

The adaptation to the Turkish language and culture and a reliability and validity study for the professional issues in maternal mental health scale (PIMMHS)

Anne mental sağlığında mesleki sorunlar (AMSMS) ölçeğinin Türk Dili ve kültürüne uyarlanması, güvenilirlik ve geçerlik çalışması

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ABSTRACT

Purpose: This study was conducted to adapt the Professional Issues in Maternal Mental Health Scale, developed by Jomeen et al. (2018) to provide benefit in both education and clinical fields of practice, to the Turkish language and culture and to identify its psychometric properties. **Method:** The sample of the study, which was conducted methodologically between November 15, 2018 and February 15, 2019, was made up of students (n=202) who met the criteria for inclusion in the research from a public university midwife department (N=295). **Results:** For the 7-item Turkish version of the Professional Issues in Maternal Mental Health Scale, the cronbach α coefficient was found to be 0.625. According to the confirmatory factor analysis results of the Professional Issues in Maternal Mental Health Scale, the RMSEA value is 0.038, and the scale consists of 3 factors, together these three factors explain approximately 70.26% of the total variance. **Conclusion:** A highly reliable scale has been adapted to the Turkish language and culture for both midwifery profession and all other healthcare professionals concerned with women's health and has been brought into the literature.

ÖZ

Amaç: Bu çalışma ile Jomeen ve arkadaşları (2018) tarafından geliştirilen, orijinal ismi "Professional Issues in Maternal Mental Health Scale (PIMMHS)" olan "Anne Mental Sağlığında Mesleki Sorunlar (AMSMS) Ölçeği"nin, Türk dili ve kültürüne uyarlanarak ebelik öğrencilerinin hem eğitim hem klinik uygulamalarında fayda sağlaması amaçlandı. **Yöntem:** 15 Kasım 2018-15 Şubat 2019 tarihleri arasında metodolojik olarak yürütülen çalışmanın örneklemini bir devlet üniversitesinin ebelik bölümüne kayıtlı öğrencilerinden (N=295) araştırmaya dahil edilme kriterlerini sağlayan (n=202) öğrenciler oluşturdu. **Bulgular:** AMSMS ölçeğinin 7 maddelik Türkçe versiyonu için cronbach α katsayısı, 0,625 bulundu. AMSMS ölçeğinin DFA sonuçlarına göre RMSEA değeri 0,038 bulunmakta birlikte ölçeğin 3 faktörden oluşmakta, bu üç faktör birlikte toplam varyansın yaklaşık %70,26'sını açıklamaktadır. **Sonuç:** Yapılan analizlerin sonuçlarına göre orijinalinde 7 madde ve 2 alt boyuttan (duygusal rol, eğitim) oluşan ölçek, kültürel farklılıklar sonucunda 7 madde ve 3 alt boyut (profesyonel destek, duygusal rol, eğitim eksikliği) olarak Türk dili ve kültürüne uyum göstermektedir.

INTRODUCTION

Midwives are the keys to ensuring the quality of women's perinatal experiences and, for this reason, are at the center of women's emotional health and welfare. It is internationally documented and acknowledged that prenatal mental health issues are harmful outcomes for mothers, fathers, children, and society [1]. This study was conducted to adapt the Professional Issues in Maternal Mental Health Scale (PIMMHS), developed by Jomeen et al. (2018) to provide benefit in both education and

clinical fields of practice, to the Turkish language and culture and to identify its psychometric properties.

BACKGROUND

Midwives are the keys to ensuring the quality of women's perinatal experiences and, for this reason, are at the center of women's emotional health and welfare. In 2004, when the psychological aspects of natal and perinatal mental illnesses for the first time became the leading cause of maternal death, England stood out after the

Confidential Enquiry into Maternal and Child Health [2]. This result remained a key finding in subsequent reports [3, 4]. Nevertheless, it is internationally documented and acknowledged that prenatal mental health issues are harmful outcomes for mothers, fathers, children, and society [1].

Today, the global evaluation and management of perinatal mental health problems, in addition to being an inseparable component of the roles of midwives, are among the responsibilities of all other personnel concerned with birth in the context of motherhood [5]. The perinatal period offers the opportunity to diagnose perinatal mental health problems, as it is a time during which health services are procured most abundantly [6]. Midwives are in a unique and ideal position to effectively identify women at risk and to ensure early intervention [7]. Nonetheless, the convergence of numerous factors such as an unwillingness to define women [8] and an aversion by healthcare professionals to diagnose women affected by this situation leads to a failure in diagnosis and treatment due to a reluctance to explain how women feel, the inability to identify women's symptoms of perinatal mental health problems, and a lack of professional skill or resources [1, 9, 10].

