VALIDITY AND RELIABILITY OF THE TURKISH VERSION OF THE PREGNANCY EXERCISE SELF-EFFICACY SCALE

GEBELİK EGZERSİZ ÖZYETERLİK ÖLÇEĞİ TÜRKÇE FORMUNUN GEÇERLİK VE GÜVENİRLİĞİ

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ABSTRACT

Purpose: This study was conducted to test the validity and reliability of the Pregnancy Exercise Self-Efficacy Scale (P-ESES) for the Turkish population.

Method: The study included a qualitative design for validity and reliability of the Pregnancy Exercise Self-Efficacy Scale (P-ESES) for the Turkish population. The sample of the study consists of 221 Turkish pregnant women. To test the criterion-related validity of P-ESES correlation was examined with a scale similar to that obtained from the self-efficacy in Turkey.

Results: According to the analysis results, the scale was determined to be two-dimensional. There are 10 items, seven items in the first factor and three items in the second factor. The eigenvalue of the first sub-dimension of the P-ESES was 5.42 and the variance explained was 54.24%; The eigenvalue of the second dimension is 1.41 and the variance it explains is 14.16%. The total variance explained is 68.41%. The Cronbach's alpha of the scale was 0.894 in total, 0.928 for Factor 1 and 0.659 for factor 2, respectively. The questionnaire was found to have a good content validity.

Conclusion: P-ESES was evaluated to have good content validity and was found to have reliability.

Keywords: Physical Activity, Pregnancy, Reliability, Scale, Self-Efficacy, Validity.

ÖZET

Amaç: Bu çalışma, Gebelik Egzersiz Öz-Yeterlik Ölçeği'nin (P-ESES) Türk toplumu için geçerlik ve güvenirliğini test etmek amacıyla yapılmıştır.

Yöntem: Araştırma, Gebelikte Egzersiz Öz-Yeterlik Ölçeği'nin (P-ESES) Türk toplumu için geçerlik ve güvenirliği için nitel bir tasarım içermektedir. Araştırmanın örneklemini 221 Türk hamile kadın oluşturmaktadır. P-ESES korelasyonunun ölçüt bağıntılı geçerliliğini test etmek için Türkiye'deki öz yeterlikten elde edilene benzer bir ölçekle incelenmiştir.

Bulgular: Analiz sonuçlarına göre ölçeğin iki boyutlu olduğu belirlendi. Birinci faktörde yedi, ikinci faktörde üç madde olmak üzere 10 madde bulunmaktadır. P-ESES'in birinci alt boyutunun öz değeri 5,42 ve açıklanan varyans %54,24; İkinci boyutun özdeğeri 1,41, açıkladığı varyans ise %14,16'dır. Açıklanan toplam varyans %68,41'dir. Ölçeğin Cronbach alfa değeri toplamda 0,894, Faktör 1 için 0,928 ve faktör 2 için sırasıyla 0,659'dur. Anketin içerik geçerliliğinin iyi olduğu görüldü.

Sonuç: P-ESES'in kapsam geçerliliğinin iyi olduğu değerlendirildi ve güvenilir olduğu belirlendi.

Anahtar Kelimeler: Fiziksel Aktivite, Gebelik, Geçerlik, Güvenirlik, Ölçek, Öz-yeterlik.

