

## Polish Adaption of Pregnancy-Related Anxiety Questionnaire – Revised 2 (PRAQ-R2)

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### Summary

**Aim.** To create a Polish adaption of the Pregnancy-Related Anxiety Questionnaire – Revised 2 (PRAQ-R2), which is widely used abroad.

**Method.** PRAQ-R2 was translated into Polish by independent bilingual speakers. Forty-eight pregnant women completed our survey containing the Polish version of PRAQ-R2, Hospital Anxiety and Depression Scale – Modified (HADS-M), and a short sociodemographic questionnaire. After a week, they were asked to complete the PRAQ-R2 questionnaire again. Parametric statistics were used to assess psychometric properties.

**Results.** Our study has shown a good test-retest correlation of 0.70. Participants completed the survey twice (in t1 and after one week – in t2). Cronbach's alpha was calculated as 0.847 at t1 and 0.895 at t2. There was a moderate correlation between PRAQ-R2 at both time points and the HADS-M scale and its subscales.

**Conclusions.** Our Polish adaption of PRAQ-R2 has shown good validity and reliability. It has good internal consistency. Moderate correlation with HADS-M proves that pregnancy-related anxiety (PrA) is a distinctive disorder from generalized anxiety disorder and depressive disorder. Given the great frequency and the burden of PrA, we believe that PRAQ-R2 should be routinely used among physicians working with pregnant patients.

**Key words:** pregnancy-related anxiety, PRAQ-R2, Polish adaption

### Introduction

Prenatal anxiety has been proven to be associated with adverse effects for both a mother and a child. In anxious pregnant women, it may be a risk factor for both medical issues, like hypertensive disorder [1], and psychiatric issues, such as postpartum depression [2], antenatal depression [3], or anxiety disorders later in life [4]. Moreover,

anxiety in pregnancy has been proven to decrease the tendency to breastfeed [5] and disrupt mother-child bonding [6, 7]. In regard to adverse neonatal outcomes, scientists have described anxiety disorders in pregnant women to be linked to preterm birth [8], low birth weight [9], poorer condition at delivery, measured as APGAR score [10], improper brain development [11], and behavioural issues [12].

The prevalence of anxiety is more significant in pregnant women than in the general population, which is understandable since it is believed that as many as 48% of women experience traumatic childbirth [13].

Given the burden of pregnancy-related anxiety on maternal and neonatal health, it is vital to use a screening tool to identify women at greater risk of developing clinically relevant prenatal anxiety [14, 15]. Pregnancy-related anxiety (PrA) is a specific type of anxiety experienced by pregnant women, who worry about childbirth, the wellbeing of themselves and the baby, and impending motherhood [16]. Research shows that the main factors of worry include the health of mother and baby, labour and birth, relationship with the child, body image, negative mood and affect, and social factors [17]. As the clinical presentation is distinct from generalized anxiety disorder (GAD), PrA does not meet the criteria from the Diagnostic and Statistical Manual (DSM) and is divergent from the criteria in ICD-10 [18]. That is why it is crucial to use a tool to assess the features specific to PrA because questionnaires used in assessing generalized anxiety disorders, such as STAI and GAD-7, can overlook individual aspects of anxiety experienced by pregnant women [16, 19, 20]. Moreover, Price et al. [21] show that items in DASS-21 overlap with common pregnancy and postpartum symptoms that do not necessarily indicate an anxiety disorder [16, 20].

There are few tools developed to measure the specific features of PrA. Pregnancy-Specific Anxiety Scale (PSAS) devised by Brunton et al. [16] is described as lacking the broadness of scope for such a multidimensional issue as prenatal anxiety. Pregnancy-Related Anxiety Scale (PrAS) is claimed to be a good tool for research settings as it has better validity than PSAS and good reliability [20]. The downside is that it contains 33 items, so we believe it may be inconvenient to use in a clinical setting. Cambridge Worry Scale (CWS) [22] is a 16-item tool for assessing the extent and content of worries in specific situations. It was shown to have good validity and reliability [23], but it addresses psychological distress rather than prenatal anxiety. Finally, Edinburgh Postnatal Depression Scale (EPDS) [24] is described as a helpful device, but focusing on postpartum symptoms.

