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Psychometric Properties of the Peripartum Depression Predictors Scale

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ABSTRACT

Objective: Postpartum depression, one of the most common childbirth-related complications, affects one in five women, yet half of the cases go unnoticed. Therefore, screening tools are needed to early identify women at risk of postpartum depression. The present research was conducted to develop the Peripartum Depression Predictors Scale (PDPS) and assess its validity and reliability.
Methods: This study was designed as methodological research. Pregnant women (n = 482) who underwent prenatal care at a training and research hospital in Türkiye between March and June 2023 participated in the study. The reliability analyses of the scale were performed using Cronbach's alpha and the split-half reliability coefficients. Exploratory and confirmatory factor analyses were conducted for construct validity.
Results: The items with total correlation values lower than 0.30 were excluded from the analysis. A five-factor structure consisting of 21 items was obtained through exploratory factor analysis. The explained variance of the scale was determined as 55.785%. According to the results of the first-order multifactor analysis, the goodness of fit indices of the scale indicated a perfect fit (RMSEA = 0.044; χ2(CMIN/DF) = 1.923; GFI = 0.972; AGFI = 0.964). The Cronbach's alpha value was 0.836 for the entire scale and ranged between 0.603 and 0.825 for the subscales.
Conclusion: It was found that the PDPS is a valid and reliable measurement instrument. The scale can be utilized to determine the predictors of peripartum depression during any stage of pregnancy and to identify the risk for postpartum depression.

Keywords: Peripartum depression, pregnancy, psychometrics, reliability, scale development, validity.

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Introduction

The occurrence of mood symptoms that do not fully meet the diagnostic criteria for major depression during pregnancy or within the first four weeks after childbirth is defined as 'peripartum depression' (American Psychiatric Association, 2013). Untreated depression can result in chronic and recurrent depression, and, in the future, it can also lead to emotional, behavioral, cognitive, and interpersonal problems in the mother (Horowitz & Goodman, 2005; Stewart et al., 2003). Peripartum depression causes permanent negative mental and physical impacts, particularly on the mother and baby (Dekel et al., 2019; Saharoy et al., 2023). Depressed women are captured in a vicious circle in which they become more upset and frustrated and have progressively lower perceptions of competence, which creates an atmosphere that is not conducive to the mothers' personal or the child's optimal development (Slomian et al., 2019). In the most extreme cases, women may commit suicide and/or kill their children (Valadares et al., 2020). Therefore, early detection of peripartum depression is an urgent and vital issue.

Postpartum depression, which is one of the most common childbirth-related complications, affects 10-20% of women (O'Hara & Segre, 2014). That is, almost one in five women may develop postpartum depression (Wang et al., 2021). However, around 50% of postpartum depression cases go unnoticed (Brownlee, 2022). Given the increasing incidence of peripartum depression, a comprehensive assessment of its prevalence and identification of risk factors at an early stage is of clinical importance for improving the quality of life of pregnant women and supporting the healthy growth of infants (Liu et al., 2022). It is the responsibility of the entire healthcare team to notice the symptoms earlier, support the mother psychologically, guide the family on how to cope with this situation, and even inform the woman about it before the delivery (Ay et al., 2018). Midwives and nurses, especially those who are in frequent contact with postpartum women, need diagnostic tools to guide postpartum depression, detect the presence of symptoms, and aid women in receiving mental health assessment and appropriate treatment (Branquinho et al., 2022; Horowitz & Goodman, 2005; Segre et al., 2010).

