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First to Listen, Last to Be Trained: A Pathway Analysis of Midwives' Role in Perinatal Mental Health in Indonesia

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ABSTRACT

Background: Perinatal mental health disorders significantly contribute to maternal and neonatal morbidity, particularly in low- and middle-income countries (LMICs) such as Indonesia. Midwives, as frontline maternal healthcare providers, are uniquely positioned to screen for and support women experiencing mental health disorders. However, their involvement remains limited due to systemic, educational, and institutional barriers.

Purpose: This study aims to understand the factors influencing midwives' knowledge and utilization of perinatal mental health screening services in Indonesia.

Methods: A secondary analysis was conducted using cross-sectional data from an online survey of 300 midwives across Indonesia between June-August 2024. Variables included demographic characteristics, training experience, access to mental health resources, screening knowledge, and

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utilization behavior. Descriptive statistics and path analysis were used to examine direct and indirect influences on screening utilization.
Results: Despite an average of 15 years of clinical experience, only 9.7% of midwives had used mental health screening tools. Just 8.7% had received formal mental health training, and only one-third had access to relevant guidelines. Screening knowledge was significantly predicted by access to structured information sources ($\beta = 1.42$; $p < 0.001$) and directly influenced screening utilization ($\beta = 3.05$; $p < 0.001$). Indirect factors, such as duration of service or interest in training, had no significant effect. Public health outreach and structured training improved access to learning materials.
Conclusion: Despite strong interest among midwives, gaps in training, resources, and institutional support hinder effective mental health screening. Strengthening structured training programs and improving access to information are essential steps toward empowering midwives in perinatal mental health care. However, as most participants were from Western Indonesia, these findings should be interpreted with caution, and future studies should include broader geographic representation to better capture the national context

INTRODUCTION

WHO defines perinatal mental health as mental health status during pregnancy and one year after postpartum. In this period, one in five women experiences common mental disorders such as depression or anxiety that commonly observed in low- and middle-income countries (LMICs) [1]. In Indonesia, the burden of perinatal mental health issues remains high yet largely invisible. Recent studies in Indonesia reveal significant prevalence rates of perinatal mental health disorders among women. Common mental disorders (CMDs) affect 12.6% of pregnant women and 10.1% of postpartum mothers[2]. Perinatal depression rates are estimated at 7.9% prenatally and 16.4% postpartum [3].

Mental health disorders are a leading cause of morbidity among women during the perinatal period, contributing significantly to adverse maternal and neonatal outcomes if left undetected and untreated [4]. Mothers with these conditions are more likely to identify negative emotions and less accurate in recognizing positive emotions in infant faces [5]. This cognitive bias can disrupt normal infant engagement with the mother, potentially impairing cognitive and emotional development [6]. Postpartum stress is associated with poor developmental trajectories, growth deficits, and impaired language and cognitive development in infants[7]. It also negatively affects breastfeeding efficacy and maternal-fetal attachment [7]. When left unaddressed, perinatal mental health problems can result in adverse outcomes such as maternal mortality, poor obstetric outcomes, impaired mother-infant bonding, and developmental delays in children[8].

Despite growing recognition of the importance of perinatal mental health, mental health screening in low- and middle-income countries (LMICs), including Indonesia, remains suboptimal. Barriers such as limited awareness, inadequate training, and lack of integration between mental health and maternal services contribute to this gap[9], [10]. One of the health professionals that can perform perinatal mental health screening is a midwife.

Midwives have a unique position in providing perinatal mental health services within the community because they are often the first and most continues point of contact for women throughout pregnancy, childbirth, and the postpartum period [11], [12]. Midwives have the closest relationship to women during perinatal period that enable them to screen any women's psychological discomfort [13]. As frontline providers who accompany women throughout pregnancy, birth, and postpartum, midwives are often the

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most accessible health professionals for mothers[14]. Internationally, frameworks such as the WHO's Mental Health Gap Action Programme (mhGAP) and the International Confederation of Midwives (ICM) endorse the role of midwives in perinatal mental health, including identifying, screening, referring, and supporting women with mental health concerns [15], [16].