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INTRODUCTION

Exercise is defined as physical activity consisting of planned, structured, and repetitive bodily movements done to improve one or more components of physical fitness (ACOG, 2015). Since exercise is useful for maternal and fetal health as an essential element of a healthy lifestyle, it is recommended in the pregnancy care guidelines for optimal health (ACOG, 2015; Norweg et al., 2005; WHO, 2019). Exercising has been reported to improve physical fitness throughout pregnancy (Nascimento et al., 2012; Kramer & McDonald, 2006; Ramírez-Vélez et al, 2011) reduce weight gain (Muktabhant et al., 2015), the risk of gestational diabetes mellitus (Mørkrid et al, 2014; Bland et al., 2013) and low back and lumbopelvic pain severity (Davenport et al., 2019), increase energy and positive mood, reduce the risk of perinatal depression (Gaston & Prapavessis, 2013) and preeclampsia (Aune et al., 2014), and provide easier labor and birth (Bland at al., 2013). Compared to sedentary pregnant women, physically active pregnant women were reported to have better perceived health status and they are more likely to access healthcare services (Barakat et al., 2011). Despite the reported benefits of exercise in pregnancy, the level of physical activity of women were found to be lower during pregnancy than before pregnancy (Bland et al., 2013; Davenport et al, 2019; Fazzi et al., 2017). In a study conducted in the United States, it was stated that 32% of pregnant women spent time for physical activity in early pregnancy, however, this ratio decreases to 12% in late pregnancy (Ruifrok et al, 2014). In a study carried out with Asian pregnant women, on the other hand, it was observed that the total energy expenditure of pregnant women significantly reduced compared to before pregnancy (Padmapriya et al, 2015). Moreover, it was reported that pregnant women spent more than 50% of their time in sedentary behaviors (Fazzi et al., 2017). The reduction in physical activity level during pregnancy suggests the potential existence of barriers for pregnant women to perform sufficient exercise during pregnancy (Chan et al., 2019). These barriers were reported likely to stem from the misconceptions and concerns of pregnant women [including obstetrical care providers on the effect of physical activities, for example, they believe that regular physical activity during pregnancy could result in miscarriage, lead to fetal growth restriction, musculoskeletal injuries, and preterm delivery, or from lack of motivation for physical activity during pregnancy (Bauer, et al. 2018). The role of self-efficacy in maintaining exercise practices is another remarkable factor. Successfully adopting an exercise regimen requires exercise self-efficacy (Kroll et al, 2007]. Because self-efficacy theory (Bandura, 1997) suggests that people's beliefs in their capabilities are a strong indicator of their performance (Marcus et al., 1992; Bland et al., 2013). Exercise self-efficacy was defined as the primary determinant of exercise behavior (Bendix et al., 2020). Studies have reported that personal exercise self-efficacy is quite associated with one's ability to engage in exercise (Kroll et al., 2007; Bland et al., 2013). It was stated that improving exercise self-efficacy is important to overcome exercise barriers (Cramp et al. 2009). The population insufficiently investigated regarding exercise self-efficacy and adherence is pregnant women (Bland et al. 2013). In this sense, a specific measurement tool for the assessment of exercise self-efficacy of pregnant women is highly important.

Bland et al. (2013) modified the measuring Exercise Self-Efficacy Scale (ESES) which was developed by Marcus et al. (1992) for adults and revised by Kroll et al. (2007) for pregnant women Pregnancy Exercise Self-Efficacy Scale (P-ESES). Various versions of the ESES are commonly used among several populations. For example, Norveg et al. used a modified version of the scale, [COPD] ESES, for patients with COPD [chronic obstructive pulmonary disease]. Similarly, Kroll et al. (2007) modified this scale for patients with spinal cord injury. The scale consists of 10 simple and clear items (Krol et al. 2007). Kendall (2001) used the ESES to examine exercise interventions for weight management among pregnant women (Norweg, 2005). Based on this, Bland et al. developed the P-ESES, by performing a validity-reliability study among pregnant women who failed to take services of exercise trainer and received prenatal care from a physician. Self-efficacy score was generated by calculating the numerical ratings for each item of the Likert-type scale and dividing by the number of answers. The P-ESES was designed to explain and predict changes of exercise behavior and is theoretically build on the idea that one's self-efficacy is strongly related to one's exercise adherence (Bland et al., 2013). The scale is very important based on the importance of the subject. Therefore, it would be useful to apply the P-ESES in research and clinical applications, by making validity and reliability analyzes in different countries. This methodological study was performed to test the validity and reliability of the P-SES in pregnant women for Turkish population.

METHODS

Design

This methodological study was carried out online, using Google forms. The participants were reached via social network such as Facebook, Instagram, Whatsapp, etc., between 03-01-2021 05-06-2021. Research link was shared on pages related to pregnant and pregnancy on social media. The inclusion criteria were being pregnant, being elder than 18 years of age, and having the language skills in Turkish. The exclusion criteria, on the other hand, consisted of medical or obstetric contraindications to exercise in pregnancy, or mental disorders requiring pharmaceutical treatment. The study sample covered pregnant women meeting the inclusion criteria. Suggested minimum number for sample size include from 5–30 times the number of scale items (Heale & Twycross, 2015). In this study, the number of items of the scale planned to be adapted is ten. Twenty people were targeted for each item, but a 10% excess was calculated for the possibility of data loss, resulting in a sample size of 221. Ethiccal codes and principles of Helsinki Declaration have been followed during research. There are mainly three criteria to test the validity of the measuring tool: content validity, construct validity, and criterion-related validity (Heale & Twycross, 2015). The validity and reliability study was performed in light of these processes.