The Edinburgh Postnatal Depression Scale (EPDS), a valid and reliable measurement tool developed by Cox et al. (1987) for the diagnosis of postpartum depression, has been used for many years to measure the level of postpartum depression and the changes in severity. Nonetheless, identifying risks during pregnancy would be a more effective step for early diagnosis of postpartum depression (Ikeda & Kamibeppu, 2013). The first valid and reliable measurement instrument that evaluates the risk factors for depression during the peripartum period is the Postpartum Depression Predictors Inventory (PDPI) developed by Beck (2002). Predicting depression before it even appears is also remarkably noteworthy for early diagnosis and ensuring appropriate referrals, which is especially paramount in developing countries. However, instruments that can identify these risks from the very early stages of pregnancy, without the influence of factors associated with childbirth and postpartum, remain limited. There is a need for an easily responded, brief, and practical instrument predicting the risk factors before delivery for depression during pregnancy, childbirth, and the postpartum year. This research was conducted to develop the Peripartum Depression Predictors Scale to determine the risk for peripartum depression and to assess its validity and reliability.

Methods

Setting and Study Design

This methodological research was conducted at the Training and Research Hospital in Amasya, Türkiye. The data were collected between March and June 2023.

Participants

The research population consisted of pregnant women admitted to the hospital during the data collection period and followed up during the prenatal period. 482 pregnant women who provided informed consent and met the sampling criteria formed the study sample. The inclusion criteria involved being at least 18 years old, having a healthy pregnancy, being married, being literate, being accessible by phone or e-mail, and being willing to participate in the study. Having just found out about her pregnancy, having a risky pregnancy, being separated from her husband, having taken psychiatric medication, or undergoing psychiatric treatment in the last six months formed the exclusion criteria of the study.

Measures

Personal Information Form: The form prepared by the researchers contains information about pregnant women's age, number of pregnancies, gestational week, and estimated due date.

The Peripartum Depression Predictors Scale (Draft Form): The scale, designed to determine the predictors of peripartum depression before delivery and to identify pregnant women at risk for postpartum depression, was composed of 48 items. Each risk factor, the scale item, was of the three-point Likert-type. The choices were categorized as 'Yes' (indicating the presence of risk), 'Partially' (indicating the partial presence of risk), and 'No' (indicating the absence

of risk) and were graded as 'Yes' (2), 'Partially' (1), 'No' (0), respectively. Reverse scoring was applied to 18 items of the draft scale. The total score obtained indicates a high risk for peripartum depression. The scale is a self-report instrument that can be administered either by the pregnant woman herself or by a healthcare professional through an interview. It can be completed quickly and easily.

The Edinburgh Postnatal Depression Scale (EPDS): It is a self-report scale developed to determine the risk for postpartum depression and to measure its level and changes in severity (Cox et al., 1987). The validity and reliability study of the scale in Turkish was conducted by Engindeniz et al. (1996). The EPDS is of a four-point Likert type and consists of 10 items. 3, 5, 6, 7, 8, 9, and 10 items of the scale exhibit decreasing severity and are scored as 3, 2, 1, 0. Moreover, 1, 2, and 4 items are scored as 0, 1, 2, 3. Total scale scores range from 0 to 30, and the cutoff is 13. Women with a score of >13 are considered to be at risk for postpartum depression. The Cronbach's alpha of the scale was 0.79 (Engindeniz et al., 1996).

Phases of the Peripartum Depression Predictors Scale (PDPS) Development

Item Pool Development

The PDPS was designed to identify the predictors of peripartum depression before delivery and to determine pregnant women at risk for postpartum depression. A pool of items was created for the draft scale. According to the findings obtained by reviewing the existing literature, risk factors for peripartum depression were classified as sociodemographic characteristics (age, educational status, economic status, place of residence), relationship with husband, marriage, pregnancy planning and process, delivery, feelings and thoughts about the baby, psychological changes, various psychosocial incidents, family and friend support, and spirituality. The item pool development was concluded with a total of 52 positive and negative statements created within this scope.

Content Validity

Ten field experts (8 of them in Psychiatric Nursing, 2 of them in Midwifery) were consulted via e-mail for the content validity of the 52-item draft scale. The experts were asked to evaluate the appropriateness of the scale items based on Davis' technique (1992). The Content Validity Index (CVI) was computed for each item. The CVI value higher than 0.80 is interpreted as relevant. The items with less than this value should be eliminated. The CVI value for the 48 items was between 0.90 and 1.00, for which minor revisions were recommended. The CVI value for the four items was found to be less than 0.80, and thus, they were removed from the scale. Following the necessary modifications, the final version of the scale was presented for expert opinion regarding the language, and the statements were revised.

