

RESEARCH ARTICLE

Cross-Cultural Adaptation and Preliminary Psychometric Evaluation of the Indonesian Antenatal Risk Questionnaire

Siti Rafika Putri^{1*}, Bambang Budi Rahardjo², Ari Yuniastuti³

¹Faculty of Medicine, Universitas Negeri Semarang, Semarang, Indonesia

²Faculty of Medicine, Universitas Negeri Semarang, Semarang, Indonesia

³Faculty of Medicine, Universitas Negeri Semarang, Semarang, Indonesia

Correspondence: Siti Rafika Putri Email: sitirafikaputri06@gmail.com

ARTICLE HISTORY

Received: 13 March 2026

Revised: 13 June 2026

Accepted: 05 August 2026

Published: 19 August 2026

ARTICLE IDENTIFIERS

Volume 9 - Issue 8 - 2026

Pages: 1624-1635

DOI: [10.56338/mppki.v9i8.10669](https://doi.org/10.56338/mppki.v9i8.10669)

ABSTRACT

Introduction: Perinatal depression affects the health of mothers, children, and families. One approach to preventing postpartum depression is to screen for psychosocial risk factors as early in pregnancy as feasible. The multidimensional Antenatal Risk Questionnaire (ANRQ) was developed to identify psychosocial risk factors during pregnancy. This study undertook the cross-cultural adaptation and initial psychometric testing of the ANRQ among pregnant women in Indonesia.

Methods: A methodological study was conducted. A three-round Delphi review involving nine experts was undertaken, together with forward translation, back-translation, and pilot testing. Content validity was assessed using the item-level Content Validity Index (I-CVI) and scale-level Content Validity Index (S-CVI). To assess construct validity, ANRQ scores were compared among women whose risk of depressive symptoms was classified as high risk and low risk using an EPDS-based categorisation method. Cronbach's alpha was used to assess internal consistency, and the intraclass correlation coefficient (ICC) was used to assess test-retest reliability over a two-week interval. Ninety-three pregnant women were recruited from antenatal care facilities in Bogor Regency, Indonesia, for the initial psychometric evaluation.

Results: The Indonesian version of the ANRQ showed preliminary evidence of high content validity in the study population (I-CVI = 0.89–1.00; S-CVI/Ave = 0.983; S-CVI/UA = 0.85). Known-groups validity testing showed significantly higher ANRQ scores among pregnant women classified as being at high risk of depressive symptoms according to EPDS scores than among low-risk participants ($p < 0.001$). Internal consistency was good (Cronbach's alpha = 0.85), and test-retest reliability showed good temporal stability (ICC = 0.834, 95% CI: 0.631–0.931; $p < 0.001$).

Conclusion: The Indonesian version of the ANRQ demonstrated preliminary psychometric evidence; however, further validation is required before broader implementation.

Keywords: Depression; Pregnancy; Psychosocial Risk; Screening

INTRODUCTION

Women are at increased risk of mental health problems, including depression and anxiety, during pregnancy because of the complex biological, psychological, and social changes involved (1). Global estimates indicate that approximately 26.3% of pregnant women, 28.5% of postpartum women, and 27.6% of women across the perinatal period experience depression (2). In Indonesia, depression has been reported among 7.9% of pregnant women and 5.9% of postpartum women (3). Psychosocial risk factors include a history of mental illness, high stress levels, limited social support, family conflict, and traumatic experiences. These factors may adversely affect maternal and child health and are associated with preterm birth, low birth weight, and developmental problems in children (2).

Perinatal mental health problems are often not identified sufficiently early by antenatal care providers, particularly in low-income settings (4). Effective screening can identify women who may benefit from timely intervention to prevent more severe mental disorders or postpartum depression (5). Early psychosocial screening can improve detection and facilitate timely support, potentially reducing pregnancy complications and adverse outcomes for mothers and infants (6).

The present study was informed by the biopsychosocial model of maternal mental health, which proposes that psychological outcomes during pregnancy arise from interactions among biological vulnerabilities, psychological characteristics, and social and environmental influences. Within this framework, previous mental health disorders, stressful life events, limited social support, relationship difficulties, anxiety-related personality traits, and adverse childhood experiences have consistently been associated with antenatal and postpartum depression (7). Comprehensive psychosocial assessment during pregnancy should therefore evaluate multidimensional risk factors in addition to current depressive symptoms.

Despite recognition of the importance of early detection, standardised psychosocial screening remains limited in many settings, including Indonesia. Available instruments often focus only on depressive symptoms, such as the EPDS (8), and may not assess the broader psychosocial factors that influence antenatal mental health. This gap is particularly important in Indonesia, where no standardised perinatal psychosocial-risk screening instrument has yet been linguistically and culturally adapted and psychometrically evaluated for the local context (9).

The Edinburgh Postnatal Depression Scale (EPDS) is widely used to screen for current depressive symptoms during the perinatal period; however, it does not comprehensively assess the broader psychosocial factors associated with maternal mental health outcomes. The Antenatal Risk Questionnaire (ANRQ) was developed to support preventive, risk-oriented assessment by identifying multidimensional psychosocial factors that may increase vulnerability to antenatal and postnatal psychological disorders (10).

The Antenatal Risk Questionnaire is a psychosocial screening instrument designed to assess perinatal risk factors such as social support, mental health history, traumatic experiences, domestic violence, and other life stressors associated with mood or anxiety disorders during and after pregnancy. Previous studies have reported good validity and reliability in clinical and community settings. Its multidimensional structure allows a broader assessment of psychosocial risk than measures focused on depression or anxiety alone (10). The ANRQ has also been reported to facilitate early identification of psychological risk factors among pregnant women, potentially enabling earlier intervention (11).

Although the ANRQ has been validated in several countries, including Australia and Türkiye (12), no psychometrically evaluated Indonesian adaptation is currently available. Without a culturally and linguistically adapted instrument, psychosocial-risk screening may fail to identify some women at elevated risk. This gap supports the need to adapt the instrument and evaluate its validity and reliability among pregnant women in Indonesia (13).

The ANRQ has shown promising psychometric performance in several populations. The original Australian studies reported satisfactory predictive utility for identifying women at increased risk of perinatal mental health problems. A Turkish adaptation also showed satisfactory content validity, construct validity, and reliability (12). Nevertheless, psychometric findings from one cultural context should not be generalised automatically to another. Cultural values, family relationships, attitudes towards mental health, partner support, and willingness to disclose traumatic experiences may influence how psychosocial risk factors are interpreted and reported.