Van den Bergh created the Pregnancy-Related Anxiety Questionnaire (PRAQ) in 1990 [25]. Subsequently, Huizink et al. [26] derived a shortened version – Pregnancy-Related Anxiety Questionnaire – Revised (PRAQ-R). As it is only 10 items, it is straightforward to use in clinical practice, but it is addressed only to first-time mothers [27]. The item “I am anxious about the delivery because I have never experienced one before” is not applicable for use in women who experienced labour before. Therefore, the authors suggested rephrasing this item into “I am anxious about the delivery” so the new scale, PRAQ-R2, could be used among nulliparous and parous women [28]. This tool focuses on three dimensions of pregnancy-related anxiety: (1) fear of giving birth, (2) worries about bearing a physically or mentally handicapped

child, and (3) concern about own appearance. Both total and factor scores show good reliability and validity regardless of parity.

PRAQ-R and subsequently PRAQ-R2 are widely used worldwide. The tools were validated and translated into multiple languages [23, 29-31]. Yet, PRAQ-R2 still lacks the Polish translation. There is no tool used in Poland to assess prenatal anxiety. Having such a tool is crucial for a holistic model of care, where physical and mental aspects of maternal health are both important. Routine screening tests for antenatal anxiety, available not only to doctors, but also to nurses and midwives, would lead to a more efficient diagnosis of pregnancy-related anxiety, thereby minimizing the risk of severe consequences, which would benefit both mothers and their children [17, 32].

This study aims to create the first Polish adaption of the Pregnancy-Related Anxiety Questionnaire – Revised 2 (PRAQ-R2). In our opinion, it is a short yet very reliable tool that could be easily and commonly used in clinical practice.

## **Material and methods**

### **Sample**

Forty-eight women, who were patients of a private obstetrical facility in Poland, completed the questionnaire. Patients were offered to participate in the study while attending their Ob-Gyn appointment. The inclusion criteria were: being pregnant, not having a chronic disease, consent to participate in the study, and speaking Polish. The study was accepted by the Ethics Committee.

### **Instruments**

Pregnancy-Related Anxiety Questionnaire – Revised 2 [28] is a 10-item questionnaire to assess antenatal anxiety regardless of parity. It contains three dimensions: fear of giving birth, worries about bearing a physically or mentally handicapped child, and concern about own appearance. The original questionnaire is in English. This questionnaire is short and easy in clinical use, and also has good face validity.

Hospital Anxiety and Depression Scale (HADS) is a 14-item questionnaire containing two subscales to assess anxiety and depression [33]. This tool has good reliability and performs well when used in non-psychiatric hospital clinics [15], yet it is not acceptable as the only screening method for anxiety in pregnant women [23, 34]. The Polish adaption is a modified 16-item version of the Hospital Anxiety and Depression Scale – Modified.

### **Translation of PRAQ-R2**

The PRAQ-R2 questionnaire required Polish translation. Initially, two independent people who did not participate in the study and were not a part of the research group were asked to translate the questionnaire into Polish. These people were not related to the medical sector and were asked to translate the questionnaire in a way that was

most intuitive for them. Then we asked another person to create one Polish version of the questionnaire from these two translations. This person was not familiar with the original version of the questionnaire. The next step was to translate the created Polish version of the questionnaire back into English. The person responsible for this stage did not know the original version of the questionnaire. We compared the original version and the final version translated by those involved in the translation process. As these versions were almost identical, we did not make any changes to the Polish version created. All people involved in the translation process were Polish and spoke fluent English.