Sample and Data Collection

The basic rule for determining the sample size in scale development studies is that there should be at least 5-10 participants for each scale item, and the acceptable sample size recommended for a study is usually over 100 (Li & Liu, 2018). Since the draft scale comprised 48 items, the research was completed with a sample size reaching ten times that amount, consisting of 482 pregnant women.

At the initial phase of the research, women visiting the hospital for prenatal care were informed about the purpose of the study, and their willingness to participate was solicited. The women who agreed to participate in the study and met the research criteria filled out an informed consent form. This form included the researcher's contact information, and participants who volunteered were asked to provide a telephone number at the next stage of the study. Face-to-face interviews with a total of 482 pregnant women were conducted.

In the second phase of the research, the participants whose contact information was previously received were contacted by phone within six weeks after delivery. They were asked to fill out the EPDS online. A second reminder message was sent to those who did not respond within a week. 37 of the participants (n = 482) had not shared their contact information, and three of them stated that they had a stillbirth. 11 of them could not be contacted as their phone number was wrong, and 198 never responded. As a result, postnatal follow-ups were performed with 233 respondents.

Data Analysis

The data were analyzed via SPSS 25 and AMOS 21. Descriptive statistical methods were conducted to analyze the data. Validity and reliability tests that were relevant to the dataset were performed. The reliability analyses of the scale were performed using Cronbach's alpha and the split-half reliability coefficients. Exploratory and confirmatory factor analyses were conducted for construct validity. Item discrimination was performed by using the upper-lower 27% group method. The cutoff value was computed by ROC analysis.

Ethical Statement

Prior to the research, written permission was obtained from Amasya University Non-Interventional Clinical Research Ethics Committee (decision No. 12 dated February 2, 2023) and Amasya Provincial Health Directorate (decision No. 209762975 dated February 21, 2023). Oral and written

informed consent were obtained from the study's participants.

Results

Of the pregnant women participating in the study, 46.9% were between 25-30 years old, and their mean age was 27.30 ± 4.47. 50.8% of them were primiparous, and 49.2% were multiparous. 53.9% were in their third trimester, 28.4% were in their second trimester, and 17.6% were in their first trimester.

Table 1.
Item-Total Correlations of the PDPS

	Items (48 items)	Item-total correlations	Cronbach's alpha if item deleted
1	I am satisfied with my relationship with my husband.	0.351	0.895
2	I have difficulty communicating with my husband.	0.341	0.894
3	I am experiencing serious problems in getting along with my husband.	0.379	0.894
4	I think I was married off at a very young age.	0.305	0.895
5	I am satisfied with my marriage in general.	0.340	0.895
6	I think I got pregnant early in my marriage.	0.331	0.895
7	I got pregnant willingly.	0.303	0.895
8	I feel guilty for getting pregnant.	0.333	0.895
9	I think I am too young to be a mother.	0.322	0.895
10	I feel ready to be a mother.	0.357	0.894
11	I have had a risky pregnancy before.	0.128	0.898
12	I am terrified of experiencing an adverse incident during pregnancy.	0.431	0.893
13	I am worried about a health problem that may arise during pregnancy.	0.395	0.894
14	I am satisfied with my pregnancy in general.	0.431	0.893
15	I feel ready for the delivery.	0.409	0.894
16	I have concerns about how I will give birth (vaginal delivery/cesarean section).	0.339	0.895
17	The thought of giving birth extremely scares me.	0.548	0.891
18	I think I do not have adequate knowledge about baby care.	0.267	0.895
19	I worry that I will struggle financially to meet the baby's needs.	0.359	0.894
20	I do not trust myself when it comes to baby care.	0.267	0.895
21	I often worry about my baby's health.	0.435	0.893
22	I am constantly afraid of losing my baby.	0.427	0.893
23	The gender of my baby is not important to me.	0.102	0.898
24	The gender of the baby is not important to my husband.	0.127	0.898
25	I think my husband is uninterested in the baby.	0.285	0.895
26	I trust my husband in terms of baby care and responsibility.	0.294	0.895
27	My husband always supports me during pregnancy.	0.393	0.894
28	My family always supports me during pregnancy.	0.355	0.894
29	I have no one to be with me after delivery.	0.344	0.895
30	I often feel lonely and isolated.	0.553	0.892
31	I do not want to leave the house.	0.454	0.893
32	I constantly have negative thoughts.	0.660	0.890
33	Praying makes me feel better.	0.118	0.896
34	I feel myself valuable.	0.490	0.893
35	There are times when I feel unhappy.	0.567	0.891
36	There are times when I feel anxious.	0.524	0.892
37	The changes in my body due to pregnancy make me sad.	0.390	0.894
38	I feel powerless and helpless.	0.615	0.891
39	I feel that my self-confidence has diminished.	0.554	0.892
40	I have difficulty making decisions.	0.536	0.892
41	I need to push myself to do something.	0.447	0.893
42	I do not enjoy the things I used to enjoy.	0.588	0.891
43	I have recently experienced a serious incident that has affected me very much.	0.291	0.895
44	In general, I am satisfied with my life.	0.462	0.894
45	I am satisfied with where I live.	0.352	0.894
46	My relationship with my parents is pretty good.	0.390	0.894
47	My relationship with my husband's family is pretty good.	0.368	0.894