Cross-cultural adaptation involves more than language translation. Wording and culturally appropriate terminology must preserve each item's conceptual meaning and ensure that respondents understand the questionnaire as intended. Without a systematic adaptation process, respondents may misinterpret items, reducing the reliability and validity of the assessment (12). Sociocultural factors in Indonesia, including patterns of emotional expression and mental health stigma, must also be considered. Cultural adaptation is therefore essential to ensure that the screening instrument yields relevant and meaningful results in research and clinical practice.

Adapting the ANRQ to the Indonesian context is particularly important because psychosocial experiences during pregnancy are strongly shaped by local cultural and family settings. Collectivist family systems, expectations of parenthood, partner involvement, financial dependence, and cultural norms surrounding emotional expression may influence how pregnant women perceive and report psychosocial difficulties (3). Mental health stigma also remains prevalent in Indonesia. Some women may be reluctant to discuss emotional distress, family conflict, previous trauma, or intimate partner violence because of concerns about social judgement, family expectations, or effects on their relationships (9). Translation alone is therefore insufficient; a culturally adapted questionnaire is needed to ensure that each item remains relevant, clear, and acceptable to pregnant women in Indonesia.

Against this background, the study aimed to translate and culturally adapt the Antenatal Risk Questionnaire into Indonesian; assess content validity through expert evaluation; examine preliminary construct validity using a known-groups comparison; and assess internal consistency and test-retest reliability among pregnant women in Indonesia.

METHODS

Study Design

This methodological psychometric validation study used a cross-sectional design to translate, culturally adapt, and evaluate the psychometric properties of the Indonesian version of the Antenatal Risk Questionnaire (ANRQ). The study was conducted between January and February 2026. The adaptation process included permission to use the instrument, forward translation, back-translation, expert review, pilot testing, and psychometric evaluation.

Participants and Sample

Participants were recruited consecutively from local antenatal care providers during the study period. Eligible pregnant women were approached by local antenatal care providers and invited to participate. Women who met the inclusion criteria and provided written informed consent were enrolled until the required sample size was reached. The target population comprised pregnant women living in Bojong Gede Village, Bogor Regency, Indonesia.

Women were eligible if they were willing to participate and able to read, understand, and complete the questionnaire independently without assistance to read and answer the questionnaire, or who did not complete the questionnaire, were excluded. No assistance was provided in interpreting or selecting responses to questionnaire items, to ensure that responses reflected participants own understanding of the translated instrument.

The sample size was selected to support the preliminary psychometric evaluation, including content validity, known-groups validity, internal consistency, and test–retest reliability. Sample sizes of 50–100 participants have been used in preliminary translation and cross-cultural adaptation studies, particularly for assessments of known-groups validity, content validity, internal consistency, and test–retest reliability (14). Accordingly, 93 pregnant women were recruited for the psychometric evaluation.

Study Setting

The study was conducted in Bojong Gede Village, Bogor Regency, Indonesia.

Measures

The primary instrument was the Antenatal Risk Questionnaire (ANRQ), which screens for psychosocial risk factors for perinatal depression. The ANRQ comprises 13 items covering domains such as a history of mental health disorders, emotional support from a partner, stressful life events, anxiety-prone characteristics, childhood abuse, and emotional support from caregivers. Psychosocial risk levels are identified using cumulative scores derived from the response options.

The Edinburgh Postnatal Depression Scale (EPDS) was also used to assess depressive symptoms among pregnant women. Sociodemographic variables included age, parity, education level, employment status, gestational age, ethnicity, and history of mental illness.

The adaptation process comprised forward translation, back-translation, expert review using the Delphi method, pilot testing, and psychometric evaluation to establish semantic, conceptual, and cultural equivalence between the original and Indonesian versions of the instrument.

Data Collection and Cross-Cultural Adaptation

Before data collection, ethical approval and permission from the original instrument developer were obtained. All eligible participants received information about the study objectives and procedures, the voluntary nature of participation, potential benefits and risks, the confidential handling of personal data, and their rights before providing written informed consent.

Participants were informed that participation was voluntary and that they could decline or withdraw at any time without penalty or adverse consequences. No personally identifying information was collected, and questionnaire responses were recorded anonymously to protect confidentiality and privacy. Only the research team had access to the data, which were used solely for research purposes.

Eligible pregnant women completed paper-based Indonesian versions of the ANRQ and EPDS, together with a sociodemographic questionnaire. The questionnaire comprised four sections: eligibility screening; the Indonesian ANRQ; the EPDS; and sociodemographic information.

The EPDS was not used as a gold standard for criterion-related validity. Instead, it served as an external grouping variable in a known-groups validity analysis. Participants were classified according to EPDS scores, and ANRQ scores were compared between groups to determine whether the instrument differentiated women expected to have different levels of psychosocial vulnerability.

The cross-cultural adaptation process comprised forward translation, reconciliation, back-translation, expert evaluation, and pilot testing. Five bilingual language professionals participated: two forward translators and three back-translators.

Two bilingual translators proficient in English and Indonesian independently completed the forward translations. One translator had a healthcare background and expertise in maternity and mental health; the other was a licensed professional translator without a healthcare background. Using translators with different professional backgrounds was intended to balance conceptual equivalence with natural and culturally appropriate Indonesian language.

Following forward translation, the two versions were reconciled into a single preliminary Indonesian version by the research team and language specialists. Reconciliation was used to resolve discrepancies, select culturally appropriate language, improve readability, and maintain semantic equivalence with the original instrument.

Three independent bilingual experts who had not seen the original ANRQ then completed the back-translation into English. The team comprised one healthcare expert, one qualified professional translator, and one native speaker of a language other than Indonesian who was fluent in Indonesian. This step was intended to assess translation accuracy and whether the translated version conveyed the conceptual content of the original instrument (15).

The Delphi technique was then used to obtain expert consensus on the relevance, clarity, and cultural appropriateness of the translated instrument. The panel comprised nine professionals selected on the basis of their academic qualifications and experience in maternal health, psychiatric nursing, psychology, midwifery, and obstetrics and gynaecology. Most panel members had postgraduate qualifications and professional experience in maternal mental healthcare (16).

The Delphi process comprised three rounds. Experts rated each translated item for semantic equivalence, conceptual relevance, cultural appropriateness, and clarity using a four-point relevance scale (1 = not relevant; 4 = highly relevant). A priori consensus was defined as agreement of $\geq 70\%$ among panel members. After each round, the research team reviewed and synthesised the feedback and revised the items accordingly. Areas of disagreement were examined iteratively using qualitative feedback and reconsidered in the subsequent Delphi round.