This study is conceptually grounded in the WHO Mental Health Gap Action programme (mhGAP), which provides evidence-based guidance for integrating mental health services into primary care, particularly in low- and middle-income countries (WHO, 2022). The mhGAP framework emphasizes task-sharing with non-specialist health workers, including midwives, for early identification, basic psychosocial support, and referral of individuals with mental health conditions. In parallel, the International Confederation of Midwives (ICM) Global Standards for Midwifery Education outline competencies for midwives to provide holistic care, including mental health promotion, prevention, and basic management during the perinatal period. In such a model, midwives serve as the first point of contact for perinatal women, conducting routine mental health screening, delivering low-intensity psychosocial interventions, and ensuring timely referral to specialized care when necessary

However, studies indicate that midwives often lack confidence, skills, and knowledge in assessing and managing perinatal mental health issues beyond depression and anxiety[12], [17]. Many feel uncomfortable discussing sensitive topics like sexual abuse or psychosis, leading to selective screening approaches [12]. Barriers to effective screening include insufficient training, unclear scope of practice, time constraints, and lack of clear referral pathways [18][19]. Therefore, midwives require continuous professional development and support systems to effectively care for women with perinatal mental health problems [20].

To our knowledge, this is the first empirical study in Indonesia that systematically investigates midwifery services regarding perinatal mental health screening. Despite the growing recognition of perinatal mental health as a critical issue, evidence shows that midwives in LMICs including Indonesia rarely receive structured training, have limited access to guidelines, and lack confidence in screening beyond depression and anxiety [12], [18], [21]. Some studies also highlight that midwives globally face similar barriers such as unclear referral pathways, insufficient training, and low confidence in managing psychosocial concerns [18], [22]. Those findings underscore a knowledge and practice gap where midwives' unique role as frontline providers is not matched by adequate institutional support.

By examining how midwives currently engage with perinatal mental health services, this research seeks to inform future integration strategies, capacity-building efforts, and policy directions to strengthen maternal mental health care in Indonesia. This study aims to investigate the underlying factors that influence midwives' knowledge and implementation of perinatal mental health screening in Indonesia, and to identify evidence-based strategies for enhancing their capacity and role in maternal mental health care.

METHOD

Study Design

This study employed a cross-sectional design, drawing on data from an online survey of midwives in Indonesia. For the present secondary analysis, we examined factors associated with midwives' knowledge and utilization of perinatal mental health screening services.

Participants and Setting

The original online survey was conducted between June-September, 2024 and involved midwives working across various health service settings in Indonesia, including public health centers (*Puskesmas*), hospitals, and independent midwifery practices. The inclusion criteria required participants to be currently employed midwives working in clinical maternal or reproductive health services and residing in Indonesia. Midwives who had not yet graduated from at least a diploma-level midwifery program were excluded from participation.

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Sampling Technique and Sample Size

Participants were recruited through purposive sampling to ensure representation from diverse health facilities and geographic regions. Based on an a priori power analysis using G*Power version 3.1, a minimum sample size of 300 midwives was targeted. The analysis assumed an alpha level of 0.05, a power of 0.95, and a medium effect size ($f^2 = 0.15$) suitable for path analysis models involving multiple predictors. This sample size was considered adequate to detect statistically significant effects with high reliability. The secondary analysis presented in this study utilized these anonymized data to examine factors associated with midwives' screening knowledge and utilization of perinatal mental health screening.