48	I have friends that I like to spend time with.	0.234	0.896

Table 2.
Exploratory Factor Analysis of the PDPS

Items (21 items)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Item39	0.765				
Item40	0.720				
Item38	0.701				
Item42	0.638				
Item30	0.607				
Item32	0.602				
Item13		0.801			
Item12		0.790			
Item21		0.728			
Item22		0.682			
Item6			0.751		
Item9			0.722		
Item7			0.658		
Item8			0.511		
Item28				0.758	
Item46				0.688	
Item44				0.538	
Item45				0.484	
Item3					0.760
Item2					0.738
Item1					0.605
Eigenvalue	5.493	2.143	1.492	1.362	1.225
Explained Variance	15.624	12.105	9.467	9.459	9.129
KMO = 0.841; χ2(210) = 2967.415; Bartlett's test of Sphericity (p = 0.000), The Total Explained Variance = 55.785					

Item-Total Correlations

The draft scale's internal consistency was determined using Cronbach's alpha. 11 items (4, 11, 18, 20, 23, 24, 25, 26, 33, 43, 48), of which item-total correlation values were less than 0.30, were removed from the analysis (Table 1).

Exploratory Factor Analysis

Before the exploratory factor analysis, the Kaiser-Meyer-Olkin (KMO) test was applied to test the adequacy of the sample size. The KMO was found to be 0.841, indicating that the sample size and the items were adequate for factor analysis. Upon examination of Bartlett's test of Sphericity results, it was seen that the obtained Chi-square value was significant (χ2(210) = 2967; p < .01).

After confirming the suitability of the data for factor analysis, exploratory factor analysis was performed using the Principal Components Analysis method to explore the scale's factor structure. By applying the Varimax rotation method, it was determined that there was a nine-factor structure. A five-factor structure was obtained by excluding items that showed overlap (items 5, 15, 19, 34, 36, 29, 14, 16, 17), had low factor loadings (items 31, 35, 37, 41, 10, 47) and did not make sense where they were (item 27). It was found that the five-factor structure of the scale was statistically and significantly adequate. The total explained variance of the scale consisting of 21 items and five factors was 55.785% (Table 2).

The scree plot revealed that the 21-item structure showed an ideal distribution under five factors. It was observed that there were five factors with eigenvalue greater than 1 (Figure 1). The factors were 'Symptoms of Depression' (items 30, 32, 38, 39, 40, 42), 'Anxiety' (items 12, 13, 21, 22), 'Readiness for Motherhood' (items 6, 7, 8, 9), 'Family Support and Life Satisfaction' (items 28, 44, 45 46), and 'Relationship with Husband' (items 1, 2, 3).