This emerging failure can pertain to both stigmatization and culture. The consensus in the literature is that non-white women living in impoverished regions have a low likelihood of asking questions about mental health [11] and that the reason for this is a lack of knowledge among midwives about managing intercultural perinatal mental health problems [12, 13]. Studies also mention that healthcare workers exhibit a negative disposition toward women with perinatal mental health problems [14-16]. Interestingly, stigmatization emerge with the women's discomfort and the intention to preserve from stigmatization, and this situation leads to an inability to document women's histories of mental health and to direct women to experts or services [14].

Data collected over a period of 10 years revealed that another obstacle in estimating and identifying perinatal mental health problems, in addition to a lack of information on the part of expert perinatal mental health teams and midwives regarding the current options [1], was the inadequate time in the birth process and lack of clearly defined or planned treatment and care programs [12, 17-20]. This supports the fact that most women do not even know what is happening [21] and experience major inequalities in services with maternity care [9]. Noonan et al. (2017) determined that the capabilities of midwives in providing women with treatment and care services are limited in many regards and that inadequate referral options, a lack of educational and institutional

support, and intense working environments are the greatest factors that affect midwives. They recommended that future research should continue to examine the effect of contextual factors over the provision of perinatal mental health care [1].

WHO said that nurses and midwives play a vital role in providing health services and advocate for increased investments in the nursing and midwifery workforce. They are the people who devote their lives to caring for mothers and children. They are often, the first and only point of care in their communities. The world needs 9 million more nurses and midwives if it is to achieve universal health coverage by 2030. The year 2030 was declared the midwife and nurse [22].

To contribute to this issue, which WHO emphasizes on, it is necessary for service providers to be able to define what the main professional problems are within their context. An evaluation tool that ensures that services providers and commission members identify the fields of practice they lack can facilitate the development of services and the provision of education. It could also offer a means to evaluate the changes made to ensure the optimization of roles in perinatal mental health. Jomeen et al. (2018), in this regard, developed the "Professional Issues in Maternal Mental Health Scale" (PIMMHS) in 2018 as a measure against the deficiencies in education and the fields of practice [23].

This study was conducted to adapt the Professional Issues in Maternal Mental Health Scale (PIMMHS), developed by Jomeen et al. (2018) to provide benefit in both education and clinical fields of practice, to the Turkish language and culture and to identify its psychometric properties.

METHODS

Research Type

The psychometric properties of the PIMMHS were determined in methodological research to identify whether they were reliable, valid, and consistent with the Turkish language and culture.

The research questions

What are the psychometric properties of the PIMMHS?

Is the PIMMHS a reliable measurement tool for the Turkish language and culture?

Is the PIMMHS a valid measurement tool for the Turkish language and culture?

Is the PIMMHS a consistent with the Turkish language and culture?

Variables of Research

The independent variable of the research was the individual characteristics of the participants, and the dependent variable was the total score from the PIMMHS.

Research Location and Time

The study took place between November 15, 2018 and February 15, 2019.

Research Population and Sampling

The sampling of the research comprised 295 students registered in the tocology department at a state university. No sampling selection was performed, and the researchers wished to reach the entire sampling population. A working group of 202 participants satisfied the criteria for inclusion in the research. The reason the sampling selection comprised tocology students was that the original study had selected students studying in the tocology department to develop the scale.

Sampling Inclusion and Exclusion Criteria

Students registered in the tocology department at the universities at which the research was conducted, who were in school on the dates during which the research was conducted, and who were willing to participate in the research were included in the sampling, and students who did not completely fill out the data-collection tools or who decided against participating in the study were excluded. Because there was a survey study, individuals who were removed from the study were not monitored again.

Data Collection Tools

The data were collected with the demographic question form prepared with reference to the literature and with the PIMMHS.

The demographic question form has questions regarding individual characteristics of the participants: age, marital status, income status, and years completed in education programs.

The PIMMHS was developed by Jomeen et al. (2018). An increase in the scores obtained from the scale in the 5-point Likert format, comprising seven items and two sub-dimensions and the statements of "I definitely agree", "I agree", "I neither agree nor disagree", "I do not agree", and "I definitely do not agree", was in turn interpreted as a decrease in professional problems experienced in the diagnosis and treatment of maternal mental health.