Data Collection and Instruments

Quantitative data were collected through a structured online questionnaire covering variables such as socio-demographic characteristics, participation in mental health screening training, access to screening resources, clinical experience, interest in training, exposure to health office initiatives, knowledge of mental health screening, and actual utilization in practice. The survey was distributed through professional networks, midwifery associations, and social media platforms, ensuring broad outreach across Indonesia. All participants provided informed consent prior to participation. The questionnaire items used in this study were factual questions capturing sociodemographic characteristics, work experience, availability of resources, training history, and actual practices. Because these questions asked about objective facts and experiences rather than latent constructs such as attitudes, perceptions, or psychological traits, traditional psychometric validation was not applicable. To ensure rigor, however, the instrument did undergo content validation through expert review (midwifery lecturers and mental health specialists) to confirm face validity, clarity, and cultural appropriateness. We also conducted a pilot test with a small group of midwives to check comprehension and response flow. This study was a secondary analysis of data obtained from an online survey on midwives' experiences with perinatal mental health services in Indonesia. Ethical approval for this secondary analysis was obtained from the Universitas Kusuma Husada Surakarta under the number: No. 2998/UKH.L.02/EC/VIII/2025. All data were anonymized prior to analysis, and no personally identifiable information was used.

Statistical Analysis

Univariate analysis, bivariate analysis, and path analysis used SPSS version 20.0 and STATA version 18.0. Univariate analysis was used to describe sociodemographic characteristics, training background, and service experience. Bivariate analysis (chi-square and t-test) examined initial associations between independent and dependent variables. To assess the structural relationship among variables. We applied path analysis, which allowed simultaneous estimation of both direct and indirect effects on screening utilization.

Path analysis was performed using regression-based modelling, which is appropriate for testing directional relationships among categorical and continuous variables in large samples. This approach provides log-likelihood and pseudo-R^2 statistics rather than SEM fit indices (CF9, TLI, RMSEA). This approach was chosen because it is well suited for testing theoretically grounded models of behavioral health service variables. Model fit was evaluated using log-likelihood estimation and confidence intervals for path coefficients, ensuring both precision and robustness of the estimates. Effect sizes and 95% confidence intervals (CI) were reported for each pathway to enhance interpretability and reproducibility. To enhance transferability, we provided detailed descriptions of the sample, recruitment procedures, and measurement instruments so that the study context can be compared to other low- and middle-income countries (LMICs).

RESULTS AND DISCUSSION

This study provides insight into factors influencing midwives' engagement with perinatal mental health screening services in Indonesia. Our finding fills the gap and identifies which factors that can improve midwifery participation in mental health screening practices. Table 1 shows the demographic profile of the 300 participating midwives. The mean age was 38.3 years (SD = 10.4), and most held a Diploma (35.7%) or an Applied Bachelor degree (26.3%), while only a small proportion had advanced qualifications such as a Master's or Doctorate. Most midwives practiced in urban areas (61.0%) and were employed in community health centers (51.3%) or hospitals (28.0%). The majority were from West

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Indonesia (66.3%) and worked in the public sector (71.7%). In terms of income, nearly half earned at the minimum wage (47.0%), with 21.3% below and 31.7% above.

Table 1. Demographic characteristic of respondents (n=300)

Variables	N/Mean±SD	%
Age	38.33 ± 10.41	
Educational Level		
Diploma (D3)	107	35.7
Applied Bachelor (D4)	79	26.3
Bachelor	23	7.7
Professional	65	21.7
Master	25	8.3
Doctorate	1	0.3
Work Location		
Rural	117	39.0
Urban	183	61.0
Health Facility		
Private Midwifery Clinic	43	14.3
Hospital	84	28.0
Primary Clinic	19	6.3
Community Health Center	154	51.3
Indonesian Region		
West Indonesia	199	66.3
Central Indonesia	77	25.7
East Indonesia	23	7.7
Institution Type		
Public	215	71.7
Private	85	28.3
Salary		
<Minimum wage	64	21.3
=minimum wage	141	47
>minimum wage	95	31.7

Table 2 shows midwifery services and experience in perinatal mental health care. The participating midwives had an average of 15.22 years of professional experience (SD ± 10.21) and had been engaged in midwifery services for an average of 18.02 minutes (SD ± 11.22). Despite their substantial clinical backgrounds, direct experience in treating patients with mental health disorders remained limited. Only 2.3% reported having ever treated a patient with a mental health condition, while 33.3% were unsure, and the majority (64.3%) stated they had never done so.