Confirmatory Factor Analysis

The scale's Structural Equation Modeling (SEM) results were found significant with p =.000, indicating that it was related to the 21 items and five-factor structure. Covariance was established between the same factors in the model (Figure 2). The factor loadings were observed to be greater than 0.30 and between 0.357 and 0.774.

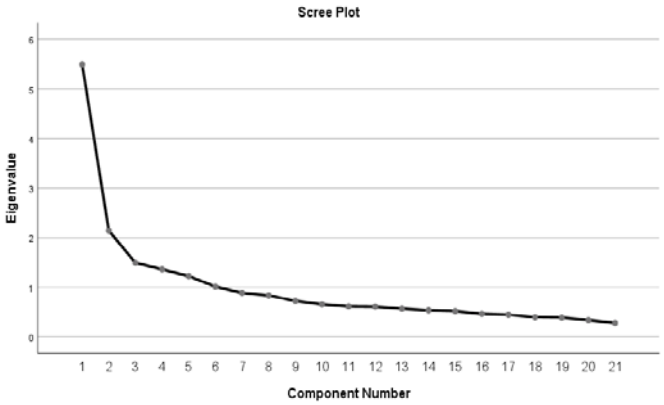

Figure 1.

Scree Plot Graph of Component Numbers

According to the results of the first-order multi-factor analysis, the goodness of fit indices of the scale indicated a perfect fit with *RMSEA* = 0.044, χ2(*CMIN/DF*) = 1.923, *GFI*= 0.972, and *AGFI*= 0.964. Moreover, the other fit values were acceptable (Table 3).

Item Analysis

The results regarding the t-test for the independent group that showed the item discrimination powers after structural validity and item-total correlations were examined (Table 4). The item-total correlation values were above 0.30 and varied between 0.308 and 0.654. At the same time, all the items were found to be consistent with each other.

Table 3.
Confirmatory Factor Analysis of the PDPS

Fit Indices	Perfect Fit Criteria	Acceptable Fit Criteria	Before Modification	After Modification
χ2/*SD*	$0 \leq \chi^2/df \leq 3$	$3 \leq \chi^2/df \leq 5$	2.296	1.923
RMSEA	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	0.052	0.044
CFI	$0.95 \leq CFI$	$0.85 \leq CFI$	0.866	0.905
GFI	$0.90 \leq GFI$	$0.85 \leq GFI$	0.966	0.972
AGFI	$0.90 \leq AGFI$	$0.85 \leq AGFI$	0.957	0.964
IFI	$0.90 \leq IFI \leq 1.00$	$0.80 \leq IFI$	0.868	0.907
TLI	$0.90 \leq TLI$	$0.80 \leq TLI$	0.842	0.888
NFI	$0.90 \leq NFI$	$0.80 \leq NFI$	0.788	0.823

χ2/SD: Chi-square/degree of freedom, RMSEA: Root-mean-square error of approximation, CFI: Comparative fit index, GFI: Goodness of fit index, AGFI: Adjusted goodness of fit index, IFI: Incremental fit index, TLI: Tucker Lewis index, NFI: Normed fit index

In order to determine the discrimination power of the items in the scale, the raw scores obtained from the scale were sorted from highest to lowest, and the mean scores of the groups that formed the lowest 27% and the highest 27% were compared with the independent group t-test.

