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Translation And Validation Of Pregnancy Anxiety Instrument Into Indonesian: Pras

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A B S T R A C T

Introduction: Anxiety is frequently experienced during pregnancy and is recognized as a prevalent psychological issue. The PrAS or stands for Pregnancy-related Anxiety Scale is widely used to measure anxiety specifically associated with pregnancy. Though, it has not yet been validated in Indonesia.

Objective: This study aimed to examine the validity and reliability of the Indonesian adaptation of the Pregnancy-related Anxiety Scale (PrAS). The cross-sectional study involved 92 pregnant women recruited from a community health center in the Jakarta area. The Content Validity Index (CVI) was used to evaluate the relevance of each item to the concept of pregnancy-related anxiety. Cronbach's alpha was employed to assess the internal consistency and inter-item reliability of the instrument.

Results: The CVI, assessed by six expert reviewers, yielded values ranging from 0.83 to 1.00, with an average of 0.984. The S-CVI for the PrAS met the recommended threshold of 0.90 or higher. Additionally, the average internal consistency, as measured by Cronbach's alpha, was 0.953. These findings indicate that the Indonesian adaptation of the PrAS is both valid and reliable for use in measuring pregnancy-related anxiety in Indonesian women.

Conclusions: The Indonesian PrAS adaptation is a reliable and suitable measure for identifying and assessing pregnancy-related anxiety among Indonesian women.

Keywords: Prenatal anxiety, Pregnancy-related Anxiety Scale (PrAS), Indonesia, adaptation, translation validiy.

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1. INTRODUCTION

Anxiety is increasingly recognized as a prevalent psychological condition during pregnancy (Falah-Hassani, Shiri, & Dennis, 2017). The prevalence of anxiety varies by country and cultural context. For instance, in Canada, 22.9% of pregnant women reported experiencing anxiety symptoms, with 15.2% being diagnosed with an anxiety disorder (Dennis, Falah-Hassani, dan Shiri, 2017). Previous studies have shown that the prevalence of anxiety among expectant mother's ranges from nearly 5% to over 40% (Doraiswamy et al. 2020).

Pregnancy-related anxiety is not just a common phenomenon but also a clinically significant one. This condition can have serious consequences, affecting the health of both the mother and the fetus (Araji et al. 2020). Pregnancy-related anxiety is associated with an increased risk of preeclampsia, various obstetric complications, and impaired maternal–fetal bonding (Alipour, Lamyian, & Hajizadeh, 2012). Furthermore, anxiety experienced during pregnancy can lead to postpartum depression (Farré-Sender et al. 2018, Field, 2017, p. 122, Margawati et al. 2022). For the infant, maternal anxiety is linked to adverse outcomes such as being born at a younger gestational age, having a lower birth weight, and experiencing cognitive impairments (Ding et al, 2014). Pregnancy-related anxiety negatively affects birth outcomes and maternal bonding (Huizink et al., 2017). Given the detrimental effects of anxiety during pregnancy, it is crucial to identify it in a timely manner. Accurate measurement of pregnancy-related anxiety requires a validated and reliable instrument (Val et al, 2022). In Indonesia, anxiety levels ranging from mild to severe were reported in approximately 20.2% of pregnant women (Margawati et al. 2022). Another study found that 53.3% of women experienced anxiety, with higher levels observed in educated women, those in early gestation (less than 19 weeks), and those who were employed (Nurrizka, et al 2021). The impact of anxiety during pregnancy on delivery services is still being assessed, and its effects on the well-being of both mothers and fetuses are significant Therefore, a tool like the Pregnancy-related Anxiety Scale (PrAS) is needed in Indonesia. Unlike general anxiety scales, such as GAD-7 or the EPDS-Anxiety subscale, the PrAS specifically captures the unique aspects of pregnancy-related anxiety, such as fears about childbirth, body image concerns, self-worry, and worries about the fetus. These dimensions make PrAS particularly well-suited for pregnant women, offering a more targeted measure of their emotional and psychological concerns.