Pregnancy Exercise Self-Efficacy Scale (P-ESES): The P-ESES consists of 10 items assessing the self-efficacy and motivation in pregnant women to perform physical activity. The participants were asked to read each expression and to make a grading between 1 and 5 by their own abilities. The scale utilizes a 5-point Likert-type scale for responses (1: "strongly disagree", and 5: "Strongly agree"). The P-ESES outcome is reported as the sum of ten items, ranging from 10 to 50. Thus, a score between 35 and 50 indicates high self-efficacy, 18-34 medium self-efficacy and 10-17 low self-efficacy (Bland et al., 2013).

The Self-Efficacy Scale (SES): The scale was developed by Sherer et al. in 1982 and its Turkish validity and reliability study was performed by Gözüm and Aksayan (1999). This 5-point Likert-type scale consists of 23 items, whereas the highest and lowest scores to be obtained from the scale are 23 and 115, respectively. In the scale, participants are asked to choose the one that defines him/her best from the following five expressions for each item: 1- "Does not describe me at all"; 2- "Describes me somewhat"; 3- "I am hesitant"; 4- "Describes me well"; and 5- "Describes me greatly". The scale has four dimensions; initiation of behavior, sustaining of behavior, completion of behavior and overcoming barriers. The higher scores from the scale indicate the higher self-efficacy perception while the lower scores indicate the lower self-efficacy perception (Şencan, 2005).

Statistical Analysis

Data were analyzed using SPSS 22 and AMOS 24 package programs. Descriptive analysis reported means and frequencies for study variables. Reliability of the P-ESES scale was determined by computing internal consistency coefficient alpha, split-alpha Spearman–Brown for equal length, and structural equations approach. Validity was determined through exploratory principal component factor analysis and a structural equation model with R2. For reliability analysis, on the other hand, reliability of the P-ESES was determined by calculating internal consistency coefficient alpha, the Equal-Length Spearman Brown split-half coefficient, structural equation model, and parallel-forms reliability. Parallel-forms reliability is used to assess the consistency of the results of two tests constructed in the same way from the same content dimension. Two equivalent forms of test are applied at the same time continuously or at two different times intermittently (Şencan, 2005). The correlation between the forms is calculated with the Pearson product-moment correlation coefficient and interpreted as a reliability coefficient. The higher correlation coefficient, the higher equivalence of the scales (Ercan & Kan, 2004).

RESULTS

Findings showed the mean age of the participants was 27.39±4.96 years, 52.5% were graduates, 62.4% were unemployed, 89.6% had no health insurances. In terms of obstetric characteristics of the participants; 9% had an abortion, 12.7% had a miscarriage, 15.5% had a health problem, while 52.0% were primigravida, 52.0% were in the second trimester of pregnancy. In terms of exercise status of pregnant women; 62.0% performed physical activities before pregnancy and 68.3% throughout pregnancy, whereas the most performed physical activity was found to be brisk walking with 62%.

Table 1. Sociodemographic and Obstetric Characteristics of Pregnant Women (n=221)

Properties		n	%
Educational status	Primary	39	17.6
	High school	66	29.9
	University and above	116	52.5
Employment status	Employed	83	37.6
	Unemployed	138	62.4
Health insurance	Yes	198	89.6
	No	23	10.4
History of abortion	Yes	20	9.0
	No	201	91.0
Miscarriage	Yes	28	12.7
	No	193	87.3
Number of pregnancy	1	115	52.0
	2	62	28.1
	3 and over	44	19.9
Gestational week	First trimester	39	17.6
	Second trimester	115	52.0
	Third trimester	67	30.3
Health problem in pregnancy	Yes	34	15.4
	No	187	84.6
Exercise before pregnancy	Yes	137	62.0
	No	84	38.0
Exercise throughout pregnancy	Yes	151	68.3
	No	70	31.7
Kinds of exercises throughout pregnancy	Sedentary	49	22.2
	Swimming	2	0.9
	Brisk walking	137	62.0
	Pilates	24	10.9
	Yoga	7	3.2
	Bicycling	2	0.9