Data Collected Process

After obtaining permission for the scale, it was translated from English into Turkish by professional translators who are native speakers of Turkish and know Turkish proficiently enough (at least C1 level) to perform the translation, and 10 expert academics received the scale and were asked to evaluate the language and meaning of the items. The scale items were finalized with recommendations from experts and translated from Turkish into English by a translator who is a native English speaker and who knows Turkish proficiently enough (at least C1 level) to perform the translation. The scale was retranslated and used after being sent to the original scale owners and receiving their approval regarding its consistency. The Turkish version of the scale and demographic questionnaire, which were finalized after the translation, expert opinion, and retranslation stages, were administered to students registered in the tocology department at the university where the research was conducted. Students who voluntarily participated in the study were informed about the study, and their written and verbal consent was obtained. The research data were collected through face-to-face interviews with students who willingly participated in the study. The collection of the data took approximately 10 minutes.

Data Analysis

In the evaluation of the data, the researchers coded the data acquired from the research and transferred them to the SPSS 21.0, Lisrel 8.80, and STATISTICA 13 DEMO package programs. The Shapiro and Kolmogorow-Smirnov tests were implemented to determine whether the data exhibited normal distribution. Descriptive statistics were used to examine the score distributions for each item. Spearman Rank correlation coefficients were calculated to examine the relationship between the items. Internal consistency (Cronbach's alpha) and test split-half (Guttman Cronbach's Alpha) techniques were used in the reliability analysis for the scale. The structure validity of the scale was examined using an explanatory factor analysis. The Kaiser-Meyer-Olkin (KMO) and Bartlett tests explained whether the data acquired from the working group complied with the exploratory factor analysis. The number of factors for the scale was determined by regarding the eigenvalue for each factor and considering the structure of the scale items. A confirmatory factor analysis was conducted to determine the structure validity of the scale and the subdimensions of the scale. A value of $p < 0.05$ was accepted for the meaningfulness level of the statistical tests.

Ethical Aspects of Research

For the use of the scale, electronic, written approval was obtained from the scale owners.

To be able to apply the research, approval was obtained from the non-clinical ethics committee at the university.

Institutional permission was obtained from the health sciences faculty at the university where the study took place.

The study began the students who would participate in the study gave their written and verbal consent.

Limitations

The results of the research were limited to the data acquired from students who were registered in the tocology department at the university where the study was held and who voluntarily participated in the study.

RESULT

Of the 202 students who participated in the research, the average age was 21.15 ± 2.62 , 94.6% (n=191) were single, 81.7% (n=165) had graduated from an Anatolian high school, 14.9% (n=30) had graduated from a vocational school, 3.5% (n=7) had graduated from a science high school, 55.4% (n=112) had less income than expenses, 38.1% (n=77) had income equal to their expenses, 6.4% (n=13) had income greater than expenses, 35.1% (n=71) were first-year students, 21.8% (n=44) were second-year students, 18.3% (n=37) were third-year students, 24.8% (n=50) were fourth-year students, 74.3% (n=150) selected the tocology department 46.5% (n=94) because of the good work opportunities, 31.2% (n=63) because they liked the profession, and 22.3% (n=45) because their university entrance exam scores sufficed for this department), and 98% (n=198) did not work anywhere.

The reliability of the PIMMHS was determined with internal consistency and the split-half method. A Cronbach α coefficient of 0.625 was found for the seven-item Turkish version of the PIMMHS scale (Table 1).

Table 1. Reliability Analysis Findings for PIMMHS

Cronbach Alpha Value		0.625 (7 items)	
	First half	Value	0.678
		Number of items	4 ^a
Split Half Cronbach Alpha Value	Second half	Value	0.023
		Number of items	3 ^b
	Total number of items		7
Correlation between the two halves			0.365
Spearman-Brown coefficient	Equal length		0.535
	Unequal length		0.538
Guttman Split-Half coefficient			0.472

a. Items: Item 1, Item 2, Item 3, Item4.

b. Items: Item 5, Item 6, Item 7.

When the items with a low total score correlation from the original PIMMHS were excluded, no item was removed because the total Cronbach α value was largely not affected for the scale (Table 2).