In the first Delphi round, panel members received a draft translation of the ANRQ by email. Using the Content Validity Index (CVI), they assessed the content validity of all 13 items and evaluated semantic equivalence, conceptual relevance, cultural appropriateness, and comprehensibility for pregnant women in Indonesia. They were also asked to suggest culturally appropriate and clear wording.

In the first round, all items achieved $>70\%$ agreement, although several required linguistic revision to improve clarity and cultural appropriateness. Items Q1, Q2, Q3.a, Q4, Q5, Q7, Q8, and Q9 were revised in response to expert feedback. Revisions included shortening the wording, clarifying terminology related to emotional abuse, and using culturally relevant terms for Indonesian respondents.

The revised instrument was returned to the expert panel in the second Delphi round for further review and reconsideration of the amended items. Experts also provided additional comments by email and through direct discussion with the research team. The panel reassessed the CVI scores and agreed on the revised wording of Items Q1, Q2, Q3.a, Q4, Q5, Q7, Q8, and Q9.

In the third Delphi round, all 13 items achieved 100% agreement regarding relevance, clarity, and cultural appropriateness. Consensus was defined as expert agreement of $\geq 70\%$ on item relevance and suitability. On the basis of the final consensus, the Indonesian ANRQ was recommended for pilot testing and psychometric evaluation.

Pilot testing was subsequently conducted with 20 pregnant women who represented the target population. It assessed the readability, clarity, comprehensibility, and acceptability of the translated items before the final psychometric evaluation (17).

Participants generally reported no difficulty understanding the questionnaire items, and completion took approximately 5–10 minutes. Minor wording refinements were then made to improve clarity, readability, and cultural comprehensibility before the instrument was finalised for psychometric evaluation (18).

Statistical Analysis

Content validity was assessed using the item-level Content Validity Index (I-CVI) and scale-level Content Validity Index (S-CVI), calculated from the expert panel's ratings on a four-point Likert scale.

Construct validity was examined using a known-groups approach by comparing ANRQ scores between groups with different levels of psychosocial risk. Because the data were not normally distributed, the Mann–Whitney U test was used.

Reliability was assessed using Cronbach's alpha for internal consistency and the interclass correlation coefficient (ICC) for test–retest reliability. Test–retest reliability was evaluated using a two way mixed effects model with absolute agreement. The single-measure ICC was prespecified as the primary estimate because the intended interpretation concerns the reliability of an individual ANRQ administration. ICC values <0.50 were interpreted as poor, 0.50 – 0.75 as moderate, 0.75 – 0.90 as good, and >0.90 as excellent. Ninety-five percent confidence intervals were calculated for the ICC estimates.

All statistical analyses were conducted using IBM SPSS Statistics version 29.0.2.0. Statistical significance was defined as $p < 0.05$.

The EPDS was used to characterise depressive symptoms and other maternal mental health concerns among pregnant women. For the known-groups validity analysis, participants were categorised according to EPDS scores. Consistent with previous validation studies and criteria for probable depression, women with EPDS scores ≥ 13 were classified as being at high risk of depressive symptoms, whereas those with scores <13 were classified as being at low risk. The EPDS was not used to assess criterion validity of the Indonesian ANRQ.

Ethical Considerations

Ethical approval was obtained from an institutional Health Research Ethics Committee (Komisi Etik Penelitian Kesehatan/KEPK; approval No. 231/KEPK/FK/KLE/2025) on 20 November 2025. All participants provided written informed consent before data collection. The data generated and/or analyzed during this study are not publicly available due to ethical and participant privacy considerations but may be available from the corresponding author upon reasonable request and subject to applicable ethical and institutional restrictions. Consent for Publication not applicable, only aggregated participant characteristics are reported, and no identifiable individual information is included in this manuscript.

RESULTS

Participant Characteristics

A total of 93 pregnant women participated in the instrument-testing phase. All were recruited through antenatal services in Bojong Gede Village, Bogor Regency. Their characteristics are presented in Table 1. Most participants were aged 20–35 years (45.2%), followed by those aged <20 years (32.3%) and >35 years (22.6%). Of the participants, 47.3% were primigravidas, 38.7% were multigravidas, and 14.0% were grand multiparas. Less than high school were each reported by 40.9% of participants, while 59.1% high school or more. Most participants were not employed (72.0%); the remainder were labourers (9.7%), private-sector employees (8.6%), or civil servants, military personnel, or police officers (9.7%). Most reported no history of mental health disorders (90.3%), whereas 9.7% reported such a history. All participants provided consent, and there were no missing data.

Table 1. Characteristics of the Participants

Participant characteristic	Frequency, n (%)	
Age		
<20 years	30	32.3
20-35 years	42	45.2
>35 years	21	22.6
Parity		
Primigravida	44	47.3
Multigravida	36	38.7
Grand multipara	13	14.0
Ethnicity		
Javanese	43	46.2
Sunda	31	33.3
Betawi	11	11.8
Batak	6	6.5
Flores	2	2.2
Employment		
Not employed	67	72.0
Labourer	9	9.7
Private-sector employee	8	8.6
Civil servant/military/police	9	9.7
Mental illness		
Yes	9	9.7
No.	84	90.3
Education		
High school or more	55	59.1
Less than high school	38	40.9

Source: Primary data

Content Validity

Content validity was assessed by nine experts in public health, obstetrics and gynaecology, psychology, midwifery, psychiatric nursing, and maternal health. Each expert independently rated the relevance of the Indonesian ANRQ items using a four-point Likert scale.

The 13 items yielded I-CVI values ranging from 0.89 to 1.00. Eleven items achieved complete expert agreement (I-CVI = 1.00), while two items met the minimum acceptable content-validity criterion (I-CVI = 0.89). The S-CVI/UA and S-CVI/Ave values were 0.85 and 0.983, respectively.

These findings indicate that the translated items were considered highly relevant and culturally appropriate for assessing psychosocial risk during pregnancy. Detailed content-validity results are presented in Table 2.

