evident in cases such as obstetric violence (WHO, 2014c; United Nations, 2019). Therefore, it is essential to train healthcare professionals in gender perspectives and fight against women's structural discrimination within healthcare systems (WHO, 2014c; López-Martín, 2021; United Nations, 2023). On the other hand, infants and young children, who have not yet developed a verbal language, are often not treated as full individuals, and healthcare efforts are not always made to ensure good communication with them (WHO, 2014a; WHO, 2014b; WHO, 2017).

The inequalities arising from different levels of economic development between countries cannot be ignored. According to WHO data, almost 800 women died each day in 2020 due to preventable causes related to pregnancy and childbirth, equivalent to nearly one maternal death every two minutes globally, and 95.0% of these deaths occurred in LMICs (WHO, 2023). Therefore, in many parts of the world, the primary investment in maternal and child health aims at training and educating maternity professionals (mainly midwives) to combat this scourge. In health systems where a large number of women are not even attended to during childbirth by specialized healthcare professionals, additional training in perinatal mental health competencies unfortunately poses a significant challenge. Nevertheless, the WHO has also been a key actor in efforts to integrate mental health care into maternal health services in LMICs. These initiatives have included task-shifting to non-medical professionals, such as nurses or social workers, and training community members to implement basic interventions aimed at improving maternal mental health (WHO, 2015).

It cannot be overlooked that improving the living conditions in which maternity and child-rearing take place means an essential part of protecting women's and early childhood mental health; this, however, goes beyond the competencies of health systems (WHO, 2022a). Indeed, social and economic policies are needed to adequately protect women from all discrimination based on maternity, ensuring paid maternity leave, decent working and housing conditions, and adequate public childcare systems, among other necessary measures.

Despite the challenges and difficulties, the WHO's efforts to improve perinatal mental health globally offer undeniable opportunities. In addition to improving access to mental health care for women who contact healthcare

systems for the first time for the care of their pregnancies and childbirths, the organization's comprehensive model can facilitate the therapeutic adherence of those reluctant to attend specific psychiatric services (WHO, 2022a). Furthermore, protecting and promoting perinatal mental health offers a privileged opportunity to improve population health, as the investment in this vital stage not only enhances the health of affected women and their babies but has been associated with long-term health improvements. Finally, and no less importantly, the early treatment of perinatal mental health disorders could reduce the significant economic costs associated with them in the short, medium, and long term (Bauer et al., 2014).

Conclusion

Paraphrasing the WHO's motto, "there is no health without mental health" (WHO, 2001b), we can also assert that there is no maternal and child health without perinatal mental health. Comprehensive care for mothers and their babies is a strategy that can improve population health by means of reducing the disease burden, while also contributing to the sustainability of healthcare systems by lowering associated economic costs.

The WHO's efforts to promote an integrated maternal and child healthcare model, which also includes perinatal mental health care, culminated in 2022 with publishing its first and only document dedicated specifically to perinatal mental health. This document represents a critical step toward achieving comprehensive, quality healthcare for mothers and their babies worldwide.

However, there are barriers that hinder the development of this model within healthcare systems, such as the discrimination faced by women and young children, the persistent stigma surrounding individuals with mental health issues, and the severe shortcomings in maternal and child healthcare that many healthcare systems, particularly in LMICs, still exhibit.

Although the prospect of adequate global perinatal mental health services remains distant, the current awareness of its importance is encouraging. To advance in this direction, it is essential for governments, international organizations, and stakeholders to work together to implement the WHO's recommendations, promoting policies and programs that integrate perinatal mental health into all levels of care.

Furthermore, it is crucial to strengthen the training of healthcare professionals in this field, ensure sufficient resources, and promote ongoing research on best practices in perinatal mental health care, incorporating the experiences of mothers, fathers, and families into healthcare services.

Only through a sustained and collective effort can a true transformation in maternal and child mental health care be achieved, ensuring that all mothers and babies receive the support and care they need to reach their full health and well-being potential.