Only 34.3% of midwives reported the availability of mental health guidelines in their workplace, and just 33.3% of those used them. Formal mental health training was rare (8.7%), and only 21.7% were aware of mental health screening tools. Actual use of screening tools was very low, with only 9.7% having ever used them. Public health outreach was minimal, and most midwives (68.3%) had not received any information on mental health. Despite this, interest in further training was high, with 93.0% expressing a desire to learn more. Most midwives relied on informal sources such as the internet or peer discussions, which may lack standardization or evidence-based rigor. This underscores the urgent need for more accessible, contextually relevant, and evidence-based training materials to support midwives in delivering effective perinatal mental health care[23]. Despite this, nearly all midwives expressed strong interest in attending future mental health training session which indicate the eagerness to learn coming from midwives itself.

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Table 2. Midwifery services, experience, and preference about mental health services (n=300)

Variables	N/Mean±SD	%
Years of experience	15.22 ± 10.21	
Duration of Midwifery service	18.02 ± 11.22	
Experience of treating patient with mental health disorder	7	2.3
Never	100	33.3
Don't know	193	64.3
Yes, ever		
Guidelines availability		
Don't know	43	14.3
No	154	51.3
Yes	103	34.3
Guidelines utilization		
Don't know	94	31.3
No	106	35.3
Yes	100	33.3
Mental Health Facilitator Training	274	91.3
No	26	8.7
Yes		
Training experience materials		
No	274	91.3
Yes, which are		
Hypno-birthing	3	1.0
Anxiety and stress management	3	1.0
Baby blues	4	1.3
Early screening	2	0.7
Mental health	7	2.3
Mental health program in primary	1	0.3
care	6	2.0
Lecture		
Screening Tool Knowledge		
Don't know	235	78.3
know	65	21.7
Source of screening tools knowledge	205	68.3
Did not receive the information	44	14.7
Internet	25	8.3
Lecturer	18	6.0
Other midwife	8	2.7
Public health office		
Public health office outreach about mental health services by health professionals	144 (0)	48
Don't know	140 (1)	46.7
No	16 (2)	5.3
Yes		
Screening utilization		
No	271	90.3
yes	29	9.7

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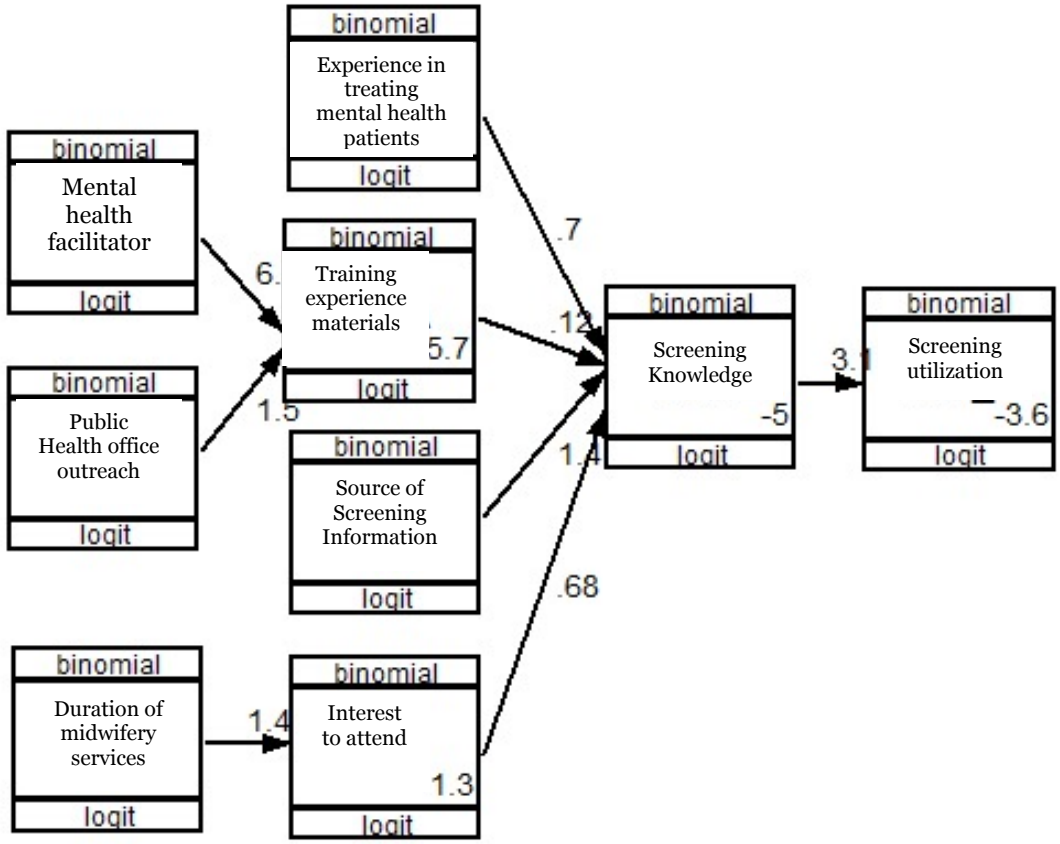
Interest to attend information session about midwifery mental health services	17	5.7
Don't know	4	1.3
No	279	93
Yes		