Table 2. Content Validity Index of the Indonesian Version of the ANRQ

Item	Relevant (3 or 4), n	Not relevant (1 or 2), n	I-CVI	Interpretation
1	9	0	1.00	Valid
2	9	0	1.00	Valid
3	9	0	1.00	Valid
4	9	0	1.00	Valid
5	9	0	1.00	Valid
6	9	0	1.00	Valid
7	9	0	1.00	Valid
8	9	0	1.00	Valid
9	9	0	1.00	Valid
10	9	0	1.00	Valid
11	8	1	0.89	Valid
12	9	0	1.00	Valid
13	8	1	0.89	Valid

Construct Validity

Construct validity was assessed using the known-groups approach, which compared ANRQ scores between pregnant women classified as being at high or low risk of depressive symptoms according to EPDS scores. Table 3 presents the construct-validity results.

Table 3. Known-Groups Validity of the Antenatal Risk Questionnaire

Subscale	Pregnant women participants High risk (n=55)	Pregnant women participants Low risk (n=38)	p ^a	U	Z	r
ANRQ			<0.001	1.00	-8.186	0.85
Median	32	21				
Interquartile Range	7	2				
Mean Rank	65.98	19.53				
Mean	33.50	20.82				
Minimum	25	18				
Maximum	43	26				

a Mann–Whitney U-test p-value

Known-groups validity was assessed by comparing ANRQ scores between pregnant women classified as being at high or low risk of depressive symptoms on the basis of their EPDS scores. Consistent with previous Indonesian EPDS validation studies, participants with EPDS scores ≥ 13 were classified as being at high risk, whereas those with scores < 13 were classified as being at low risk. The EPDS was used solely as an external grouping variable and not as a criterion standard. Because ANRQ scores were not normally distributed, between-group differences were examined using the Mann–Whitney U test. Participants in the high-risk EPDS group had higher ANRQ scores (median = 32; IQR = 7) than those in the low-risk group (median = 21; IQR = 2). The mean rank was also higher in the high-risk group (65.98) than in the low-risk group (19.53). The Mann–Whitney U test showed a statistically significant difference in ANRQ scores between the two EPDS-defined groups ($U = 1.00$, $Z = -8.186$; $p < 0.001$). The effect size was large ($r = 0.85$), indicating substantial separation in psychosocial-risk scores between participants classified as being at high and low risk of depressive symptoms.

This pattern was in the expected direction for known-groups validity and indicates that the Indonesian ANRQ differentiated groups expected to have different levels of psychosocial vulnerability. These findings are preliminary and should not be interpreted as evidence of predictive validity, diagnostic performance, or the ability to predict future postpartum depression.

Reliability

Test–Retest Reliability

A subsample of 20 pregnant women completed the Indonesian ANRQ twice within the specified retest interval. The same 20 pregnant women who participated in the pilot testing subsequently completed the Indonesian ANRQ again for the test–retest assessment after a two-week interval. Agreement between administrations was assessed using a two-way mixed-effects ICC with an absolute-agreement definition. The single-measures ICC for the total ANRQ score was 0.834 (95% CI: 0.631–0.931; $p < 0.001$), indicating good temporal stability. This finding suggests that total scores were reasonably stable when the same participants completed the questionnaire under similar conditions.

Table 4. Test–Retest Reliability of the Indonesian Version of the ANRQ

	Intraclass correlation coefficient	95% Confidence Interval		F test with true value 0			
		Lower Bound	Upper Bound	Value	df1	df2	p
Single Measures	0.834	0.631	0.931	10.836	19	19	<0.001
Average Measures	0.910	0.774	0.964	10.836	19	19	<0.001

The ICC was estimated using a two-way mixed-effects model with absolute agreement. Single-measure ICC was considered the primary estimate because each participant's ANRQ score at each administration represented a single measurement.

Internal Consistency

Cronbach's alpha for the Indonesian ANRQ was 0.85, indicating good internal consistency. All corrected item–total correlations exceeded the minimum criterion of 0.30 and ranged from 0.34 to 0.60. Deleting any single item did not materially increase Cronbach's alpha, suggesting that each item contributed to the composite score.

The overall alpha coefficient was 0.85. This finding should be interpreted cautiously because the ANRQ was designed to assess several psychosocial domains rather than a single latent construct. The coefficient therefore reflects the overall internal consistency of the composite scale and does not establish unidimensionality. Detailed item-analysis results are presented in Table 5.

Table 5. Internal Consistency of the Indonesian Version of the ANRQ

Item	Corrected item-total correlation	Cronbach's alpha if item deleted
1	0.57	0.84
2	0.57	0.84
3	0.59	0.84
4	0.45	0.85
5	0.57	0.84
6	0.49	0.84
7	0.57	0.83
8	0.60	0.83
9	0.60	0.83
10	0.60	0.83
11	0.60	0.83
12	0.60	0.83
13	0.34	0.85

Item 13 had the lowest corrected item-total correlation (0.34), although this value remained above the commonly accepted criterion of 0.30. The item may capture an aspect of psychosocial history that differs from the other ANRQ domains. Because it concerns emotional support during childhood, responses may also be influenced by cultural perspectives on family relationships, retrospective recall, or reluctance to evaluate parental support negatively. The item was retained because it remained conceptually important and met the predefined psychometric criterion.

Table 6. Forward Translation, Back-Translation, and Final Indonesian Version of the ANRQ Items