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Author contribution

Rocío PARICIO-DEL-CASTILLO: conceptualization, design, methodology, investigation, funding acquisition, investigation, project administration, data management, formal analyses, interpretation, supervision, writing original draft, writing review and editing.

Declaration of interest statement

The author has no conflicts of interest to disclose.

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References

- Bauer, A., Parsonage, M., Knapp, M., Iemmi, V., & Adelaja, B. (2014). *The costs of perinatal mental health problems*. Centre for Mental Health and London School of Economics. http://dx.doi.org/10.13140/2.1.4731.6169
- Conecta Perinatal. (2022). Mejorar el cuidado de la salud mental perinatal. Fundamentos, propuestas y peticiones [Improving Perinatal Mental Health Care: Fundamentals, Proposals, and Requests]. *Naciendo, 2*, 103–153. https://doi.org/10.52961/02.trzx3056
- López-Martín, A. G. (Principal Investigator). (2021-2026). CEDAW 40 years later: Are women's rights liquid? (Reference: PID2021-122788OB-I00). Ministry of Science and Innovation, National R&D&I Program.
- National Institute for Health and Care Excellence. (2007). Antenatal and postnatal mental health: Clinical management and service guidance (Clinical guideline CG45). NICE. https://www.nice.org.uk/guidance/cg45
- Paricio Del Castillo, R. (2024). Salud materno-infantil y salud mental perinatal: un ámbito de mejora en la sanidad española [Maternal and Child Health and Perinatal Mental Health: an area of improvement in Spanish Healthcare]. *Revista Española de Salud Pública, 98*, e202404031. https://pubmed.ncbi.nlm.nih.gov/38639202
- Powell, C., Bedi, S., Nath, S., Potts, L., Trevillion, K., & Howard, L. (2022). Mothers' experiences of acute perinatal mental health services in England and Wales: A qualitative analysis. *Journal of Reproductive and Infant Psychology*, 40(2), 155–167.
 - https://doi.org/10.1080/02646838.2020.1814225
- Roque, A. T. F., Lasiuk, G. C., Radünz, V., & Hegadoren, K. (2017). Scoping review of the mental health of parents of infants in the NICU. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 46(4), 576–587.
- https://doi.org/10.1016/j.jogn.2017.02.005 Tripathy, P. (2020). A public health approach to perinatal
- mental health: Improving health approach to perinatal mental health: Improving health and wellbeing of mothers and babies. *Journal of Gynecology Obstetrics and Human Reproduction*, 49(6), Article 101747.
 - https://doi.org/10.1016/j.jogoh.2020.101747
- United Nations. (2003). Committee on the Rights of the Child. General Comment No. 4: Adolescent health and development in the context of the Convention on the Rights of the Child (CRC/GC/2003/4).
 - https://digitallibrary.un.org/record/503074?v=pdf
- United Nations. (2019). Report of the Special Rapporteur on violence against women, its causes and consequences: A human rights-based approach to mistreatment and violence against women in reproductive health services, with a focus on child-birth and obstetric violence.
 - https://documents-dds-ny.un.org/doc/UNDOC/GEN/N19/213/30/PDF/N1921330.pdf?OpenElement
- United Nations. (2022). Youth Mental Health.
 - https://sdgs.un.org/partnerships/youth-mental-health
- United Nations. (2023). Committee on the Elimination of Discrimination against Women (CEDAW), Views adopted by the Committee under article 7(3) of the Optional Protocol concerning Communication No. 154/2020. CEDAW Committee Views No. 154/2020, of 24 February 2023 (CEDAW/C/84/D/154/2020).
 - https://digitallibrary.un.org/record/4008329?ln=es&v=pdf