At first, we asked the participants to answer the questions from our Polish version of PRAQ-R2 and HADS-M. The patients returned the completed questionnaires to their Ob-Gyn physicians. We asked the participants to provide us with their e-mail addresses to send them a link to the second part of the study. After a week from filling in the questionnaires for the first time, we e-mailed the participants. Patients were asked to fill in the questionnaire for the second time after the time difference of one week after the first attempt. This length of time was long enough to avoid a practice effect but short enough, so that the underlying state does not change significantly. They were provided with a link to the PRAQ-R2 questionnaire and asked to answer the questions again. They did not answer the HADS-M questions for the second time.

All participants, who agreed to take part in the study and completed the first part of it, completed the second part.

## Results

### Sample

Forty-eight women filled in two questionnaires (PRAQ-R2 and HADS-M) at the first time point (t1); all completed the PRAQ-R2 questionnaire at the second time point (t2). None of them were in the first trimester of pregnancy, 12 women were in the second trimester (25%), and 36 were in the third trimester of pregnancy (75%). The age of the participants was between 17 and 40 (mean 28.57, median 31).

### Psychometric properties

The ratings of the entire scales: PRAQ-R2 and HADS-M and the anxiety and depression subscales of the HADS-M scale did not differ significantly from the normal distribution (Shapiro-Wilk test), so parametric statistics were used.

The Pearson correlation coefficient between PRAQ-R2 total ratings at the first and second time point (Table 1) is of average value (0.70). Still, it is higher than all correlations between PRAQ-R2 and HADS-M scales. Correlations between total values and the subscales of the HADS-M scale have a greater value than the correlations with the PRAQ-R2 scale at both time points.

Table 1. Test-retest results and correlations with the HADS scale

Variable			Correlations			
	Mean	Std. Dev.	PRAQ-R2 t1	PRAQ-R2 t2	HADS total	HADS anxiety
PRAQ-R2 t1	32.7	8.49				
PRAQ-R2 t2	31.5	9.37	0.70			
HADS-M total	19.3	9.78	0.59	0.58		
HADS-M anxiety	9.17	4.58	0.61	0.62	0.94	
HADS-M depression	6.44	4.52	0.52	0.54	0.95	0.83

PRAQ-R2 – Pregnancy-Related Anxiety Questionnaire – Revised 2; t1 – time point 1; t2 – time point 2 (one week after t1); HADS-M – Hospital Anxiety and Depression Scale – Modified; Std. Dev. – Standard Deviation

The Cronbach's alpha coefficients of internal consistency (for t1 and t2, respectively) are shown in Tables 2 and 3. In both time points, the PRAQ-R2 scale is characterized by high consistency, all items of the scale increase the alpha coefficient.

Table 2. Cronbach's alpha and average inter-item correlations at t1

Item	Cronbach's alpha: 0.847; Standardized alpha: 0.852; Average inter-item correlation: 0.398				
	Mean if deleted	Var. if deleted	Std. Dev. if deleted	Itm-Totl Correl.	Alpha if deleted
1	28.81	61.49	7.84	0.48	0.839
2	29.04	60.21	7.76	0.52	0.835
3	29.64	58.23	7.63	0.52	0.836
4	28.77	58.43	7.64	0.68	0.824
5	29.71	55.00	7.48	0.54	0.835
6	29.89	56.93	7.54	0.62	0.826
7	30.13	58.86	7.67	0.47	0.840
8	29.60	57.66	7.59	0.52	0.835
9	29.31	57.13	7.56	0.54	0.834
10	29.46	56.83	7.54	0.63	0.826

Var. – variation; Std. Dev. – Standard Deviation; Itm-Totl Correl. – Correlation between a single item and the total score

Table 3. Cronbach's alpha and average inter-item correlations at t2

Item	Cronbach's alpha: 0.895; Standardized alpha: 0.896; Average inter-item correlation: 0.51				
	Mean if deleted	Var. if deleted	Std. Dev. if deleted	Itm-Totl Correl.	Alpha if deleted
1	27.71	70.83	8.42	0.71	0.880
2	27.92	71.49	8.46	0.62	0.885

