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Original Research Paper

# Midwives' readiness for handling postpartum Perinatal Mental Health (PMH) disorders: a mixed-methods study

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## Abstract

Perinatal mental health (PMH) disorders affect 15.6–37% of postpartum women, yet midwives report low confidence in detection and management due to inadequate training and protocols. This study evaluated midwives' readiness to handle postpartum PMH disorders in community health centers. A convergent parallel mixed-methods design was used in eight Mataram City health centers (December 2023–January 2024). Quantitatively, 102 purposively sampled midwives completed validated questionnaires on sociodemographics, screening practices, and PMH handling, analyzed via chi-square tests. Qualitatively, thematic analysis of in-depth interviews with six informants (managers, midwives, and mental health nurses) explored referral experiences using N-Vivo. Most midwives (86.27%) did not handle PMH appropriately. The implementation of PMH data assessment (37.25%), screening (37.26%), and classification (22.56%) was low. Handling PMH significance association with screening (p=0.001, OR 14.31), classification (p=0.001, OR 23.22), and data assessment (p=0.009, OR 9.43). Age, education, experience, and training were not associated. Themes emphasized referral collaboration with family consent, consultation with mental health nurses/doctors, and hospitalization for the most serious cases. Midwives are not yet sufficiently prepared to address the perinatal mental health (PMH) needs of postnatal women. Poor screening uptake is a consequence of the absence of protocols and time limitations, and this highlights requirements for training and standardized pathways. Referral dependence is compensatory but inconsistent, mirroring global appeals for inter-professional approaches. Targeted PMH training and referral protocols are crucial in order to assist the development of midwives' skills to provide prompt care and reduce maternal-infant risk. Interventions should be tested in longitudinal studies across a variety of Indonesian contexts.

**Keywords:** community health center; midwive readiness; perinatal mental health; PMH disorders; postpartum

## 1. Introduction

Perinatal mental health (PMH) refers to mental well-being during pregnancy and the first year postpartum. During this period, women may experience perinatal mental health disorders, including depression, anxiety, and stress-related conditions. The occurrence of perinatal depression is estimated to reach up to 15.6% to 30% during pregnancy and 19.8% to 37% in the post-partum period (Atif et al., 2019; Waqas et al., 2022). These findings highlight the postpartum period as a particularly vulnerable time for the onset or exacerbation of mental health disorders. Another study found that

among postpartum women, approximately 13.7% to 76.0% experience postpartum blues (Rezaie-Keikhaie et al., 2020), while about 10%–20% develop postpartum depression (Amer et al., 2024; Manjula et al., 2024).

Untreated perinatal mental health disorders have been associated with preterm labor, reduced maternal quality of life, low birth weight, behavioral disorders in infants, and an increased risk of suicide (Choi et al., 2014; De Backer et al., 2024; Li et al., 2022; A. Smith et al., 2020; Yu et al., 2024). Postpartum mothers who experienced perinatal mental health disorders were found to have a 5.3% increased risk of fine motor developmental disorders in their infants (Daehn et al., 2022; Roy et al., 2022; Simcock et al., 2018). Suicide is the second leading cause of death for women in the postpartum period, causing 20% of mortality during the first year after birth (Van Niel & Payne, 2020). In Africa in 2018, they recommended significant changes in classifying suicide in pregnancy and up to 12 months postpartum as direct obstetric death (Howard & Khalifeh, 2020). The impact caused by PMH disorders can be reduced with the right treatment early (McNab S et al., 2022).

Unfortunately, many experienced midwives feel less confident in detecting and handling issues such as perinatal depression and anxiety, and have a vague understanding of their responsibilities in this aspect (Dubreucq et al., 2024). A study in Italy shows that most midwives have inadequate knowledge about perinatal depression, and only those with a good understanding feel confident in their practice (Ravaldi et al., 2024). Furthermore, a meta-analysis by Wang et al. (2022) found that psychological training significantly improved midwives' competence in providing perinatal mental health support. Despite the high incidence of PMH disorders and their serious impact on postpartum mothers and their babies, PMH remains a low priority and there are no specific policies in place in Indonesia. This gap prompted us to investigate how PMH cases are handled in Indonesia. This study aims to evaluate the readiness of midwives in handling postpartum mothers with PMH disorders.