No	Original item	Forward translation	Back-translation	Final Indonesian version
1	Have you ever had a period of two weeks or more when you felt particularly worried, miserable or depressed?	Apakah Anda pernah mengalami masa selama dua minggu atau lebih di mana Anda merasa sangat cemas, sedih, atau depresi?	Have you ever experienced a period of two weeks or more during which you felt very anxious, sad, or depressed?	Apakah Anda pernah mengalami periode selama dua minggu atau lebih di mana Anda merasa sangat cemas, sedih, atau depresi?
2	Seriously interfere with your work or your relationships with friends or family?	Apakah hal tersebut secara serius mengganggu pekerjaan atau hubungan Anda dengan teman dan keluarga?	Did this seriously interfere with your work or your relationships with friends and family?	Apakah hal ini mengganggu pekerjaan Anda atau hubungan Anda dengan teman dan keluarga secara serius?
3	lead you to seek professional help?	Apakah Anda mencari bantuan profesional pada saat itu?	Did you seek professional help at that time?	Apakah anda mencari bantuan profesional pada saat itu?
4	Do you have any other history of mental health Problems? (e.g. eating disorders, psychosis, bipolar, schizophrenia)	Apakah Anda memiliki riwayat gangguan kesehatan mental lainnya (misalnya gangguan makan, psikosis, bipolar, skizofrenia)?	Do you have a history of any other mental health disorders (e.g., eating disorders, psychosis, bipolar disorder, schizophrenia) ?	Apakah Anda memiliki riwayat masalah kesehatan mental lainnya? (misalnya gangguan makan, psikosis, bipolar, skizofrenia)
5	Is your relationship with your partner an emotionally supportive one?	Apakah hubungan Anda dengan pasangan merupakan hubungan yang memberikan dukungan emosional?	Is your relationship with your partner an emotionally supportive one?	Apakah hubungan Anda dengan pasangan merupakan hubungan yang memberikan dukungan emosional?
6	Have you had any stresses, changes or losses in the last 12 months? (e.g. only: separation, domestic violence, job loss, bereavement etc.)	Apakah Anda mengalami stres, perubahan besar, atau kehilangan dalam 12 bulan terakhir? (contoh: perpisahan, kekerasan dalam rumah tangga, kehilangan pekerjaan, kematian, dll.)	Have you experienced any stress, major changes, or losses in the past 12 months? (e.g., separation, domestic violence, job loss, bereavement, etc.)	Apakah Anda mengalami stres, perubahan atau kehilangan dalam 12 bulan terakhir? (contoh: perpisahan, kekerasan dalam rumah tangga, kehilangan pekerjaan, duka cita, dll.)
7	How distressed were you by these stresses, changes or losses?	Seberapa besar Anda merasa tertekan oleh stres, perubahan, atau kehilangan tersebut?	How distressed did you feel about these stresses, changes, or losses?	Seberapa tertekankah Anda oleh stres, perubahan, atau kehilangan ini?
8	Would you generally consider yourself a worrier?	Secara umum, apakah Anda termasuk orang yang mudah khawatir (worrier)?	In general, would you describe yourself as a worrier?	Apakah Anda umumnya menganggap diri Anda sebagai orang yang mudah cemas?
9	In general, do you become upset if you do not have order in your life? (e.g. regular timetable, tidy house)	Secara umum, apakah Anda merasa terganggu jika hidup Anda tidak teratur?	In general, do you feel disturbed when your life is disorganized (e.g.,	Secara umum, apakah Anda merasa kesal jika tidak ada keteraturan dalam hidup Anda? (misalnya, jadwal

		(misalnya jadwal tidak tetap, rumah berantakan)?	irregular schedule, messy home)?	yang teratur, rumah yang rapi)
10	Do you feel you will have people you can depend on for support with your baby?	Apakah Anda merasa akan memiliki orang-orang yang bisa diandalkan untuk membantu Anda merawat bayi?	Do you feel you will have people you can rely on to help you care for your baby?	Apakah Anda merasa akan memiliki orang-orang yang dapat Anda andalkan untuk memberikan dukungan dalam merawat bayi Anda?
11	Were you emotionally abused when you were growing up?	Saat Anda tumbuh besar, apakah Anda pernah mengalami kekerasan emosional?	When you were growing up, did you experience emotional abuse?	Apakah Anda pernah mengalami kekerasan emosional saat Anda masih kecil?
12	Have you ever been sexually or physically abused?	Apakah Anda pernah mengalami kekerasan fisik atau seksual?	Have you ever experienced physical or sexual abuse?	Apakah Anda pernah mengalami kekerasan fisik maupun seksual?
13	When you were growing up, did you feel your mother was emotionally supportive of you?	Ketika Anda masih kecil, apakah Anda merasa ibu Anda memberikan dukungan emosional kepada Anda?	When you were a child, did you feel your mother was emotionally supportive of you?	Ketika Anda tumbuh dewasa, apakah Anda merasa ibu Anda memberikan dukungan emosional kepada Anda?

DISCUSSION

Interpretation of the Principal Findings

This study provides preliminary evidence supporting the Indonesian ANRQ as a measure of psychosocial vulnerability during pregnancy. Rather than assessing current depressive symptoms, the ANRQ captures psychosocial conditions that may increase vulnerability to later mental health problems, including previous mental health difficulties, stressful life experiences, relationship problems, anxiety-prone characteristics, and limited social support (19). Although these domains represent different aspects of psychosocial functioning, they are conceptually linked within a biopsychosocial model of maternal mental health. The total ANRQ score should therefore be interpreted as cumulative psychosocial vulnerability rather than as a single underlying psychological construct.

The findings also suggest that psychosocial risk among pregnant women in Indonesia is unlikely to arise from a single factor. Instead, vulnerability may reflect the combined influence of personal experiences, family relationships, and broader social contexts. This interpretation is consistent with contemporary models of perinatal mental health that emphasise the cumulative effects of multiple psychosocial stressors. Assessing several psychosocial factors together may therefore identify women whose vulnerability would not be detected through symptom-based screening alone (20).

A further distinction concerns the different purposes of psychosocial-risk assessment and depressive-symptom screening. The EPDS assesses symptoms at the time of administration, whereas the ANRQ assesses psychosocial factors that may contribute to vulnerability during pregnancy and after birth (21). The ANRQ may therefore complement, rather than replace, symptom-based screening by identifying women with elevated psychosocial risk even when they report few or no current depressive symptoms. This distinction may support earlier monitoring or intervention before depressive symptoms emerge (19).

The ANRQ also differs from instruments focused exclusively on depressive symptoms because it is multidimensional. Evidence suggests that broader psychosocial screening approaches may identify vulnerabilities related to anxiety, trauma exposure, and psychosocial stressors that are not fully captured by depression-focused instruments (22).

Successful cross-cultural adaptation requires more than literal translation; it must account for the social and cultural contexts in which questionnaire responses are interpreted. In Indonesia, stigma, religious beliefs, family expectations, and conventional gender roles (20) may influence responses to questions about mental health, family relationships, childhood trauma, and emotional abuse. Some women may be reluctant to disclose sensitive experiences such as marital difficulties, limited partner support, or previous trauma. Collectivist family structures may also shape perceptions and reporting of social support differently from the populations for whom the ANRQ was originally developed (23). These contextual factors should be considered when interpreting psychosocial-risk scores. Although the expert panel considered the translated items culturally appropriate, qualitative research could further clarify how Indonesian women understand and respond to different psychosocial-risk domains.

The reliability estimates were broadly comparable with those reported in previous cross-cultural adaptation studies (18). This similarity suggests that the core content of the questionnaire was retained in the Indonesian version despite linguistic and cultural differences. However, psychometric performance may vary according to participant characteristics, healthcare systems, cultural context, and study methods; direct comparisons across studies should therefore be made cautiously. Further research is needed to examine structural validity, criterion validity, and predictive accuracy.