Table 2. The PIMMHS Item Total Score Correlation

Item No	Adjusted Item Total Score Correlation	Item Removal Cronbach Alpha Coefficient of the Scale
Item 1	0.128	0.646
Item 2	0.553	0.506
Item 3	0.595	0.492
Item 4	0.550	0.510
Item 5	0.314	0.598
Item 6	0.056	0.662
Item 7	0.150	0.640

According to the measurements taken, the KMO coefficient was 0.693 and the significance value from Bartlett's Test of Sphericity was less than 0.05 (Chi-square=333.232; Sd=21; p=0.000). The satisfaction of the condition that, the significance value from Bartlett's Test of Sphericity must be smaller than 0.50 (p<0.05) and the KMO coefficient value being larger than the lower-boundary of 0.05 demonstrate that the dataset was fully consistent for the factor analysis.

Two factors were found with an eigenvalue greater than 1 (Figure 1). These two factors together account for approximately 57.74% of the total variance (Table 3).

It was seen in the factor analysis that the PIMMHS comprised seven items and two sub-dimensions, that the first sub-dimension comprised four items (2-5), and that the second sub-dimension comprised three items (1, 6, 7) (Table 4).

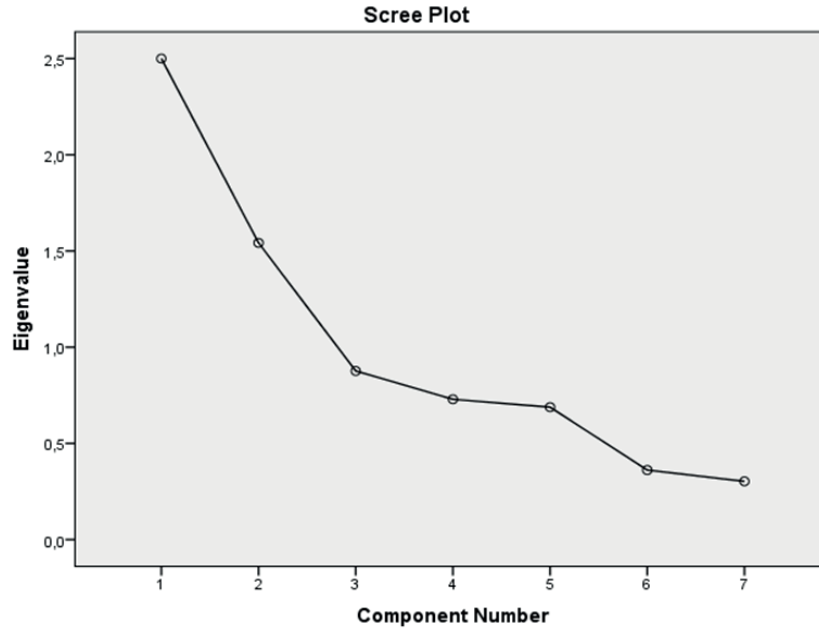


Figure 1. Scree Plot graph (PIMMHS)

According to the results of the confirmatory factor analysis for the PIMMHS, the RMSEA value was 0.118, and this value demonstrated that the scale was inconsistent. According to the “Modification Indices” values, a method used to view the errors in the model, a connection emerged between items 2 and 3 (MI=28.45) and items 4 and 5 (MI=30.55). When they were reanalyzed by aggregating items 2 and 3 and items 4 and 5 under separate factors, the scale was found to exhibit ideal consistency (Table 5). According to these results, the scale comprised three factors: “professional support” (Item 1, 6 and 7), “emotional role” (Item 2 and 3), and “lack of education” (Item 4 and 5). These three factors together accounted for approximately 70.26% of the total variance (Table 3). Of the Cronbach alpha values of the PIMMHS’s sub-dimensions, the professional support sub-dimension had a value of 0.485, the emotional role

sub-dimension had a value of 0.797, and the lack of education sub-dimension had a value of 0.705.

In the scale, items 2, 3, 4, and 5 were negative statements, and calculations were made inversely while calculating the scale score. The lowest score from the scale is 0, and the highest score is 28. An increase in the scores obtained from the scale was in turn interpreted as a decrease in professional problems experienced in the diagnosis and treatment of maternal mental health.