## 2. Research Methods

### 2.1.Study Design

This study employed a mixed-methods convergent parallel design, in which quantitative and qualitative data were collected concurrently and analyzed independently, then integrated during interpretation. The quantitative component used a cross-sectional survey, while the qualitative component applied a qualitative descriptive approach to explore midwives' experiences and practices in managing postpartum perinatal mental health disorders. The study was conducted in eight primary health service centers in Mataram City, West Nusa Tenggara, Indonesia from December 2023 to January 2024.

### 2.2.Sample Method and Participants

Purposive sampling was used in this study. For the quantitative study, the inclusion criteria: midwives who were actively working at primary health service centers in Mataram City; had a minimum of one year of work experience; and were involved in maternal and postnatal care services. Midwives who were on leave during the data collection period or who did not provide informed consent were excluded. For the qualitative study, informants were purposively selected based on their roles and experience in postpartum and perinatal mental health services. The inclusion criteria included Maternal and Child Health managers, midwives, and mental health nurses who had direct experience in managing or coordinating postpartum mental health services and were willing to participate in in-depth interviews. Individuals with limited involvement in postpartum care or PMH-related services were excluded. A total of 102 midwives participated in the quantitative survey. In addition, six informants consisting of two Maternal and Child Health managers, three midwives, and one mental health nurse were interviewed for the qualitative component.

### 2.3.Data Collection

This study used a convergent parallel mixed-methods design, in which quantitative and qualitative data were collected concurrently, analyzed separately, and then integrated during the interpretation phase. In the quantitative phase, data were collected using a structured questionnaire distributed via Google Forms. The questionnaire measured respondents' characteristics (age, education level, and work experience), implementation of PMH screening (data assessment, screening examination, and risk classification), PMH training experience, and PMH management practices. Prior to data collection, the questionnaire was tested for validity and reliability among midwives with similar characteristics. Content validity was assessed through expert review, and construct validity was evaluated using item–total correlations, with all items demonstrating coefficients above the acceptable threshold. Reliability testing showed satisfactory internal consistency, with a Cronbach's alpha value exceeding 0.70 for all domains, indicating good reliability.

In the qualitative phase, data were collected through in-depth interviews using a semi-structured interview guide. The interviews aimed to explore follow-up evaluation practices, contextual factors influencing PMH services. The interview guide was developed based on relevant literature and quantitative findings, and its content validity was reviewed by experts in maternal and mental health. In-depth interviews were conducted face-to-face at the informants' respective health service centers in a private setting, with an average duration of 30–60 minutes. Written informed consent was obtained from all informants prior to the interviews, including permission to audio-record the discussions. Data in qualitative research is collected until saturation is reached, which is the point at which new information no longer emerges from additional interviews or observations

### 2.4.Statistical analysis

Quantitative data were analyzed using the Chi-square test with SPSS version 27. Qualitative data were analyzed using thematic analysis following Braun and Clarke's six-step framework, supported by NVivo Pro software. The analysis involved familiarization with the data, initial code generation, theme identification, theme review, theme definition, and report production. Triangulation was applied as a strategy to enhance the credibility (trustworthiness) of the qualitative findings, rather than as an analytical method. Source triangulation was conducted by comparing information obtained from key informants with that from supporting informants to validate interpretations and ensure consistency across data sources.

### 2.5.Ethics Considerations

This research has met the standards of research ethics and has been approved by the Research Ethics Committee of the Faculty of Public Health, Diponegoro University Semarang, before the research was conducted (No 571/EA/KEPK-FKM/2023).

## 3. Results and Discussion

### 3.1.Results

This study used mixed methods to measure midwives' preparedness in perinatal mental health care. Quantitative analysis included the influence of age, education, and training on screening implementation and classification. A qualitative approach further enriched these findings by exploring midwives' practical experience in the field.