Picture 1. Path Analysis of Screening Utilization

Figure 1 shows path analysis of factors influencing perinatal mental health screening utilization among midwives in Indonesia. Numbers shown are standardized path coefficients (β). Solid lines represent significant pathways ($p < 0.05$); dashed lines represent non-significant pathways. The model demonstrated acceptable fit (N = 300, log-likelihood = –261.01).

Table 3. Path analysis model of factors influencing screening knowledge and utilization among midwives in Indonesia (N=300)

Dependent Variables		Independent Variables	b	CI 95%		P
				Lower Limit	Upper Limit	
indirect effect						
Training experience material	←	Mental Health Facilitator Training	6.54	4.88	8.19	<0.001

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	←	Public health office outreach about mental health services	1.52	0.08	2.95	0.038
Interest to attend information session	←	Duration of midwifery services	1.40	0.40	2.39	0.006
Screening Knowledge	←	Training experience	0.11	-0.09	0.32	0.269
	←	Experience of treating patient with mental health disorder	0.70	-0.04	1.44	0.065
	←	Source of screening tools knowledge	1.42	1.06	1.79	< 0.001
	←	Interest to attend information session	0.67	-0.49	1.84	0.256
Direct effect						
Screening Utilization	←	Screening Knowledge	3.05	2.09	4.00	< 0.001
N observation= 300						
Log likelihood= - 261.01						

Table 3 summarizes the pathway model. The path model demonstrated acceptable stability with a log likelihood of -261.01 (N=300). The results indicate that structured information sources significantly increased screening knowledge (β = 1.42; 95% CI 1.06–1.79; p < 0.001), which in turn strongly predicted screening utilization (β = 3.05; 95% CI 2.09–4.00; p < 0.001). Standardized path coefficients (β), confidence intervals, and p-values are reported in Table 3.

Indirect Effects

Participation in screening training showed a strong and statistically significant association with access to training experience materials (β = 6.54; 95% CI = 4.88–8.19; p < 0.001). Similarly, socialization programs conducted by the local health office were significantly associated with training experience materials (β = 1.52; 95% CI = 0.08–2.95; p = 0.038).

In addition, the duration of patient examination was positively associated with interest in attending further training (β = 1.40; 95% CI = 0.40–2.39; p = 0.006), suggesting that midwives who spend more time with patients tend to show greater motivation for professional development.

However, the association between training materials and knowledge of screening was not statistically significant (β = 0.11; 95% CI = −0.09–0.32; p = 0.269), nor was the association between patient-handling experience and knowledge (β = 0.70; 95% CI = −0.04–1.44; p = 0.065). Similarly, the relationship between interest in training and knowledge was not significant (β = 0.67; 95% CI = −0.49–1.84; p = 0.256).