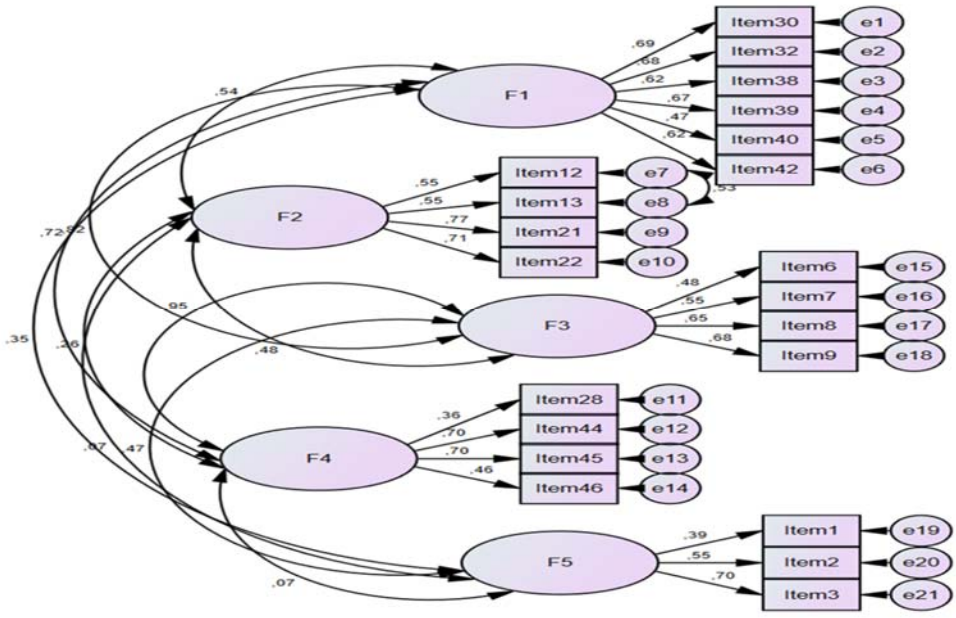

Figure 2.

First-Order Multi-Factor Confirmatory Factor Analysis of the PDPS

Table 4.
Item Analysis of the PDPS

Items	*r*	Cronbach's alpha if item deleted	*t*	*p*
Factor 1				
Item30	0.553	0.806	12.020	.000*
Item32	0.621	0.791	13.775	.000*
Item38	0.646	0.790	10.768	.000*
Item39	0.654	0.789	9.743	.000*
Item40	0.570	0.807	19.340	.000*
Item42	0.577	0.803	19.092	.000*
Factor 2				
Item12	0.602	0.716	35.707	.000*
Item13	0.601	0.718	35.256	.000*
Item21	0.588	0.724	22.810	.000*
Item22	0.549	0.744	17.520	.000*
Factor 3				
Item6	0.496	0.468	19.602	.000*
Item7	0.424	0.499	9.999	.000*
Item8	0.331	0.601	3.698	.000*
Item9	0.442	0.511	6.735	.000*
Factor 4				
Item28	0.433	0.514	7.712	.000*
Item44	0.449	0.517	7.594	.029*
Item45	0.308	0.618	9.371	.000*
Item46	0.414	0.528	7.838	.000*
Factor 5				
Item1	0.379	0.614	4.356	.000*
Item2	0.504	0.473	12.509	.000*
Item3	0.512	0.400	7.328	.000*

*$p < .05$

As a result of the comparison, it was found that there was a statistically significant difference between the mean scores of the lowest and highest group items ($p < .05$). Of the 21, six were (1, 7, 28, 44, 45, 46) reversed items.

Table 5.
Reliability and Split-half reliability of the PDPS

	Cronbach's Alpha
PDPS	0.836
Factor 1	0.825
Factor 2	0.779
Factor 3	0.603
Factor 4	0.614
Factor 5	0.613
Part 1 = Item 1, 3, 7, 9, 13, 22, 31, 38, 40, 44, 46	0.689
Part 2 = Item 2, 6, 8, 12, 21, 28, 32, 39, 42, 45	0.703
Correlation between halves	0.813
Spearman-Brown coefficient	0.897
Guttman Split-Half coefficient	0.897

Reliability

The Cronbach's alpha value was calculated as 0.836 for the entire scale and between 0.603 and 0.825 for the subscales (Table 5). For the split-half reliability of the scale, items were divided into odd-numbered and even-numbered items. As a result, the correlation coefficient between the two halves was computed as 0.813 (Table 5).