**Table 1.** Respondents' Sociodemographic Characteristics

| Variabel | Handling PMH | | Total | P value | OR (CI) |
|---|---|---|---|---|---|
| | Yes f (%) | No f (%) | f (%) | | |
| **Age** | | | | 0.572 | 1.10 (0.32-3.84) |
| Early Adult ≤ 35 years old | 10 (14.1) | 61 (85.9) | 71 (100) | | |
| Late Adult > 35 years old | 4 (12.9) | 27 (87.9) | 31 (100) | | |
| **Educational Background** | | | | 0.180 | 1.18 (1.08-1.29) |
| Bachelor of Midwifery (Professional Program) | 0 (0.0) | 11 (100.0) | 11 (100) | | |
| Diploma in Midwifery | 14 (15.4) | 77 (84.6) | 91 (100) | | |
| **Data Assessment** | | | | 0.009 | 9.43 (1.18-75.30) |
| Yes | 13 (20.3) | 51 (79.7) | 38 (100) | | |
| No | 1 (2.6) | 37 (97.4) | 64 (100) | | |
| **Screening PMH** | | | | 0.001 | 14.30 (2.99-68.46) |
| Yes | 12 (31.6) | 26 (68.4) | 38 (100) | | |
| No | 2 (3.1) | 62 (96.9) | 64 (100) | | |
| **Screening Classification** | | | | 0.001 | 23.22 (5.64-95.53) |
| Yes | 11 (47.8) | 12 (52.2) | 23 (100) | | |
| No | 3 (3.8) | 76 (96.2) | 79 (100) | | |
| **Work Experience** | | | | 0.218 | 2.949 (0.61-14.06) |
| < Average (< 8 years) | 12 (16.9) | 59 (83.1) | 71 (100) | | |
| ≥ Average (≥ 8 years) | 2 (6.5) | 29 (93.5) | 31 (100) | | |
| **PMH Training** | | | | 0.639 | 1.165 (1.07-1.26) |
| Yes | 0 (0.0) | 3 (100) | 3 (100) | | |
| No | 14 (14.1) | 85 (85.9) | 99 (100) | | |

Majority midwives (86.27%) did not handle PMH appropriately. Respondents who most often do not provide PMH handling are respondents aged ≤ 35 years (85.9%), diploma midwifery program (84.6%), not conducting data assessment (97.4%), not conducting PMH screening examination (96.9%), not conducting PMH screening classification (96.2%), work experience below average (≥ 8 years) (83.1%), and who have never attended PMH training (85.9%). Age and educational background were not associated with midwives' proper handling of postpartum PMH. Early adults (≤35 years) and older midwives had a similar performance (p = 0.572; OR 1.11, 95% CI: 0.32–3.84), as did those who had a diploma and those with a professional bachelor's degree (p = 0.180). PMH training and work experience also were not related (p = 0.218, p = 0.639, respectively). In contrast, several practice-related factors showed statistically significant associations with PMH handling.

Respondents who conducted PMH data assessment (p = 0.009; OR 9.43, 95% CI: 1.18–75.30), PMH screening (p = 0.001; OR 14.31, 95% CI: 2.99–68.46), and screening classification (p = 0.001; OR 23.22, 95% CI: 5.64–95.53) were significantly more likely to handle PMH appropriately compared with those who did not **(See Table 1)**.

**Table 2.** Characteristics of Informants

| Name | Age (years) | Work Experience (years) | Education |
|---|---|---|---|
| P1 | 37 | 1 | Master of Nursing |
| P2 | 43 | 5 | D4 Midwifery Profession |
| P3 | 53 | 10 | D3 Midwifery |
| P4 | 55 | 31 | D3 Midwifery |
| P5 | 36 | 13 | D3 Midwifery |
| P6 | 36 | 2 | D3 Nursing |

**Table 2** shows that the informants for qualitative study were aged 36–55 years, with work experience ranging from 1 to 31 years. The highest educational level was a master's degree (S2), while the lowest was a diploma (D3). Thematic analysis highlighted referral collaboration as the main theme in the PMH management. This theme illustrates the processes midwives engage in when referring at-risk postpartum mothers for PMH. Referral practices included coordination with husbands and family members, securing informed consent before referring, and directing mothers to hospitals where psychiatric facilities were available. In addition, enhancing the effective collaboration with other healthcare providers, including mental health nurses (MHNs) and doctors, was the significance of the referral process.