The known-groups findings also require cautious interpretation. Women classified as being at higher risk of depressive symptoms had significantly higher ANRQ scores, but this does not show that the ANRQ predicts future depression or identifies women who will develop perinatal mental health problems (19). The study did not assess diagnostic accuracy, sensitivity, specificity, receiver operating characteristic performance, or referral thresholds. The results should therefore be interpreted as preliminary evidence of an association between psychosocial-risk scores and depressive-symptom risk rather than as

evidence of predictive validity or screening accuracy (10). Future research should include longitudinal follow-up, criterion-related validation, and diagnostic-accuracy analyses in larger and more diverse Indonesian populations.

The study aimed to culturally adapt and conduct a preliminary psychometric evaluation of the Indonesian ANRQ among pregnant women. Overall, the findings provide preliminary support for its content validity, internal consistency, and temporal stability in the study population. The instrument may be useful for preliminary psychosocial-risk screening in antenatal care settings similar to those included in this study.

The content-validity findings indicate that the translated ANRQ items were considered relevant, clear, and culturally appropriate for assessing psychosocial risk during pregnancy in Indonesia. This is important because constructs such as partner support, childhood adversity, and emotional well-being may be interpreted differently across cultural settings. Expert consensus indicated that the Indonesian version retained the conceptual meaning of the original questionnaire while remaining appropriate for the maternal healthcare context (24).

The Indonesian ANRQ showed good internal consistency (Cronbach's $\alpha = 0.85$). This suggests that the items functioned coherently within an overall psychosocial-risk assessment framework; however, it does not demonstrate that they measure a single construct (25). Psychosocial-risk assessment during pregnancy requires broad approaches that capture emotional, social, and environmental factors associated with maternal mental health. Evidence increasingly suggests that screening approaches covering a wider range of risk domains may improve early identification beyond the use of depressive-symptom measures alone (26).

The observed internal consistency indicates that the translated items functioned together within a composite psychosocial-risk framework. Further structural analyses are nevertheless needed to determine whether the Indonesian ANRQ comprises one or several underlying dimensions. Temporal stability is also important because it reflects the reproducibility of scores across repeated administrations (14).

These findings support the importance of psychosocial screening during pregnancy (27). Antenatal mental health problems are increasingly recognised as major public health concerns, particularly in low- and middle-income countries. Stressful life events, limited social support, a history of mental illness, domestic violence, and anxiety are consistently associated with antenatal and postpartum depression (7). The availability of an Indonesian ANRQ with preliminary evidence of content validity, internal consistency, and temporal stability may facilitate earlier recognition of psychosocial vulnerability while further validation studies assess its broader psychometric performance (28).

Comparison With Previous Studies

The findings are consistent with studies showing associations between maternal mental health problems and psychosocial factors such as anxiety, social support, stressful events, and parity (29). Previous Indonesian research has also described the ANRQ as a potentially useful instrument for identifying psychosocial risk factors among pregnant women. In addition, a recent systematic review indicated that multidimensional psychosocial screening tools may identify maternal mental health concerns beyond depressive symptoms, including stress exposure, trauma history, and limited social support (26).

The psychometric findings are broadly consistent with the work of Reilly et al., who reported that the ANRQ captured several domains of psychosocial risk relevant to perinatal mental health. Similar to the original work, the Indonesian version showed conceptual relevance across domains including emotional support, mental health history, and stressful life experiences (12). The Indonesian ANRQ showed satisfactory internal consistency (Cronbach's $\alpha = 0.85$), comparable with estimates reported in other ANRQ adaptation studies. Reliability coefficients should not be expected to be identical across populations because participant characteristics and validation procedures differ. Nevertheless, the present estimate suggests that the translated instrument remained sufficiently coherent after cultural adaptation. Internal consistency alone does not establish structural validity; factor-analytic studies are required to examine the dimensional structure of the Indonesian ANRQ.

The good test-retest reliability observed in this study is also consistent with psychometric research demonstrating the temporal stability of psychosocial screening instruments. The estimate suggests that the Indonesian ANRQ can produce reasonably stable psychosocial-risk scores across repeated administrations. Research on maternal mental health emphasises the value of standardised psychosocial screening tools for earlier detection and preventive care during pregnancy and the postpartum period. Early identification of psychosocial and emotional risk factors may support monitoring and strategies to prevent postpartum depression (22).

Cultural adaptation remains essential because psychosocial experiences and the expression of emotional distress vary across cultures. The present findings support the use of culturally relevant measures to improve the assessment and interpretation of psychosocial risk in different sociocultural settings, including Indonesia.

Strengths, Limitations, and Cautions

Several limitations should be considered. Participants were recruited through antenatal care providers in one village in Bogor Regency; the findings are therefore preliminary. Generalisation to pregnant women in other parts of Indonesia should be cautious because cultural, linguistic, socioeconomic, and healthcare-delivery factors may influence psychosocial-risk profiles and questionnaire responses.

The sample size was adequate for an initial cross-cultural adaptation study and permitted preliminary assessment of content validity, known-groups validity, internal consistency, and test-retest reliability. However, it was insufficient to explore or confirm the dimensional structure of the Indonesian ANRQ using factor analysis. Larger studies are therefore needed to evaluate structural validity.

Evidence on temporal stability should also be interpreted cautiously. Test–retest reliability was assessed in a small subsample, which limits the precision of the stability estimate. Although the ICC indicated good agreement across repeated administrations, validation in larger samples would increase confidence in the instrument's temporal stability.

The study was not designed to assess criterion-related validity, predictive validity, or diagnostic accuracy. Differences in ANRQ scores between women with high and low EPDS scores should therefore not be interpreted as evidence that the questionnaire predicts future depression or accurately identifies women who will develop perinatal mental health problems. Receiver operating characteristic analysis, sensitivity, specificity, and clinically appropriate referral thresholds should be evaluated before wider clinical implementation.

Response bias is another potential limitation. Several ANRQ items concern sensitive experiences, including previous mental health difficulties, childhood adversity, partner relationships, and domestic conflict. Some participants may have underreported these experiences because of concerns about privacy, stigma, or social expectations.

Overall, the findings should be regarded as preliminary rather than as a complete psychometric validation. The study nevertheless supports the cross-cultural adaptation of the Indonesian ANRQ and provides initial evidence of content validity, known-groups validity, internal consistency, and temporal stability. Larger multicentre studies involving more diverse populations are required to generate additional psychometric evidence and evaluate the instrument's suitability for broader use in Indonesian maternal healthcare.