DISCUSSION

The Cronbach alpha coefficient is frequently preferred in the determination of the reliability of scale established over multiple choice and total scores [24]. It was chosen, for this reason, in the determination of the reliability of the FSA. Internal consistency (Cronbach’s alpha) and

Table 3. Total Explained Variance Table

	Starting Eigenvalues			Sum of Squares Rotation		
	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %
Factor 1	2.500	35.711	35.711	2.500	35.711	35.711
Factor 2	1.542	22.032	57.743	1.542	22.032	57.743
Factor 3	0.876	12.519	70.262			
Factor 4	0.729	10.419	80.681			
Factor 5	0.688	9.830	90.511			
Factor 6	0.361	5.163	95.674			
Factor 7	0.303	4.326	100.000			

Table 4. The Distribution of the Items According to the Factors

	First Analyze Result		Second Analyze Result		
	Factor 1	Factor 2	New Factor 1 Professional Support	New Factor 2 Emotional Role	New Factor 3 Lack of Education
Item 1		0.737	0.519		
Item 2	0.774			0.664	
Item 3	0.861			0.861	
Item 4	0.850				0.935
Item 5	0.655				0.491
Item 6		0.593	0.384		
Item 7		0.725	0.568		

test split-half (Guttman Cronbach's Alpha) techniques were used in the reliability analysis for the FSA in our study [25]. According to this method, the internal consistency coefficient was considered unreliable for a scale between 0.00–0.40, considered minimally reliable for a scale between 0.40–0.60, considered quite reliable for a scale between 0.60–0.80, and considered highly reliable between 0.80–1.00 [24, 26]. The Cronbach α coefficient, according to the reliability analysis of the PIMMHS determined with internal consistency and the split-half method, was 0.625; this demonstrates that the internal consistency is considerably reliable. While Jomeen et al. (2018) observed in the original study, for the two sub-dimensions of the scale, the Cronbach α coefficient for the emotional sub-dimension to be 0.81 and for the education sub-dimension to be 0.57, while our study was similar to the original research.

Explanatory and confirmatory factor analyses were used in the validity analysis of the scale. The Kaiser-Meyer-Olkin and Bartlett test explained whether the data acquired from the working group complied with the exploratory factor analysis [27]. A high Kaiser-Meyer-Olkin value means that each variable in the scale could

be estimated excellently by the other variables. Should the values result in zero or close to zero, no interpretation can be made based on these values because there is disorder in the correlation distribution. If the value was less than 0.50 as a result of the Kaiser-Meyer-Olkin test, the factor analysis was evaluated as not being able to continue [28]. According to the measurements taken in our study, the satisfaction of the condition that, along with the KMO coefficient being greater than 0.50, the significance value from Bartlett's Test of Sphericity must be smaller than 0.05 ($p < 0.05$) demonstrates that the dataset was fully consistent for the factor analysis. Jomeen et al. (2018), in the original study, observed that the result of the KMO test was 0.81, that this result was closer to 1 than the result of our study, and that both studies were consistent with the factor analysis for the data set from the KMO and Bartlett tests.

While identifying the number of factors for the scales, an eigenvalue of at least 1, the number of factors at which high-acceleration rapid drops occurred in the Scree plot graph, the variance values (%) explained for the factors, a total variance percentage for each additional factor of more than 5%, and the structure of the scale

Table 5. Fit Index for the PIMMHS Confirmatory Factor Analysis

	FIRST ANALYSIS	SECOND ANALYSIS	REFERENCE VALUES*		
			IDEAL COMPLIANCE	ACCEPTABLE COMPLIANCE	COMPATIBILITY
Chi-Square Statistics	49,29	14,22			
Degree of Freedom	13	11			
X^2/df	3,79	1,29	≤ 2	2-5	≥ 5
Chi-Square p value	0,000	0,221	$p > 0,10$	$0,05 < p < 0,10$	$p < 0,05$
RMSEA	0,118	0,038	0-0,05	0,05-0,09	$> 0,10$
CFI	0,91	0,99	1	0,90-0,99	$< 0,90$
GFI	0,93	0,98	1	0,90-0,99	$< 0,90$
Critical N	121,34	363,11	> 200	150-200	< 150

items were considered. The factor structure is as strong as the extent to which the variance rates acquired at the end of the study are large. A range of between 40% and 60% is considered adequate in social fields. Two factors have an eigenvalue of greater than 1 in our study, and, because the number of factors at which high-acceleration rapid drops occurred in the Scree plot graph was three and because the breaking points gradually decreased after the third factor, the number of factors was limited to three, and these three factors accounted for a total variance of 70.26%. Jomeen et al. (2018) in the original study found two factors with an eigenvalue greater than 1 (3.02 and 1.21), and the parallel analysis results recommended an optimum factor count of three [23]. The total variance explained is 60%. When comparing these results, our study exhibits similarity with the results of the original study, and our study's accounting percentage of the studied issue is strikingly higher than that of the original study.