- World Health Organization. (2001a). *Mental Health Atlas*. https://www.who.int/teams/mental-health-and-substance-use/data-research/mental-health-atlas
- World Health Organization. (2001b). The world health report 2001: Mental health: New understanding, new hope. https://iris.who.int/handle/10665/42390
- World Health Organization. (2002). Global mental health action plan: 55th World Health Assembly.
 https://iris.who.int/bitstream/handle/10665/259364/WHA55-2002-REC1-eng.pdf
- World Health Organization. (2006). WHO Resource book on mental health, human rights, and legislation. http://www.lhac.eu/resources/library/who_resource-book-
- on-mental-health-human-rights-and-legislation--2.pdf World Health Organization. (2008a). *Maternal mental health* and child health and development in low and middle income
- and child health and development in low and middle income countries: Report of the meeting held in Geneva, Switzerland, 30 January 1 February 2008.
- https://www.who.int/publications/i/item/9789241597142 World Health Organization. (2008b). *Mental health gap action programme (mhGAP)*.
- https://www.who.int/publications/i/item/9789241596206
- World Health Organization. (2013). Comprehensive mental health action plan 2013-2020.
 - https://www.who.int/publications/i/item/9789240031029
- World Health Organization. (2014a). Every newborn: An action plan to end preventable deaths.
 - https://www.who.int/publications/i/item/every-newborn-an-action-plan-to-end-preventable-deaths
- World Health Organization. (2014b). Integrated management of childhood illness.
 - https://www.who.int/publications/m/item/integrated-management-of-childhood-illness---chart-booklet-(march-2014)
- World Health Organization. (2014c). The prevention and elimination of disrespect and abuse during facility-based childbirth. https://www.who.int/publications/i/item/WHO-RHR-14.23
- World Health Organization. (2015). Thinking Healthy: A Manual for Psychosocial Management of Perinatal Depression. https://www.who.int/publications/i/item/WHO-MSD-MER-15.1" \t "_blank
- World Health Organization. (2016). WHO recommendations on antenatal care for a positive pregnancy experience.
 - h t t p s : //iris . w h o . i n t / b i t s t r e a m / h a n d le/10665/250796/9789241549912-eng.pdf
- World Health Organization. (2017). WHO recommendations on newborn health: Guidelines for care of the healthy newborn. https://www.who.int/publications/i/item/WHO-MCA-17.07
- World Health Organization. (2018). [Recomendaciones de la OMS sobre cuidados maternos y neonatales para una experiencia posnatal positiva] WHO recommendations: Intrapartum care for a positive childbirth experience.
 - https://iris.paho.org/bitstream/handle/10665.2/57092/9789275326817_spa. pdf?sequence=1&isAllowed=y
- World Health Organization. (2019). The WHO Special initiative for mental health (2019-2023): Universal health coverage for mental health.
 - https://www.who.int/publications/i/item/special-initi-

- ative-for-mental-health-(2019-2023)#:~:text=This%20 WHO%20Special%20Initiative%20seeks,to%20100%20 million%20more%20people .
- World Health Organization. (2020). *Improving early childhood development.*
- https://www.who.int/publications/i/item/97892400020986 World Health Organization. (2021b). *Mental Health ATLAS*
 - https://www.who.int/publications/i/item/9789240036703
- World Health Organization. (2022a). WHO guide for the integration of perinatal mental health into maternal and child health services. 19 September 2022.
 - https://www.who.int/publications/i/item/9789240057142
- World Health Organization. (2022b). First meeting of the pan-European Mental Health Coalition: From debate to action. https://www.who.int/europe/publications/i/item/WHO-EURO-2022-5769-45534-65202

- World Health Organization. (2022c). Mental health action plan 2013-2030.
 - https://www.emro.who.int/mnh/mental-health-action-plan/index.html
- World Health Organization. (2022d). WHO recommendations on maternal and newborn care for a positive postnatal experience.
 - https://www.who.int/publications/i/item/9789240045989
- World Health Organization. (2022e). World mental health report: Transforming mental health for all.
 - https://www.who.int/publications/i/item/9789240049338
- World Health Organization. (2022f). Mental health (Fact sheet).
 - https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response
- World Health Organization. (2023). Trends in maternal mortality 2000 to 2020: Estimates by WHO, UNICEF, UNFPA, World Bank Group, and the United Nations Population Division. https://www.who.int/publications/i/item/9789240068759