Implications and Recommendations for Future Research

Further research is required to strengthen the psychometric evidence for the Indonesian ANRQ. The instrument should be evaluated in larger samples from different geographical areas and healthcare settings across Indonesia. A more diverse sample representing different cultural, linguistic, and socioeconomic backgrounds would allow a more comprehensive assessment of its performance and support conclusions about broader applicability.

Future studies should examine the structural properties of the Indonesian ANRQ using exploratory and confirmatory factor analyses. These analyses could determine whether the dimensional structure of the original questionnaire is retained after cultural adaptation and clarify the organisation of psychosocial-risk domains in the Indonesian context.

Additional validation studies should assess criterion-related, convergent, and discriminant validity against established measures of maternal mental health. Such evidence would support a more comprehensive interpretation of ANRQ scores and increase confidence in the instrument's intended use.

Longitudinal studies would be particularly useful for determining whether psychosocial risk identified during pregnancy is associated with subsequent maternal mental health outcomes, including antenatal depression, postpartum depression, anxiety, and psychosocial adjustment after birth. This evidence would clarify the predictive utility of the Indonesian ANRQ and its potential role in preventive maternal mental healthcare.

Future research should also evaluate screening performance using receiver operating characteristic curves, sensitivity, specificity, predictive values, and clinically meaningful referral thresholds. Implementation studies are needed to assess the feasibility, acceptability, and integration of psychosocial-risk screening into routine antenatal care. Understanding the perspectives of pregnant women and healthcare professionals could inform appropriate referral pathways and support options for women identified as having elevated psychosocial risk.

CONCLUSION

This study reports the preliminary psychometric properties of an Indonesian version of the Antenatal Risk Questionnaire following cross-cultural adaptation for use among pregnant women. The translated questionnaire showed satisfactory content validity, good internal consistency, and acceptable test–retest reliability in the study population.

These findings should be interpreted in light of the study design. The evidence does not constitute a complete psychometric validation because the evaluation involved a relatively small sample from a restricted geographical area. Structural validity, criterion-related validity, predictive validity, diagnostic accuracy, and appropriate referral thresholds remain to be established. Further validation in larger and more diverse Indonesian populations is therefore required. Future studies should examine the instrument's dimensionality, associations with relevant maternal mental health measures, ability to predict subsequent outcomes, and clinically meaningful screening thresholds. This evidence will clarify the potential value of the Indonesian ANRQ as a culturally appropriate instrument for assessing psychosocial risk in maternal healthcare.

DECLARATIONS

Author contributions: The first author contributed to conceptualization, investigation, formal analysis, writing - original draft. The second author contributed to methodology, formal analysis, supervision, writing - review and editing. The third author contributed to supervision, investigation, writing - review and editing. All authors accepted accountability for their contributions and approved the final manuscript.

Conflicts of interest: The authors declare that they have no conflicts of interest that could have influenced the impartiality or integrity of this study.

Declaration of Generative AI And AI-Assisted Technologies in the Writing Process: During the preparation and revision of this manuscript, the authors used ChatGPT (OpenAI; accessed August 2026), Grammarly (accessed August 2026), and QuillBot (accessed August 2026) for language editing, grammar correction, sentence refinement, and readability improvement. The authors

reviewed, verified, and edited all AI-assisted outputs and take full responsibility for the accuracy, originality, and integrity of the final manuscript.

Source of Funding Statements: This study was entirely self-funded by the first author. No external grant, institutional funding, or other financial support was received for any part of the study.

Acknowledgments: The authors thank all experts and participants for their valuable contributions, cooperation, and participation in the instrument-adaptation and data-collection processes. They also acknowledge all parties who assisted in facilitating the study.