On the other hand, the source of screening information demonstrated a significant positive relationship with screening knowledge (β = 1.42; 95% CI = 1.06–1.79; p < 0.001), indicating that access to reliable and

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structured information plays a key role in enhancing midwives' understanding of mental health screening practices.

Direct Effect

Knowledge of screening exhibited a strong and statistically significant direct effect on the utilization of mental health screening ($\beta = 3.05$; 95% CI = 2.09–4.00; $p < 0.001$). This finding suggests that midwives with higher screening knowledge are more likely to incorporate screening into their routine clinical services. The model showed good overall fit, with a log-likelihood of −261.01 based on 300 observations.

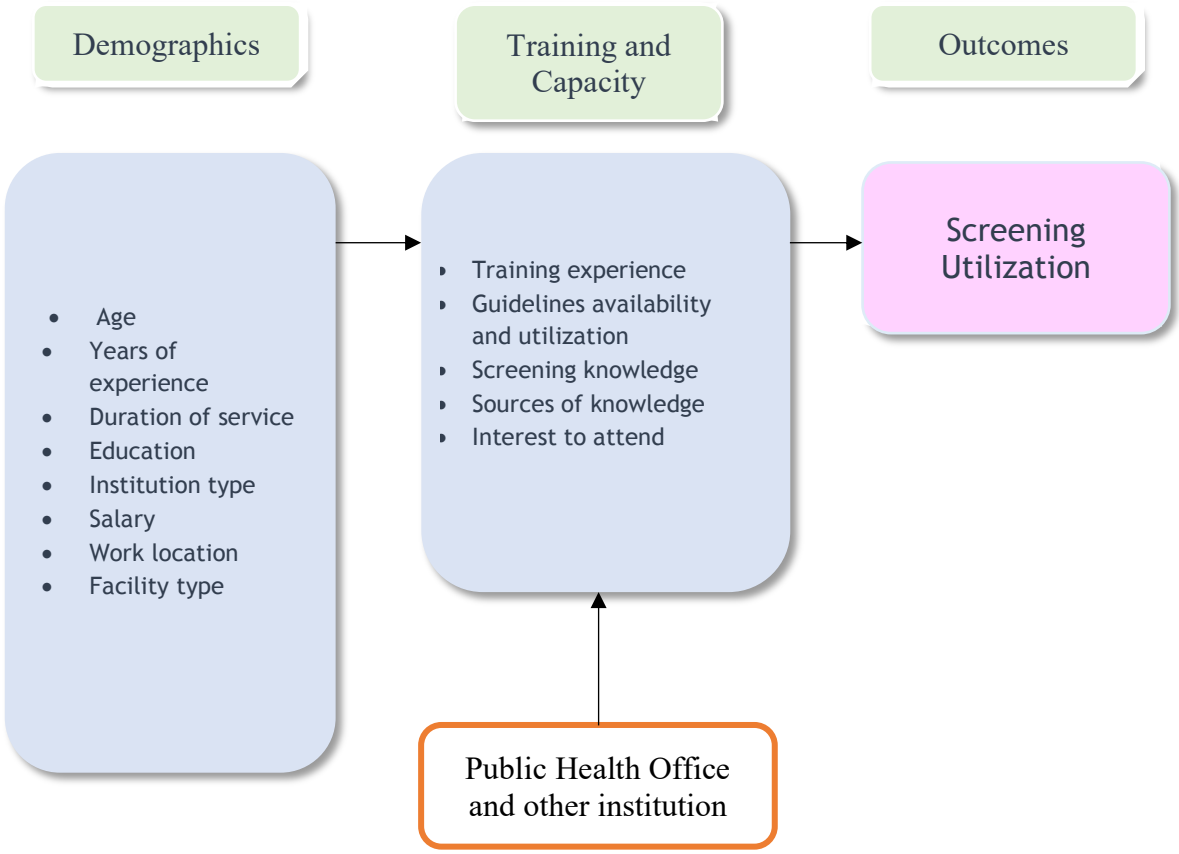

Figure 2. Conceptual Framework of Factors Influencing Mental Health Screening Utilization Among Midwives