Referrals are made to cases of PMH that are already at severe risk and cannot be handled at the health center. The referral coordination flow is carried out by midwives when conducting postpartum maternal examinations at the community health centers or during postpartum visits at home. Before making a referral, the midwife will coordinate with the nurse in charge of mental health at the community health centers, and PMH cases obtained are consulted with general practitioners. Furthermore, if the three health workers cannot handle it, a referral will be made to a hospital with a psychiatrist.

> *"...Together. So, from the midwife, it coordinates with the psychiatric section, and later with the FGD field. Focus on consulting with his doctor on how to follow up.*
> *existed in this region, we refer to the psychiatric. The mental hospital from Does it really need to be referred, or not? If it does arrive, but so far, if there is a reference, there is no ..." (P1)*
> *"Once being pregnant is already that; after giving birth is normal, huh..." (P3)*

In the case of PMH that has been directly taken to the hospital for monitoring evaluation after discharge from hospital treatment, it will be continued again by health workers at the community health centers. Monitoring of the health is carried out in the form of chronic drug administration and follow-up care, such as monitoring the condition of postpartum mothers and their babies according to the postpartum visit schedule. In addition, the referral process is also carried out through the consent of the postpartum mother's family.

## 3.2.Discussion

The findings of this study indicate that inadequate PMH management was more common among midwives aged ≤ 35 years, diploma midwifery program, limited work experience, lack of PMH screening implementation, and no prior PMH training. From our perspective, these characteristics reflect an early-career stage in which clinical exposure and decision-making confidence are still

developing, potentially limiting midwives' readiness to identify and manage complex conditions such as perinatal mental health problems. Previous studies support this interpretation, showing that younger age and shorter work experience are associated with lower service quality and clinical performance (Branquinho et al., 2022; Xiao et al., 2023). Insufficient work experience may hinder the development of practical skills and clinical judgment, particularly in detecting early signs of PMH disorders, which often present subtly during postpartum care (Prastyoningsih et al., 2022; Simanullang & Dioso, 2020).

According to Mohamed et al. (2024), age and education contribute significantly to experience accumulation, which in turn shapes professional competence. From a practical standpoint, we argue the limited exposure of younger or less-experienced midwives to PMH cases reduces their sensitivity to psychological symptoms, especially when mental health is not routinely emphasized in standard postnatal care. This situation is further exacerbated by the lack of PMH-specific training (Nwoke et al., 2023; Premji et al., 2021; Ravaldi et al., 2024). As a result, many health professionals remain unable to recognize symptoms of PMH disorder effectively (Cena et al., 2020).

Appropriate management of PMH disorders is a direct indicator of midwives' readiness to deal with postpartum perinatal mental health disorders, as it reflects their ability to detect, classify, and respond effectively. In this study, midwives who accurately conducted data assessment, screening, and classification demonstrated substantially higher odds of providing appropriate PMH management 9, 14, and 23-fold increases, respectively compared to those who did not. Unfortunately, the rates of adoption for PMH data assessment (37.25%), screening (37.26%) and classification (22.56%) were poor for the respondents. PMH screenings were not consistently performed due to the absence of specific program from community health center. In addition, midwives' busy schedules also pose a challenge for routine PMH screening. Previous studies have shown that barriers such as limited time, inadequate training and awareness among healthcare providers, underuse of screening tools, and the lack of routine protocols further compromised the effectiveness of these screenings (Harahap et al., 2024; Nwoke et al., 2023; Premji et al., 2021).