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This pilot study aimed to adapt the PrAS instrument for use in Indonesia. The study had two main objectives: (1) to evaluate how well the relevant aspects of the Content Validity Index (CVI) and the Scale Content Validity Index (S-CVI) are addressed by the items; and (2) to assess the reliability of the Indonesian version of the instrument using Cronbach's alpha. Additionally, the study aimed to provide valuable insights for the future development and refinement of the PrAS in Indonesia.

2. METHODS

Study Design

This was a descriptive pilot study conducted at community health centers in the Jakarta area in November 2023. The Faculty of Nursing at Universitas Indonesia's IRB approved the study, and the researchers obtained each participant's written informed consent after thoroughly explaining the study's purpose.

Sample

The researchers screened and recruited singleton pregnant women as they received antenatal care at the clinic. Due to the high number of antenatal visits, the study was conducted at a public health center in the Jakarta area. Convenience sampling was used in this study. Mothers were selected based on the following criteria: they had a pregnancy with a single fetus, and they spoke and understood Bahasa. Mothers with obstetric complications (e.g., hemorrhage or preeclampsia) or a history of psychopathology were excluded. A total of 92 participants were recruited.

Instruments

1. Pregnancy-related Anxiety Scale

Robyn Brunton and her colleagues developed the PrAS to assess anxious feelings experienced by pregnant women. A four-point Likert scale ranging from 1 to 4 is used by the 32-item instrument (not at all = 1; occasionally = 2; quite often = 3; and very often = 4). The answers that are either the highest or the lowest describe the anxiety experienced by expectant women that is on opposite ends of the spectrum. (Polit, et al 2007, Brunton, et al 2021)

2. Demographic variables

A structured questionnaire was used to collect participants' demographics, specifically their

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age, gestational age, current employment status, educational level, and parity.

Data Collection

The researchers conducted the study in two stages: first, the Pregnancy-related Anxiety Scale (PrAS) was translated and culturally adapted into Indonesian; then, the translated version was psychometrically tested for validity and reliability.

(1) Translation and Cultural Adaptation of PrAS

To ensure linguistic accuracy and cultural relevance, the translation process followed Brislin's (1970) model of forward and backward translation. This method helps ensure that both the meaning and the cultural context of the original instrument are preserved.

1. Forward Translation: Two bilingual experts independently translated the original English version of the PrAS into Indonesian. The translators were fluent in both English and Indonesian and had health science backgrounds, which was essential for maintaining the integrity of the medical and psychological content.
2. Reconciliation: After the forward translations were completed, a meeting was held to reconcile differences and create a single, agreed-upon version of the translation.
3. Backward Translation: Two different bilingual translators, who were unaware of the original English version, back-translated the reconciled Indonesian version into English. This step helped identify any discrepancies or shifts in meaning between the original and translated versions.
4. Expert Panel Review: The back-translated version was reviewed by an expert committee consisting of researchers, linguists, and maternal health professionals. This panel discussed and resolved any inconsistencies in the translation, ensuring semantic, conceptual, and cultural equivalence between the original and translated versions.
5. Pilot Testing: A pilot test was conducted with a small group of pregnant women (n = 15) to assess the clarity, comprehensibility, and cultural appropriateness of the translated items. Based on the feedback, minor modifications were made to improve the cultural relevance and clarity of the instrument.

These steps ensured that the PrAS was not only linguistically accurate but also culturally relevant for use with Indonesian pregnant women.

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Figure 1 illustrates the method for translating and reverse translating the PrAS.