For translating-retranslating studies of the scales, the English text of the Exercise Self-Efficacy Scale was translated from Turkish to English by a bilingual midwifery academician. Afterward, they were retranslated into English by another midwifery academician, who have lived abroad and who have a brilliant mastery of English. As a result of the translations performed, the Turkish version of the scale was created. In the first phase of the implementation regarding the content validity of the scales, The Turkish form of the scales was submitted to a total of ten experts in different fields (nursing, medicine, etc.), whereas one expert failed to response. In terms of expert review; English to Turkish translation of the Turkish version of the scale, its language, content validity, and clarity was assessed by nine experts in total, including five midwives who are specialists in midwifery with a Ph.D. degree, two midwives who are specialists in midwifery and in adult education with a Ph.D. degree, one midwife, and one Ph.D. student physiotherapist academician. The expressions about the Turkish translations of the items in the scale were evaluated by the researchers in line with the responses of the experts and its Turkish translation was finalized. In the language and content validity study, since the midwife and other health personnel would have a role in addition to the physician for advising during pregnancy, based on systemic and cultural sensitivity, the expression "physician, midwife and other healthcare professionals" was added to the eighth question. In this study, nine experts reviewed ten items and the content validity index of each item was calculated. Content Validity Index (CVI) calculated for each item was compared with the minimum value (0.75) in Table 2 by the number of experts and items greater than this minimum value were accepted. Accordingly, since the CVI value of all ten items was greater than the minimum value, ten items were accepted. Considering minor change proposals from experts for accepted items, expressions were finalized. CGI (I-CVI) values of the expressions on the draft scale range between .77 and 1.0, whereas The Scale Content Validity Index (S-CVI) for the total of the scale was calculated as .95. Scale Content Validity Index to be .80 and above is regarded as an acceptable value (Polit & Beck, 2006). Accordingly, the item and scale CVIs of the draft measurement tool were at acceptable levels.

Table 2. The Minimum Content Validity Index Values of Items to be Scaled by the Number of Experts

| Number of Experts	Minimum Value	Number of Experts	Minimum Value
5	0.99	13	0.54
6	0.99	14	0.51
7	0.99	15	0.49
8	0.78	20	0.42
9	0.75	25	0.37
10	0.62	30	0.33
11	0.59	35	0.31
12	0.56	40+	0.29

In the study, the explanatory analysis was performed first. For this purpose, the suitability of data was analyzed with Kaiser-Meyer-Olkin (KMO) Test for the P-ESES. Finding the value as 0.877 indicates that the KMO value comes within the normal range and that the usability of the explanatory factor analysis results (Yong & Pearce, 2013). Bartlett's Test of Sphericity, on the other hand, showed that there was a significantly high correlation between the variables and that the data were found to be suitable for explanatory factor analysis (X^2: 1411,260, sd: 45, p < 0,000).

As a result of the explanatory factor analysis (EFA), it was observed that the scale grouped under one factor in the original scale was grouped under the second factor in the Turkish form. According to EFA results, there are seven items in the first factor and three items in the second factor. It was found that the eigenvalue of the first dimension of P-ESES was 5.42 and the variance explained was 54.24%, while the eigenvalue of the second dimension was 1.41 and the variance explained was 14.16%. Total variance explained, on the other hand, was found as 68.41% (Table 2). The dimensions of the scale were named in the context of the exercise self-efficacy conceptual framework, whereas the first dimension was determined as "initiation" and the second dimension as "sustaining".