Participation in formal training on mental health screening is a crucial determinant of access to relevant mental health materials, with a strong and statistically significant association ($\beta = 6.54$; $p < 0.001$). This suggest that structured training initiatives that experienced by respondents such as type of perinatal mental health disorders, stress management, hypnobirthing, early detection, mental health program in primary health care, not only improve immediate knowledge but also enhance access to practical implementation. This study in line with previous finding that such training can strengthen midwifery care in early diagnosis and treatment of perinatal mental health disorders [24]. More structured and targeted training programs can be an actionable tool to help midwives improve their capability[25] .

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Our findings demonstrate that mental health training was the strongest predictor of screening utilization among midwives. The result is unsurprising since structured training directly equips midwives with the knowledge, confidence, and practical skills to administer perinatal mental health screening tools. Previous study showed that without targeted training, midwives often feel uncertain about their role in addressing psychological concerns and may avoid screening for perinatal mental health problems [16], [19]. In the Indonesian context, this relationship may also reflect broader system-level barriers where mental health remains under-prioritized in maternal health services. Consequently, midwives' ability to screen is disproportionately shaped by whether they have received specific mental health training. This underscores a structural gap, without systemic policies that embed perinatal mental health into midwifery education and continuing professional development, screening will remain ad hoc and dependent on individual exposure and willingness, rather than institutional and national standards.

Additionally, public health office's (*Dinas Kesehatan*) outreach also positively contributed to midwives' exposure to training materials ($\beta = 1.52$; $p = 0.038$), highlighting the importance of decentralized, community-level professional by stakeholder to hold the initiatives. These findings are in line with previous research that emphasizes the need for stakeholder and continuous capacity-building to strengthen midwives' role in mental health care [19], [20]

Furthermore, the positive association between the duration of patient examination and interest in attending further training ($\beta = 1.40$; $p = 0.006$) may reflect a growing awareness among midwives that time spent engaging with patients offers valuable opportunities for psychosocial assessment, motivating them to seek additional training. This finding aligns with literature suggesting that personal engagement with patients fosters clinical curiosity and professional development [26].

Interestingly, several hypothesized indirect pathways to screening knowledge such as access to training materials, patient-handling experience, and interest in training, did not reach statistical significance. Theories of experiential learning emphasize that knowledge acquisition is more effective when learners are actively engaged through experiential learning, simulation, or mentorship rather than relying solely on self-directed reading[27]. This finding suggests that simply providing access to training materials, without structured or experiential learning, may not be sufficient to enhance midwives' knowledge.

In this study, occasional experience in handling patients with mental health conditions is unlikely to build systematic competence in perinatal mental health screening. Moreover, although most midwives expressed strong interest in training, this intention alone did not translate into knowledge improvements. These results align with previous studies indicating that passive exposure or personal motivation must be reinforced with formal contextually adapted and active training approaches in order to effectively improve screening competencies [28], [29], [30]. This underscores the need for sustainable professional development regarding skill-based learning opportunities about perinatal mental health for midwives.

These findings are consistent with previous research which suggests that access to training materials or interest in training, while important, are not sufficient to improve perinatal mental health screening knowledge. For example, Evans et al [18] , reported that midwives often lack confidence in addressing mental health issues and require contextually relevant, experiential training to build the skills needed for effective screening and support. The RAPID-2 programme emphasized that passive access to information must be accompanied by active learning strategies, mentorship, and integration into practice to provide measurable improvements in knowledge and care quality [31].