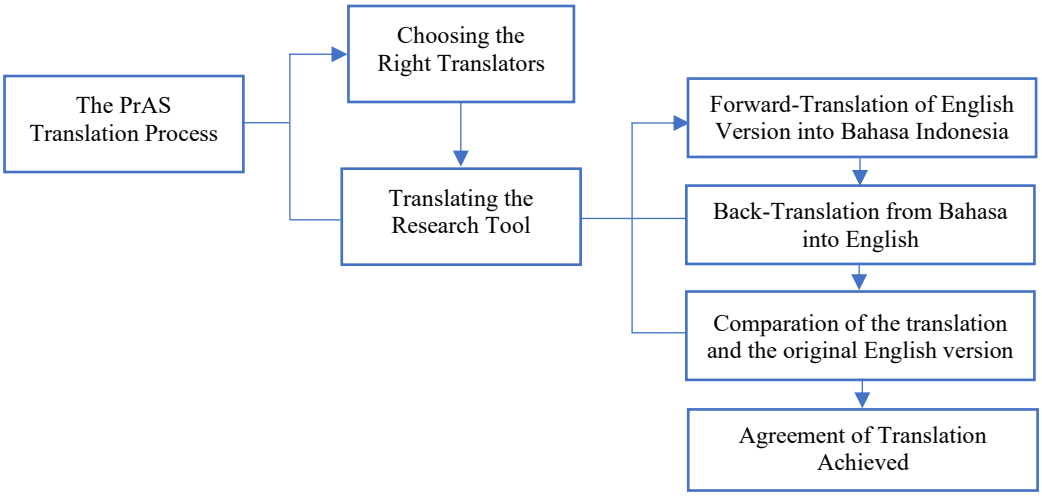

Figure 1. Flow Chart of Translation and Back Translation Process

(2) Psychometric Testing: Validity and Reliability Assessment

Given the cultural and linguistic diversity of global populations, it is essential to confirm the validity and reliability of translated instruments before their use in research and clinical settings (Sousa et al, 2011). The final Indonesian version of the PrAS was tested for psychometric properties in a sample of 92 pregnant women.

Construct validity was assessed using exploratory factor analysis (EFA), and internal consistency reliability was evaluated using Cronbach's alpha. Additionally, item-total and inter-item correlations were examined to evaluate the consistency and coherence of the instrument items.

Data Analysis

Six experts were invited to assess the translations. The experts comprised two maternity nurses, three maternity nursing lecturers, and one obstetrician. The literature specifies that a minimum of three content validity experts is required (Brislin et al, 1970, Lynn et al, 1986).

Ethical Consideration

The institutional review board of the Faculty of Nursing Universitas Indonesia granted approval for the study (No: KET-185/UN2.F12.D1.2.1/PPM.00.02/2023). Written informed consent from each participant was required, following a full explanation of the study's purpose.

3. RESULT

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A total of 92 pregnant women were enrolled to assess the reliability. Mostly were in reproductive ages. The average gestational age was 28 week gestation. Among the women, more than half were employed and completed secondary education (refer to Table 1). Most participants (63.04%) were multigravida.

Table 1. Characteristics of Participants

Participants' Characteristics	n	%
Age of Participants		
20 – 35 y.o	86	93.48%
>35 y.o	6	6.52%
Gestational Age		
≤12 weeks	7	7.61%
13 – 28 weeks	20	21.74%
29 – 40 weeks	65	70.65%
Employment Status		
Not working	55	59.78%
Working	37	40.22%
Education Background		
Primary	2	2.17%
Secondary	51	55.43%
Tertiary	37	40.22%
Parity		
Primigravida	34	36.96%
Multigravida	58	63.04%

Content Validity and Reliability

The ratio of content validity (CVR) analysis involves counting each item using the CVR formula = (Ne – N/2)/(N/2). In this formula, Ne represents the panelists number who selected "essential," and N signifies the panelists total number. In current research, N was determined to be 6). Of the 32 items, 30, 31, and 32 in the dimension of women's attitudes toward medical staff show a CVR value of 0.83; the others are 1.00. The closer the CVR is to 1.0, the more essential the item is regarded. Conversely, the closer the CVR is to -1.0, the less essential the item is (Brunton et al, 2021). The CVI depends on the number of experts. This study, which includes six or fewer experts, indicates that the I-CVI must be 1.00. This means that all experts

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must agree that the item is content valid (Huizink, et al 2017). Of the 32 items, only three items (30, 31, and 32) in the dimension of women's attitudes toward medical staff show a CVI value of 0.67; the others are 1.00. This indicates that the three items require revision prior to the data collection phase. The reliability of the 32-item result alpha Cronbach is 0.953.

The findings of this study, including the excellent Cronbach's alpha (0.953) and the Content Validity Index (CVI) results, demonstrate the reliability and validity of the Indonesian version of the Pregnancy-related Anxiety Scale (PrAS). While the preliminary findings are promising, further psychometric testing is recommended to establish the construct validity of the instrument. In particular, factor analysis (specifically exploratory factor analysis, or EFA) could be conducted in future studies to better understand the underlying dimensions of pregnancy-related anxiety and to confirm the scale's factor structure. This would enhance the scale's validity and support its continued use in diverse populations.