In order to make an item-total correlation assessment, it is recommended that the sample size should be at least 100-200 participants, or each item should be responded by at least five participants. Item-total correlation coefficient to be 0.30 and above allows us to accept reliability as good (Ercan & Kan, 2004). It was determined that the item correlation coefficient in the "initiation" dimension was between 0.72 and 0.87, while this coefficient was 0.52-0.87 in "sustaining" dimension; the reliability of the scale was found as good (Table-4).
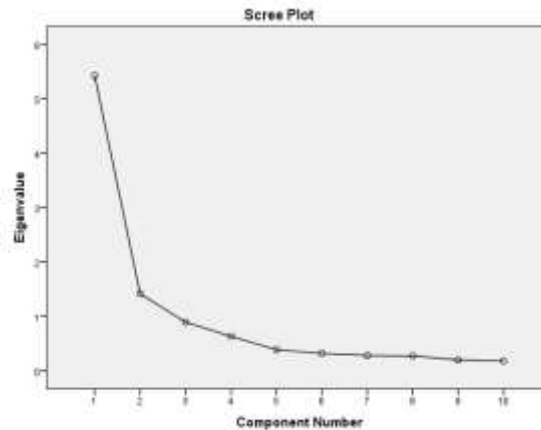
Figure 1. Screen plot graphic [eigenvalues according to the factors]

To evaluate the validity of the one-factor structure of P-ESES, which consists of two dimensions and a total of ten items, the Confirmatory Factor Analysis [CFA] was performed. The results obtained in the first construct validity analysis were found to be sufficient. The scale, as it stands, explains 68.69% of the variance. The CFA results regarding the first order factorial structure for the P-ESES [7-item "initiation" and 3-item sustaining factor structure], which has two dimensions and a total of ten items, were given in Figure 1.

CMIN=98,450; DF=33; CMIN/DF=2,983; p=,000; RMSEA=,098; CFI=,932; GFI=\gfi
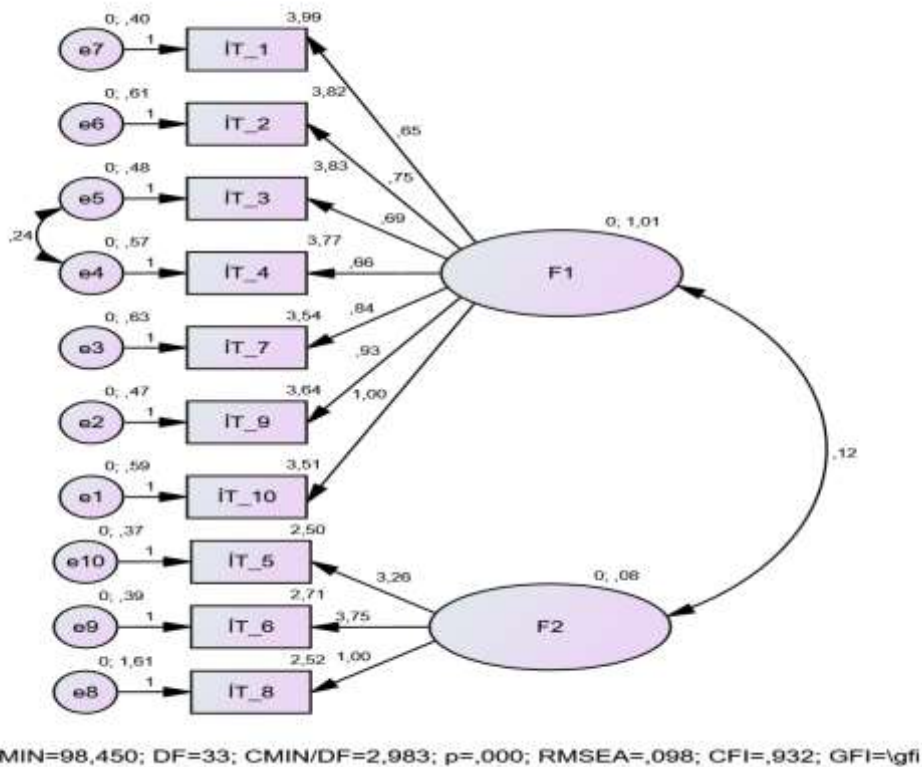
Figure 2. First Order Factorial Structure for the Pregnancy Exercise Self-Efficacy Scale [P-ESES]

In terms of goodness-of-fit values of the scale (x^2 34, N=208); p<0,000;x^2/sd=3.950; CMIN:134,291; RMSEA=0.119;CFI=.89) obtained from CFA, to improve the data fit values of the proposed two-factor model, a correlation was established between e5 and e6 and they were re-analyzed. These results indicate that the data obtained from the research are compatible with the nominal theoretical structure (two-factor model) of the P-ESES.