Cutoff Value

It was discovered that there was a statistically significant positive relationship between the EPDS applied after delivery to calculate the cutoff value and the PDPS applied during pregnancy ($r = 0.442$) (Table 6). As the result of the ROC analysis, the cutoff value was found to be 21. The sensitivity and specificity were calculated as 0.154 and 0.005, respectively. The area under the ROC curve was found to be at a statistically significant level (area = 0.829; $p = .000$) (Figure 3).

Table 6.
The Relationship Between EPDS and PDPS and Its Subscales

		EPDS (Alpha value = 0.829)
Factor 1	*r*	0.470*
	p	.000
Factor 2	*r*	0.304*
	p	.000
Factor 3	*r*	0.191*
	p	.000
Factor 4	*r*	0.218*
	p	.001
Factor 5	*r*	0.152*
	p	.020
PDPS	*r*	0.442*
	p	.000

*$p < 0.05$

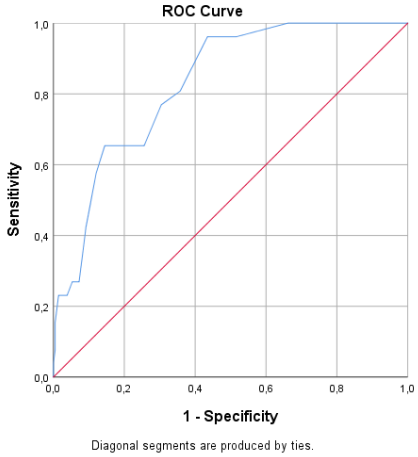

Figure 3.

ROC Analysis

Discussion

It has been uncovered that the PDPS developed in the current study is a valid and reliable measurement instrument. Boateng et al. (2018) define three phases for scale development studies, which are of critical importance in the field of health sciences. The first phase is item development, in which the content validity is ensured by creating the item pool. The scale development is the second phase, which includes pre-testing, item reduction, and determining the factors to be measured. The third phase is the scale evaluation. At this stage, validity and reliability tests of the scale are performed. The present study, deemed to make an essential contribution to the field of health science, has been conducted in accordance with the scale development procedures.

Creating an item pool is one of the most essential steps of this process (Price, 2017). The deductive method was used in item development. As stated by Hinkin (1995), the deductive method involves creating items based on a thorough literature review and existing scales. The initial pool of items should be at least twice as long as the desired final scale (DeVellis, 2017; Schinka et al., 2012). The developed scale's item pool consisted of 48 items; the valid and reliable final version of the scale comprised 21 items.

After the scale items are generated, item analysis and factor analyses should be performed to select the most appropriate items to be included in the final scale and to examine the subscale (DeVellis, 2017; Price, 2017). First, the item-total correlation is calculated to determine the extent to which the items are related to all other items, and the items with a low correlation, less than 0.30, should be excluded from the analysis (Boateng et al., 2018). This study estimated whether the scale items are related by calculating the item-total correlations, and those with less than 0.30 correlations were removed.

Exploratory factor analysis is performed to reveal the factor pattern in the scale (Norris & Lecavalier, 2010). The correlation matrix, Kaiser-Meyer-Olkin, and Bartlett's test of Sphericity performed before the exploratory factor analysis provide information about whether the data are suitable for factor analysis (Carpenter, 2018). It is suggested that the correlation matrix should contain numbers at the level of 0.30 or higher, Bartlett's chi-square should be significant with a probability of 0.05 or less, and the KMO value should be 0.60 or higher (Carpenter, 2018; Tabachnick & Fidell, 2015). As Boateng et al. (2018) indicated, the factor loadings should be at 0.40 and above so that the items will contribute to the construction at an adequate level. According to the results of this study, the factor loadings of all items were between 0.484 and 0.801 and quite adequate. Upon examining Bartlett's test of Sphericity results, it was determined that the Chi-square value obtained was significant, the scale items were related, and the KMO value was 0.841. In line with this finding, it was concluded that the sample size and the items were sufficient to conduct factor analysis.