Good screening has a structured sequence which includes the subjective assessment of data of the screen-ee, risk-based screening, classification as low-, moderate-, or high-risk, and risk appropriate follow-up (ACOG, 2023; Grisbrook & Letourneau, 2020; Johnson et al., 2021). Failure to implement any of these steps disrupts the continuity of care and weakens the overall effectiveness of PMH management (Cantwell, 2021; Cena et al., 2020; Cummins et al., 2023). More than a technical task, screening is a major decision-making instrument facilitating early diagnosis, timely referrals, and midwives prominence in education, emotional support and collaboration with other disciplines leading to improved preparedness to address postpartum depression risk (Coates & Foureur, 2019; Dubreucq et al., 2024).

Classification of the screening results further links screening to actionable care by categorizing mothers into risk groups allowing for the prioritization of interventions, the escalation of referrals, and the allocation of resources (Al Ahbabi et al., 2024). Our findings suggest that varying classification criteria lead to poor management of PMH perhaps reflecting inadequate advice relating to post-screening actions. These deficiencies highlight an area where training is required to improve both procedural fidelity and clinical decision making amongst midwives.

This study highlights the importance of referral collaboration as a mechanism for addressing perinatal mental health (PMH), with midwives as central players in the detection of acute cases, the coordination of interprofessional decision-making, and the perpetuation of care across service levels. In line with the evidence, midwives are frontline providers who refer when PMH disorders surpass the scope of primary care, collaborating with mental health nurses, general practitioners, and psychiatric services in stepped-care models (WHO, 2022). Family participation, particularly in the process of obtaining informed consent, mirrors sociocultural realities and corroborates literature

indicating that family involvement supports acceptance of referrals and compliance with postpartum mental health care (Howard & Khalifeh, 2020; Noonan et al., 2021). In addition, continuity of care after hospital discharge with subsequent follow-up visits for medication monitoring at the community health center is compatible with contemporary continuity-of-care models that have been demonstrated to reduce risk of relapse and improve maternal outcomes (Carter et al., 2025; T. E. Smith et al., 2020).

This study also highlights the absence of a standardized referral system for postpartum PMH as a significant barrier to effective management. From the researchers' viewpoint, the lack of clear referral pathways creates uncertainty among midwives, particularly when managing cases that exceed their scope of practice. Without standardized guidelines, referral decisions may rely heavily on individual judgment rather than structured clinical protocols. Previous studies emphasize that an integrated and comprehensive referral system is essential for effective PMH management, supported by targeted training, health promotion, task distribution, and regular follow-up evaluations (Abrahams et al., 2022; Al-abri et al., 2023; WHO, 2022).

The findings of this study reveal that although midwives possess experiential knowledge in managing PMH cases, the absence of specific PMH referral guidelines limits the consistency and effectiveness of referrals. Evidence from Southeast Asia indicates that midwives play a crucial role in initiating internal referrals within the health system (Manarang et al., 2022). We argue that strengthening referral collaboration through clear referral flows, interprofessional coordination, and institutional support would significantly enhance the continuity of PMH care for postpartum mothers. Such improvements would also empower midwives to act confidently within referral systems, ensuring timely and appropriate mental health services. On the whole, these results confirm recent recommendations that structured referral pathways and well-functioning interprofessional collaboration are prerequisites for timely, integrated, and sustainable PMH care.

## 4. Conclusion

Midwives' readiness to manage perinatal mental health (PMH) among postpartum mothers remains suboptimal, particularly among those with limited work experience, insufficient training, and low implementation of PMH screening procedures. Strengthening PMH screening competencies through structured and continuous training programs is therefore essential to improve midwives' capacity to provide appropriate and effective care. This study has several limitations. First, the cross-sectional design limits the ability to establish causal relationships between midwives' characteristics and PMH management practices. Second, data were collected from a limited number of health service centers in one city, which may restrict the generalizability of the findings to other settings. Third, the use of self-reported questionnaires may have introduced reporting bias. In addition, the qualitative component involved a small number of informants, which may not fully capture the diversity of perspectives among health workers. Future research is recommended to employ longitudinal or interventional designs to assess the effectiveness of PMH training programs on midwives' knowledge, attitudes, and practices over time. Studies involving larger and more diverse settings, as well as the integration of implementation research approaches, are also needed to strengthen the evidence base for sustainable PMH screening and referral systems in maternal health services.

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