Table 3. Fit Indices of the Pregnancy Exercise Self-Efficacy Scale and Scale Values

Fit indices	Good fit	Acceptable fit	Scale values
χ2/df	$0 \leq \chi^2/sd \leq 2$	$2 \leq \chi^2/sd \leq 5$	2.983
p value	$0.05 < p \leq 1.00$	$0.01 < p \leq 0.05$	0.000
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 1.0$	0.098
NFI	$0.95 \leq NFI \leq 1.0$	$0.90 \leq NFI \leq 0.95$	0.902
CFI	$0.95 \leq CFI \leq 1.0$	$0.90 \leq CFI \leq 0.95$	0.932
IFI	$0.950 \leq IFI \leq 1.00$	$0,900 \leq IFI \leq 0.950$	0.932

Examining table 3, it was observed that χ2/df, RMSEA, NFI and IFI values show an acceptable fit. The analysis results can be interpreted as the two-factor original structure of the scale fits Turkish culture as well.

Table 4. Distribution correlation of Pregnancy Exercise Self-Efficacy Scale items by the dimensions

Items	Initiation dimension	Sustaining dimension
1: I can overcome barriers and challenges with regard to physical activity if I try hard enough.	0.84	
2: I can find means exercise field and ways (mat, Pilates ball, etc.) to be physically active and exercise in pregnancy	0. 84	
3: I can accomplish my goals that I set.	0.87	
4: When I am confronted with a barrier to exercise, I can find several solutions to overcome this barrier.	0.84	
7: I can exercise even without the support of my family or friends	0.72	
9: I can motivate myself to start exercising again after I've stopped for a while.	0.81	
10: I can exercise even if I had no access to a gym, exercise, training, or rehabilitation facility.	0.78	
5: I can exercise even when I am tired.		0.87
6: I can exercise even when I am feeling depressed.		0.84
8: I can exercise without the help of my physician, midwife, or another healthcare professional.		0.52
Eigenvalue	5.42	1.41
Total Variance Explained (%68.41)	%54.24	%14.16
Cronbach's alpha (0.894)	0.928	0.659

For the reliability of the P-ESES, the internal consistency coefficient was examined. For this purpose, the Cronbach Alpha Coefficient was first measured. Cronbach's alpha for the instrument was .894 for the total scale. Cronbach's alpha for Factor 1 was .928 and Factor 2 was 0.659 (Table 4).

Table 5. Correlations Between Dimensions of the Pregnancy Exercise Self-Efficacy Scale and the Self-Efficacy Scale

	Factor 1	Factor 2	P-ESES TOTAL
The dimension "Initiation of Behavior"	**.160**[*]	-.109	.089
The dimension "Sustaining the Behavior"	**.200**[**]	-.099	.126
The dimension "Completion of Behavior"	**.531**[**]	**.149**[*]	**.490**[**]
The dimension "Overcoming Barriers"	**.297**[**]	.088	**.276**[**]
Total score of the Self-Efficacy Scale	**.374**[**]	-.042	**.290**[**]

To test the criterion-related validity of the P-ESES-TR, the correlation between the total scores obtained from the SES, which is a similar scale in Turkey, and the P-ESES scale total score and scale dimensions were examined. The correlation between the scores obtained from both scales applied at the same time was evaluated by the Pearson product-moment correlation analysis, and it was found that there was a high level of positive and significant correlation [p < .001] between the score distributions of the two scales and the score distributions of their dimensions (Table 5).

DISCUSSION

This study translated the English version of the P-ESES into Turkish version, the P-ESES-TR, and tested the validity and reliability of the Turkish version. Our study showed that the P-ESES-TR was valid and reliable. The study, validity and reliability levels were assessed as good. This study provides evidence for the Turkish reliability and validity of the P-ESES. Pregnant women without contraindication are recommended to engage in 30-min medium-level physical activities most days of the week, however, many pregnant women do not exercise at the recommended levels. Women's engagement in physical activities throughout pregnancy faces a number of barrier varying significantly throughout the nature of pregnancy. Exercising and overcoming barriers to exercise are associated with higher levels of self-efficacy (Cramp & Bray, 2009). Assessment of exercise self-efficacy would be a guide in this context. The scale is an easy-to-assess and low-cost instrument. P-ESES would be useful as it has the potential to assess physical activity levels of pregnant women and to use an intervention-related outcome.