In contrast, the source of information was a significant predictor of screening knowledge ($\beta = 1.42$; $p < 0.001$), suggesting that exposure to structured, evidence-based, and possibly formal channels of information has a more profound impact on midwives' understanding than informal or experiential learning alone. Our findings align with evidence from the mPareshan project in Pakistan-using mhGAP-IG framework which demonstrated that structured, evidence-based, and contextually adapted training programs, significantly improved mental health knowledge and competencies among frontline workers [32]. Their study use role-play, group discussion which based on cultural context (cultural norms and relevant case scenarios) which significantly improved post-training. Meanwhile, in this study, midwife receive such information from the internet, lecturer, other midwife, and public health office. This

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underscores the critical role of reliable communication pathways and resource dissemination in improving mental health competencies among frontline providers.

Importantly, knowledge of mental health screening had a strong direct effect on screening utilization ($\beta = 3.05$; $p < 0.001$). This highlights the translational value of knowledge that midwives who understand mental health screening concepts are significantly more likely to incorporate them into their clinical practice. This result supports the global consensus that equipping midwives with mental health knowledge is a key strategy to bridge the treatment gap, particularly in LMICs like Indonesia where specialized mental health providers are limited [4], [8].

Despite these limitations, the findings should not be seen as barriers, instead this finding highlight practical opportunities for improvement. First, midwifery education programs could integrate perinatal mental health modules into pre-service curricula which ensuring all graduates acquire standardized competencies. Secondly, the ministry of health, professional associations should establish standardized, competency-based continuing professional development (CPD) programs with interactive method, such as case-based discussions and role-playing rather than passive information sharing. Third, simple and validated tools should be made available and accessible for midwife to encourage routine use. Fourth, partnerships with mental health professionals can strengthen referral pathways and reduce midwives difficulties when facing women with complex mental health problems. Finally, to reduce geographic disparities, targeted investments are needed in under-resourced areas including digital training platforms and regionally adapted guidelines.

This study has several limitations. First, the data were mostly collected from midwives located in the western part of Indonesia, resulting in underrepresentation of those from central and eastern regions, particularly from very remote or rural areas. Consequently, the findings may not fully capture the perspectives and experiences of midwives working in geographically isolated communities with limited infrastructure. While the results provide important insights into midwives' engagement with perinatal mental health screening, they should be interpreted as more representative of urban and western Indonesian settings rather than the entire country. Future research with purposive sampling or cluster sampling is recommended to ensure that the diversity of midwifery practice regarding perinatal mental health care is fully captured.

Second, the use of an online survey may have excluded participants with poor internet access or limited digital literacy, introducing selection bias and limiting the generalizability of the results. Third, the reliance on self-reported data may be subject to recall bias or social desirability bias, potentially affecting the accuracy of responses regarding training, guideline use, and screening practices. Finally, the cross-sectional design restricts the ability to infer causality between variables. In conclusion, this study underscores the central role of midwives in addressing perinatal mental health and highlights the need for more than just training. Effective interventions should combine accessible, high-quality learning resources, supportive institutional leadership, and a clear policy that integrates mental health into routine maternal care.

CONCLUSION

This study offers a closer look at the realities of how midwives in Indonesia contribute to perinatal mental health screening. Midwives are often the first-and sometimes only-health professionals to walk alongside women through perinatal journey. This study found that while midwives may express strong interest in mental health training and often have years of experience caring for women, these factors do not automatically lead to improved screening utilization. Participation in structured, formal training programs, tailored to local needs, supported by stakeholders and institutions can recognize the vital role of midwives in this matter. With the right training, resources, and support, midwives can become not only caregivers, but also frontline advocates for maternal mental health.

Author Contributions

Rufidah Maulina; Conceptualization; Data curation; Formal analysis; original draft. Siti Khuzaiyah: Investigation, Supervision, Methodology. Agustina Catur S: Investigation, Supervision. Atriany Nilam

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Sari: Funding acquisition; Project administration; Resources; Validation. Revi Gama: Project administration; Resources; Validation. Nurul Jannatul; Reviewing and Editing. Siti Nurhidayati; Reviewing and Editing. Luluk Fajria Maulida; Reviewing and Editing. Elsa Tursina; Software, Visualization, Methodology.

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