4. DISCUSSION

Pregnancy related anxiety scales (PrAS) is a questionnaire developed by Brunton, Saliba and Kohlhoff in 2015 in English and the reliability and validity process was carried out in 2017 (Brunton et al, 2021).

The questionnaire has 32 items and is comprised of eight main dimensions : 1) Items 1-6 address childbirth concerns, 2) Items 7-11 address body image concerns during pregnancy, 3) Items 12-14 address attitudes toward childbirth, 4) Items 15-20 address self-worry during pregnancy, 5) Items 21-23 address concerns about the baby, 6) Items 24-26 address pregnancy acceptance, 7) Items 27-29 address vaginal birth avoidance; 8) Items 30-32 address attitudes toward medical staff. Questions 21-23 indicate concerns about the baby, questions 24-26 identify acceptance of pregnancy, questions 27-29 are about avoiding vaginal delivery, and questions 30-32 identify attitudes toward medical staff .

A pregnant woman is considered to have high anxiety levels if she scores 128 or higher on the PrAS, with a cutoff value of 75.5. The PrAS evinces excellent internal consistency and reliability, with an alpha of 0.92 for the full scale and 0.84 to 0.95 for each subscale. Such commendable internal consistency and reliability renders the PrAS an exemplary instrument for research purposes.

The PrAS Adaptation Process

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The Brislin translation approach was used by the researchers to translate the instrument. As stated by Brislin (1970), the most widespread and strongly suggested translation process is translation-backtranslation. The translation process are as follows: first, translate from the source language to the target language. Then, back-translate from the translated version to the source language without any communication between the forward translator and the back-translator. Finally, compare the two versions in the original language.

The key to a high-quality translation is to select a good translator (Sousa & Rojjanasrirat, 2011). The instrument was translated from English into Indonesian, then back into English. The translators were fluent in both languages and had a good educational background and expertise in their fields so that they could understand the concepts contained in the instrument to be translated.

For this study, the original instrument was first translated from English to Indonesian and then back to English. Bilingual translators were employed for this study, and they had the necessary education to understand the terms. One translator is an English education expert who has studied anxiety. She translated the PrAS from English to Indonesian.

The second translator is a faculty member in the nursing department who translated back to English. This translator did reverse translation involves translating the result of a forward translation made by the first translator back into the original language without referring to the original version. During this step, the people in charge of translating the text did not discuss to each other to avoid affecting the other person's work by showing them the original instrument.

Then, the equivalence of the instrument between the versions in the source and target languages needs to be verified. In the event that the original and English translated iterations are found to be congruent, the Indonesian version of the tool is regarded as commensurate with the original one. Consequently, a discussion was orchestrated. The discourse centered on a comparison of the original version with its reverse translated counterpart. The back-translated version was also compared to the final Indonesia version.

While working on this project, the two translators and the researcher had different opinions. The original Indonesian version and its English translation were reviewed by the researcher, who focused on the terms and sentence structure. Discrepancies were found in items 3, 4, and 5. There were several differences of opinion among the forward translator, the back

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translator, and the editors regarding the terminology and construction of the source text and its Indonesian and reverse translations. The third item revealed a discrepancy. The forward translator used the word “sangat” while in the original version there is no word “very”, so the back translator suggests not to use the word “very”. Then in question item 4 the sentence “I feel afraid if during birth process, I feel my body would restrain and could not be moved” the word “restrain” is translated by the forward translation into the word “kaku”. The word kaku is translated back into “stif”. Then back translation suggests to keep using the word “terbatas” because it is considered more relevant so the back translator uses the word “retstrain” again.

Next in question item number 5, the forward translator translates the word “harm” into “dirugikan” and the back translator translates it into “aggrieved”. In this case the back translator suggests to keep using the word “harm” because it is considered to lead to physical injury which means in danger or injured. Ultimately, agreement was reached on all items by the researcher and the translators.