Strong results were revealed in the validity analysis of the scale. Factor loadings of the scale vary between 0.52 and 0.87. Factor loadings indicate the correlation between item and factor. When an item has a low factor loading level, this means that this item does not have a strong enough correlation with that factor. While it is stated that the factor loading value of an item should not be less than 0.30, there are also other theorists arguing that this size should be 0.40 (Çokluk, 2013). In this study, item factor loadings took very good values. Items grouped under one factor in the original scale showed a two-factor structure characteristic according to EFA. It was found that the eigenvalue of the first dimension, seven-item "initiation" dimension, was 5.42 and the variance explained was 54.24%, while the eigenvalue of the second dimension, three-item "sustaining" dimension, was 1.41 and the variance explained was 14.16%. Total variance explained, on the other hand, was found as 68.41%. It is possible to say that the items of 10-item scale showed a balanced distribution. The fact that the number of items distributed among the factors was not less than three can be regarded as one of the positive aspects of the scale (Raubenheimer, 2004). Goodness-of-fit values obtained as a result of CFA of the scale indicate that the data obtained from the nominated two-factor model were compatible with the two-factor model predicted in EFA in the Turkish version of the scale. The original form of the scale has one dimension, whereas it was found to be one-dimension in the validity and reliability study conducted for pregnant women in the Danish society as well. Fit indices values show that the Turkish form of the scale was at an acceptable level. Factors were renamed since factorization was different. While naming factors, theoretical framework was supported by relevant literature (Bandura, 1997).

In the study, Cronbach's alpha was found as 0.894 for the total scale. Cronbach's alpha for Factor 1 was 0.928 and Factor 2 was 0.659. In their validity and reliability analysis of the scale, Bland et al. reported the Cronbach's alpha coefficient as 0.838 and 0.869, respectively. In the study where they modified the Exercise Self-efficacy Scale for pregnant women, Kroll et al. determined Cronbach's alpha coefficient as 0.92 (Kroll et al., 2007). In the validity-reliability study performed by Bendix et al., Cronbach's alpha was 0.809 (Bendix et al., 2020). Based on the 95% confident interval of the ICC estimate, values less than 0.5, between 0.5 and 0.75, between 0.75 and 0.9, and greater than 0.90 are indicative of poor, moderate, good, and excellent reliability, respectively. Cronbach's alpha values determined in the study should be interpreted as a good and excellent reliability, according to Koo and Li (2016). Internal consistency coefficients of the P-ESES-TR was found as very reliable in the "initiation" dimension and quite reliable in the "sustaining" dimension. To test the criterion-related validity of the P-ESES-TR, the correlation between the total scores obtained from the SES, which is a similar scale in Turkey, and the P-ESES scale total score and scale dimensions were found to be highly positive and significant [$p < 0.001$]. To check the parallel-forms reliability, two different scales with similar features are applied to the same people and the correlations between them are examined. Two equivalent forms of test are applied at the same time continuously or at two different times intermittently (Şencan, 2005). The higher correlation coefficient, the higher equivalence of the scales (Ercan & Kan, 2004). As a result of the Turkish validity analysis of the one-dimension P-ESES scale, it was found that it had two dimensions and the reliability analysis values were high. Analyses revealed that, with its original two-factor structure, the scale was compatible with Turkish culture.

CONCLUSION

In the conclusion, the Turkish version of the P-ESES, P-ESES-TR, was successfully obtained. The P-ESES-TR was evaluated to have good content validity and to have reliability. This tool can be used to study physical activity self-efficacy, in research and clinical applications and thus, it can improve the level of physical activity in Turkish pregnant women.

Ethical Approval

Ethiccal codes and principles of Helsinki Declaration have been followed during research. Ethical approval was obtained from Amasya University Ethics Committee (Date: 03.12.2020 no:12/125).

Authors Contributions

Plan, design: FAÖ; **Material, methods and data collection:** FAÖ, MU; **Data analysis and comments:** HYD, FAÖ; **Writing and corrections:** FAÖ, HYD, MU.

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