Confirmatory factor analysis is a psychometric assessment that allows systematic comparison of an optional preliminary factor structure based on systematic fit assessment strategies and evaluates the relationship between latent structures corrected for measurement errors (Morin et al., 2016). According to the confirmatory factor analysis, the structural equation modeling results of the scale were significant (p = .000), and it was uncovered that it was related to the 21 items and the five-factor scale structure. In the modeling, it was necessary to determine the error covariance of the same factor. It was discovered that the items were sufficient for the structure due to the

fact that the factor loadings of the items were over 0.30, and thus, the structure was confirmed. In addition, it was found that the goodness of fit indices of the scale indicated a perfect fit regarding the results of the first-order multi-factor analysis (Hooper et al., 2008; Simon et al., 2010). According to the item analysis performed after factor analysis, the item-total correlation values varied between 0.308 and 0.654, and the scale items were related. The item-total correlations of higher than 0.30 indicate that the structure is acceptable (Boateng et al., 2018).

The internal consistency of a scale is based on the correlation between different items of the same measurement instrument. This correlation reveals whether multiple items that are supposed to measure the same structure produce similar scores. Internal consistency for Cronbach's alpha, calculated by correlations between all item pairs, can vary between 0 and 1. A generally acceptable threshold for reliability varies between 0.6 and 0.7; however, if it is 0.8 or greater, it indicates a very good level (Hulin et al., 2001). In the field of health sciences, the acceptable threshold is widely 0.70 (Boateng et al., 2018). The alpha value of the PDPS was calculated as 0.836, while it was computed between 0.603 and 0.825 for the subscales. The correlation coefficient between the two halves was calculated as 0.70.

To determine how accurately the scale predicts the risk for postpartum depression, the levels of postpartum depression in women were examined within six weeks after delivery via EPDS. As seen in the studies previously conducted, the EPDS is the most frequently used scale for identifying the level of postpartum depression (Alves et al., 2019; Beck et al., 2006; Ibarra-Yruegas et al., 2018; Oppo et al., 2009; Records et al., 2007; Youn & Jeong, 2011). The EPDS was recommended to be completed within six weeks after delivery (Cox et al., 1987), and it was applied within that amount of time after birth in the previous research (Alves et al., 2019; Youn & Jeong, 2011). It has been acknowledged that those with an EPDS score of 13 and above show signs of depression (Engindeniz et al., 1996). Accordingly, the cutoff value of the scale developed following the ROC analysis was determined as 21. It can also be declared that the scale can accurately predict the risk of depression by 82% (area = 0.829; p = .000). Although a cutoff score has been established, the results should be interpreted with caution and used for screening purposes rather than diagnostic confirmation.

Limitations

The sample size used in the predictive validity analysis conducted with the EPDS was lower than that of the main study group. This may necessitate retesting the predictive power of the scale in different samples. Another limitation of the study is that the scale could not be evaluated using test-retest reliability. Future studies may consider applying the PDPS in different trimesters to assess its temporal stability.

Conclusion and Recommendations

The PDPS is a valid and reliable measurement instrument. The PDPS can be applied to identify the predictors of peripartum depression during any stage of pregnancy (each trimester) and to determine the risk for postpartum depression. It is recommended that the scale be administered at the next follow-up appointment rather than the first day the pregnancy is announced, as the mother's intense emotional state can influence the results. Documenting the data of repeated measurements at regular intervals and comparing them with previous measurements may be vital for the effective use of the scale. In this respect, it can be noted that there is a need for follow-up studies in which the scale is applied in all trimesters of pregnancy with their results evaluated.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Amasya University (Date: February 2, 2023, Number: 2023/12).
Informed Consent: Oral and written informed consent were obtained from the study's participants.
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Author Contributions: Concept - GU, MK; Design - GU, MK; Supervision - MK; Resources - GU, MK; Materials - GU, MK; Data Collection and/or Processing - GU; Analysis and/or Interpretation - GU; Literature Search - GU; Writing Manuscript - GU, MK; Critical Review - MK
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