REFERENCES

- Putri Siti Rafika, Ari Yuniastuti W hary cahyati. Postpartum Depression in Primigravida: The Influence of Maternal Factors in Indonesia. J Creat student [Internet]. 2025;8. Available from: <https://doi.org/10.15294/jcs.v8i1.24989>
- Al-Abri K, Edge D, Armitage CJ. Prevalence and correlates of perinatal depression. Soc Psychiatry Psychiatr Epidemiol [Internet]. 2023 Nov;58(11):1581–90. Available from: <https://doi.org/10.1007/s00127-022-02386-9>
- Ariasih, A., B., Budiharsana, M., Ronoatmodjo S. Common Mental Disorders and Associated Factors During Pregnancy and the Postpartum Period in Indonesia: An Analysis of Data From the 2018 Basic Health Research. J Prev Med Public Heal [Internet]. 2024;57(4):388–398. Available from: <https://doi.org/10.3961/jpmph.24.082>
- Putri SR, Yuniastuti A, Rahardjo BB, Saputra MD. Gambaran distribusi frekuensi faktor risiko depresi postpartum di wilayah Indonesia. J Midwifery [Internet]. 2026; Available from: <https://doi.org/10.63425/ljmw.v2i1.142>
- Putri RS. Depression Postpartum: Bibliometric Analysis. In: Proceedings of International Conference on Health Science, Practice, and Education [Internet]. Semarang: Universitas negeri semarang; 2025. Available from: <https://proceeding.unnes.ac.id/icohespe/article/view/4158>
- Hansen K, Mische Lawson L, Wilpers A. Prenatal Psychosocial Distress Screening for Individuals Experiencing Pregnancies Complicated by Fetal Anomalies. J Pers Med [Internet]. 2025 Jul;15(7). Available from: <https://doi.org/10.3390/jpm15070322>
- Howard LM, Khalifeh H. Perinatal mental health: a review of progress and challenges. World Psychiatry [Internet]. 2020 Oct;19(3):313–27. Available from: <https://doi.org/10.1002/wps.20769>
- Sari DN, Diatri H, Siregar K, Pratomo H. Adaptation of the Edinburgh Postnatal Depression Scale in the Indonesian Version: Self-reported Anxiety and Depression Symptoms in Pregnant Women. Open Access Maced J Med Sci [Internet]. 2021 Dec 7;9(B SE-Gynecology and Obstetrics):1654–9. Available from: <https://doi.org/10.3889/oamjms.2021.7783>
- Waqas A, Koukab A, Meraj H, Dua T, Chowdhary N, Fatima B, et al. Screening programs for common maternal mental health disorders among perinatal women: report of the systematic review of evidence. BMC Psychiatry [Internet]. 2022;22(1):54. Available from: <https://doi.org/10.1186/s12888-022-03694-9>
- Reilly N, Hadzi-Pavlovic D, Loxton D, Black E, Mule V, Austin MP. Supporting routine psychosocial assessment in the perinatal period: The concurrent and predictive validity of the Antenatal Risk Questionnaire-Revised. Women Birth [Internet]. 2022 Mar;35(2): e118–24. Available from: <https://doi.org/10.1016/j.wombi.2021.04.003>
- Dewi Pitriawati, Ririn Probowati, Niken Kinesti. Effectiveness Of Antenatal Risk Questionnaire (Anrq) In Early Detection Of Risk Factors of Psychological Disorders for Pregnant Mothers. J Ilm Kebidanan (Scientific J Midwifery) [Internet]. 2022 Sep 30;8(2 SE-):97–100. Available from: <https://doi.org/10.33023/jikeb.v8i2.1249>
- Cetin A, Guleroglu FY, Punduk M, Ucar T, Celik OT, Golbasi Z, et al. Turkish adaptation of the antenatal risk questionnaire-revised: study of validity and reliability. BMC Psychol [Internet]. 2024 Oct;12(1):588. Available from: <https://doi.org/10.1186/s40359-024-02112-x>
- Kurniawati W, Chien WT, Lantu N, Santi NF, Astuti YL, Faradina F, et al. Validation of the pregnancy-related anxiety scale (PrAS) for pregnant women in Indonesia. BMC Pregnancy Childbirth [Internet]. 2025;25(1):968. Available from: <https://doi.org/10.1186/s12884-025-08036-7>
- Tsang S, Royse CF, Terkawi AS. Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. Saudi J Anaesth [Internet]. 2017 May;11(Suppl 1): S80–9. Available from: https://doi.org/10.4103/sja.SJA_203_17
- Cruchinho P, López-Franco MD et al. Translation, Cross-Cultural Adaptation, and Validation of Measurement Instruments: A Practical Guideline for Novice Researchers. J Multidiscip Heal [Internet]. 2024; 17:2701–28. Available from: <https://doi.org/10.2147/JMDH.S419714>
- Dragostinov Y, Harðardóttir D, McKenna PE, Robb DA, Nessel B, Ahmad MI, et al. Preliminary psychometric scale development using the mixed methods Delphi technique. Methods Psychol [Internet]. 2022; 7:100103. Available from: <https://doi.org/10.1016/j.metip.2022.100103>
- Teig CJP, Bond MJ, Grotle M, Kjøllesdal M, Saga S, Cvancarova MS, et al. A novel method for the translation and cross-cultural adaptation of health-related quality of life patient-reported outcome measurements. Health Qual Life Outcomes [Internet]. 2023;21(1):13. Available from: <https://doi.org/10.1186/s12955-023-02089-y>
- Dwi Fitri A, Findyartini A, Soemantri D, Mustika R, Santoso A, Claramita M, et al. Cross-cultural adaptation and validation of a teaching questionnaire measuring facilitator competencies and characteristics of interprofessional clinical educators in an Asian setting. J Interprof Care [Internet]. 2025 May 4;39(3):377–90. Available from: <https://doi.org/10.1080/13561820.2025.2452972>
- Broberg L, Bendix JM, Røhder K, Løkkegaard E, Væver M, Grew JC, et al. Combining the Antenatal Risk Questionnaire and the Edinburgh Postnatal Depression Scale in Early Pregnancy in Danish Antenatal Care—A Qualitative Descriptive Study. Int J Environ Res Public Health [Internet]. 2024;21(4). Available from: <https://www.mdpi.com/1660-4601/21/4/454>
- Hartini N, Fardana NA, Ariana AD, Wardana ND. Stigma toward people with mental health problems in Indonesia. Psychol Res Behav Manag [Internet]. 2018; 11:535–41. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC6217178/>
- Hight NJ, and the Expert Working Group and Expert Subcommittees. Mental health care in the perinatal period: Australian clinical practice guideline. Melbourne [Internet]. first. Australia: Centre of Perinatal Excellence (COPE); 2023. Available from: https://www.cope.org.au/uploads/images/Health-professionals/COPE_2023_Perinatal_Mental_Health_Practice_Guideline.pdf

22. Hahn L, Eickhoff SB, Habel U, Stickeler E, Schnakenberg P, Goecke TW, et al. Early identification of postpartum depression using demographic, clinical, and digital phenotyping. *Transl Psychiatry* [Internet]. 2021;11(1). Available from: <https://doi.org/10.1038/s41398-021-01245-6>
23. Kirmayer LJ, Gomez-Carrillo A, Veissière S. Culture and depression in global mental health: An ecosocial approach to the phenomenology of psychiatric disorders. *Soc Sci Med*. 2017 Jun; 183:163–8.
24. Boateng GO, Neilands TB, Frongillo EA, Melgar-Quinonez HR, Young SL. Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Front public Heal* [Internet]. 2018; 6:149. Available from: <https://doi.org/10.3389/fpubh.2018.00149>
25. Hair, J. F., Black, W. C., Babin, B. J., & Anderson RE. *Multivariate data analysis* (8th ed.). [Internet]. Eight. United Kingdom: Annabel Ainscow; 2022. Available from: https://eli.johogo.com/Class/CCU/SEM/_Multivariate Data Analysis_Hair.pdf
26. Stanhope KK, Galatan J, Umerani A, Islam R, Powers A, Michopoulos V, et al. A systematic review of psychosocial screening tools for identification of postpartum mental health status beyond depressive symptoms. *Midwifery* [Internet]. 2025 Sep; 148:104530. Available from: <https://doi.org/10.1016/j.midw.2025.104530>
27. Kementerian Kesehatan RI. *Pedoman Pelayanan Antenatal Terpadu* [Internet]. ketiga. Jakarta: Kemenkes RI; 2020. 5–18 p. Available from: <https://repository.kemkes.go.id/book/147>
28. Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: A systematic review. *J Affect Disord* [Internet]. 2016 Feb; 191:62–77. Available from: <https://doi.org/10.1016/j.jad.2015.11.014>
29. Budiarti A, Hastuti P, Fatimawati I, Sulistyawati R. Determinants of Psychological Disorders Among Pregnant Women in Indonesia: A Cross-sectional Study on The Roles of Social Support, Parity, and Anxiety. *J Appl Nurs Heal* [Internet]. 2025 Nov 7;7(3 SE-Articles):595–603. Available from: <https://doi.org/10.55018/janh.v7i3.388>



COPYRIGHT & LICENSING

Copyright © 2026 Media Publikasi Promosi Kesehatan Indonesia

This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).