RMSEA values equal to or less than 0.05 are referred to as a good fit, values between 0.05 and 0.08 as a satisfactory fit, values between 0.08 and 0.10 as an acceptable fit, and values greater than 0.10 as an unacceptable fit [29]. Standardized RMR ≤ 0.10 , CFI ≥ 0.90 was the accepted limit of compliance [30]. The RMSEA value was 0.118 according to the first CFA results, which were conducted because there were two factors with an eigenvalue of greater than one, and, because the RMSEA value was greater than 0.10, it was found that the two-dimensional state of the scale, as in its original format, was not consistent with Turkish culture. As a result of the interviews we conducted electronically with the owners of the original scale regarding the analyses we conducted throughout the process, we examined the "Modification Indices" to observe the errors in the model. According to these values, a connection emerged between items 2 and 3 and between items 4 and 5. When the three-dimensional scale was reanalyzed by aggregated items 2 and 3 and items 4 and 5 under separate factors, it was seen that the scale has an RMSEA value of 0.038 and that the three-dimensional model was consistent. According to these results, the scale comprised three factors: "professional support" (Item 1, 6 and 7), "emotional role" (Item 2 and 3), and "lack of education" (Item 4 and 5). These three factors together accounted for approximately 70.26% of the total variance. Considering the compliance indices of the study Jomeen et al. (2018) conducted, the results of the omnibus compliance test were not meaningful ($p=0,29$). The chi-square was 9.70, the degree of freedom was 8, and the X^2/df rate was 1.21. The CFI value was 0.99, and the RMSEA value was 0.03. The results of the original study and those of our study were similar upon comparison, and this similarity supports the results of our study.

CONCLUSION

As a result, a highly reliable scale has been adapted to the Turkish language and culture for both midwifery profession and all other healthcare professionals concerned with women's health and has been brought into the literature. It is thought that our study results, which have cultural differences between our study and the original study, may show differences in 7 different geographical regions of our country and in this sense, it is a scale that will lead to many comparative studies.

In the studies proposed by us, it is thought that the questioning of the emotional states about the perinatal mental health of the people to be included in the study group will be able to be compared with the answers given to the scale in the study group, however, the selection of clinician midwives as the study group will also shed light on the researchers interested in the subject.

IMPLICATION FOR NURSING PRACTICE

The perinatal period offers the opportunity to diagnose perinatal mental health problems, as it is a time during which health services are procured most abundantly [6]. In 2004, when the psychological aspects of natal and perinatal mental illnesses for the first time became the leading cause of maternal death, England stood out after the Confidential Enquiry into Maternal and Child Health [2]. Nevertheless, it is internationally documented and acknowledged that prenatal mental health issues are harmful outcomes for mothers, fathers, children, and society [1]. Midwives are in a unique and ideal position to effectively identify women at risk and to ensure early intervention [7]. Today, the global evaluation and management of perinatal mental health problems, in addition to being an inseparable component of the roles of midwives, are among the responsibilities of all other personnel concerned with birth in the context of motherhood [5]. Nonetheless, the convergence of numerous factors such as an unwillingness to define women [8] and an aversion by healthcare professionals to diagnose women affected by this situation leads to a failure in diagnosis and treatment due to a reluctance to explain how women feel, the inability to identify women's symptoms of perinatal mental health problems, and a lack of professional skill or resources [1, 9, 10]. Noonan et al. (2017) determined that the capabilities of midwives in providing women with treatment and care services are limited in many regards and that inadequate referral options, a lack of educational and institutional support, and intense working environments are the greatest factors that affect midwives. To contribute to this issue, which WHO emphasizes on, it is necessary for service providers to be able to define what the main professional problems are within their context. An

evaluation tool that ensures that services providers and commission members identify the fields of practice they lack can facilitate the development of services and the provision of education. It could also offer a means to evaluate the changes made to ensure the optimization of roles in perinatal mental health. Jomeen et al. (2018), in this regard, developed the "Professional Issues in Maternal Mental Health Scale" (PIMMHS) in 2018 as a measure against the deficiencies in education and the fields of practice [23]. As a result, a highly reliable scale has been adapted to the Turkish language and culture for both midwifery profession and all other healthcare professionals concerned with women's health and has been brought into the literature. It is thought that our study results, which have cultural differences between our study and the original study, may show differences in 7 different geographical regions of our country and in this sense, it is a scale that will lead to many comparative studies.

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