Psychometric Testing: Validity and Reliability Assessment of the Indonesian PrAS

A research instrument requires reliability testing combined with validity testing. The minimum number of content validity experts consists of at least three experts (15; 16). Therefore, to test the validity of the questionnaire, six experts were invited by the researcher to evaluate the instrument. The experts consisted of 2 experts with a maternity nursing background, 1 expert with a midwifery background, 2 with a psychology background, and 1 expert with an obstetrician background. The content validity index of this questionnaire assessed by six experts ranged from 0.67 to 1 I-CVI and had a S-CVI of 0.904. In this study, the CVI ranged from 0.83 to 1.00 and averaged 0.984. Polit and colleagues stated that for a scale, an average S-CVI of at least 0.90 is considered to be satisfactory. Additionally, an I-CVI greater than 0.50 is sufficient. In particular, they stated that an item with an I-CVI of 0.67 is considered "fair" by the Kappa evaluation criteria, and values of 0.86 and 1.00 are considered "excellent". Based on these results, the PrAS is appropriate for use in Indonesia.

Reliability of PrAS was assessed using Cronbach's alpha test in the SPSS data processor. Reliability is defined as the degree to which stable results are provided by an instrument. The Indonesian PrAS questionnaire's Cronbach's alpha reliability results were 0.953. As cited in

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Taherdoost (2016), Hinton et al. (2004) recommended the following four levels of reliability: ≥0.90 as very good, 0.7–0.9 as high, 0.5–0.7 as moderate, and ≤0.5 categorized as low. Thus, the PrAS reliability in this study is categorized as very good.

5. STUDY LIMITATIONS AND IMPLICATIONS

This study offers valuable insights into the validity and reliability of the Indonesian adaptation of the Pregnancy-related Anxiety Scale (PrAS), but several limitations should be noted. The sample was limited to pregnant women from a single community health center in Jakarta, which may not represent the broader Indonesian population, especially in rural areas. The cross-sectional design also limits the ability to track changes in anxiety over time or assess the long-term effectiveness of the PrAS. Additionally, excluding women with obstetric complications or a history of psychopathology may affect the scale's applicability to a wider range of pregnant women. While the translation and cultural adaptation followed established guidelines, some cultural nuances may still influence item interpretation, suggesting the need for further adaptation.

The findings have several implications for clinical practice and future research. The validated Indonesian PrAS provides healthcare providers with an effective tool for assessing pregnancy-related anxiety and improving interventions. Future research should validate the PrAS in different regions of Indonesia, including rural areas, and consider longitudinal studies to explore anxiety over time and its impact on pregnancy outcomes. Further refinement of the instrument is needed to address translation discrepancies and cultural differences, while expanding the study population to include women with high-risk pregnancies or from diverse socio-economic backgrounds could offer a broader understanding of pregnancy-related anxiety.

6. CONCLUSION

The Indonesian PrAS adaptation has proven to be a reliable and valid instrument for measuring pregnancy-related anxiety among Indonesian women. Given its demonstrated psychometric properties, it has significant potential for integration into clinical practice. Healthcare providers in Indonesia can use this tool as part of routine antenatal screenings to identify pregnant women at risk for pregnancy-related anxiety. Early identification of anxiety can facilitate timely interventions, improving both maternal and fetal health outcomes.

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Additionally, the PrAS can be used in clinical settings to tailor mental health interventions for pregnant women, providing personalized care that addresses specific concerns such as fears about childbirth, body image, and worries about the baby. Further research could focus on integrating the Indonesian PrAS into maternal care protocols, ensuring that it is used consistently across healthcare facilities to monitor and manage pregnancy-related anxiety effectively.

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8. FUNDING STATEMENT

This research did not receive any specific funding.

9. AUTHOR CONTRIBUTIONS

WK designed the study and drafted the original manuscript. NL read and revised the manuscript, conducted the data gathering, and prepared the data. YLA designed the study and drafted the original manuscript, directed the statistical analysis. AK conducted the translation, revised the manuscript, directed the statistical analysis, and revised the manuscript. The authors read and approved the final manuscript

10. CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this article.

involved.

11. DATA AVAILABILITY STATEMENT

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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