*table continued on the next page*

3	28.54	71.21	8.44	0.57	0.889
4	27.96	70.25	8.38	0.69	0.881
5	28.69	70.34	8.39	0.60	0.887
6	28.92	73.24	8.56	0.54	0.891
7	28.81	70.49	8.40	0.57	0.889
8	28.20	69.50	8.34	0.67	0.882
9	28.06	68.18	8.26	0.71	0.879
10	28.31	69.21	8.32	0.73	0.878

Var. – variation; Std. Dev. – Standard Deviation; Itm-Totl Correl. – Correlation between a single item and the total score

## Discussion

Our study aimed to translate the English version of the Pregnancy-Related Anxiety Questionnaire – Revised 2 into Polish. We also aimed to examine the validity and reliability of this tool, and to provide evidence of psychometric properties of the Polish adaption of PRAQ-R2.

Table 4 contains items of the Polish adaption of PRAQ-R2. Our study has shown a good test-retest correlation of 0.70. Cronbach's alpha was calculated as 0.847 at t1 and 0.895 at t2. It proves the internal consistency of the test since these high scores prove the high correlation of each item with the total score and averaging the correlation coefficients. Both good test-retest correlation and high value of Cronbach's alpha prove good reliability of the Polish adaption of PRAQ-R2.

Table 4. **Items of Polish adaption of PRAQ-R2**

Item	
1	Odczuwam lęk na myśl o porodzie.
2	Jestem zaniepokojona bólem oraz skurczami związanymi z porodem.
3	Martwi mnie fakt, że po porodzie mogę nie odzyskać mojej dawnej figury.
4	Zdarza mi się myśleć o tym, że nasze dziecko będzie miało problemy ze zdrowiem oraz, że będzie podatne na wiele chorób.
5	Przejmuję się, że wyglądam nieatrakcyjnie.
6	Martwię się, że nie będę w stanie kontrolować się podczas porodu i boję się, że nie będę mogła powstrzymać się od krzyku.
7	Jestem zaniepokojona dużym wzrostem masy mojego ciała.
8	Obawiam się, że dziecko będzie miało problemy z rozwojem umysłowym albo będzie cierpiało z powodu uszkodzenia mózgu.

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9	Boję się, że nasze dziecko urodzi się martwe albo umrze w trakcie porodu lub tuż po nim.
10	Boję się, że nasze dziecko będzie cierpiało z powodu fizycznego defektu albo coś będzie odbiegać od normy w jego wyglądzie fizycznym.

Our results show a moderate correlation between PRAQ-R2 at both time points and the HADS-M scale and its subscales. This indicates some common symptoms of generalized anxiety disorder or depressive disorder and pregnancy-related anxiety. However, pregnancy-related anxiety is a distinctive syndrome and has some unique features. The study results are concordant with the findings of previous research on anxiety during pregnancy [16, 25, 35].

It is the first Polish adaption of PRAQ-R2. Nonetheless, PRAQ-R2 is a widely used questionnaire, and there are multiple adaptations of this tool in use worldwide. Our research results, which prove good test-retest correlation and high internal consistency of the Polish version of PRAQ-R2, are consistent with the results from other publications. Validation and factor analysis of a Chinese version of PRAQ-R shows high internal consistency, with Cronbach's alpha 0.78-0.96. Moreover, it shows good face validity of this instrument [29]. Also, the Turkish adaption of PRAQ-R2 proves the high reliability of the examined psychometric tool [30].

According to the authors, the Polish adaption of PRAQ-R2 is short and easy in use. It has good reliability and validity and hence, could be used in everyday clinical practice. We believe PRAQ-R2 should be used routinely in all pregnant patients in the second trimester, when the prevalence of PrA is noted to be highest [36, 37].

## Conclusions

The results from this research prove the good reliability of our Polish adaption of PRAQ-R2. Although pregnancy-related anxiety has some common features with GAD and MDD, it is a distinctive syndrome and necessitates a specific instrument to be used for screening. This tool is a short instrument that can be used in an everyday clinical environment. Since PrA is a frequent condition in pregnancy with significant adverse effects for the mother and child, routine use of the Polish version of PRAQ-R2 should be considered by doctors taking care of pregnant patients.

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