



VIOLENCE IN PREGNANCY: SCALE VALIDITY AND RELIABILITY STUDY IN TURKEY

GEBELİKTE ŞİDDET: TÜRKİYE'DE ÖLÇEK GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

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Abstract

Objective: Women are more vulnerable to violence during pregnancy and the postnatal period and they are more often subject to violence during these periods. The purpose of this study was to adapt the Abuse Assessment Screen (AAS) and the Tool for Intimate Partner Violence Screening (HITS), which are most frequently used in screening for violence in pregnancy, into Turkish and to examine the factor structure.

Methods: This methodological and descriptive study included 259 pregnant women in a public hospital in Turkey. Data were collected using a descriptive information form, and Turkish language versions of the AAS and HITS tools. These translations were performed with usual rigor. Data were evaluated using Kendall's W analysis, Cronbach's alpha value coefficient and Pearson's correlation analysis.

Results: The reliability coefficient of the AAS scale was KR20=0.801 and the Cronbach's alpha coefficient of the HITS scale was 0.86, an indication of high reliability. According to the results of the exploratory factor analysis performed to test the validity of the scales, the factor load for the AAS (77.36%) and HITS (75.12%) scales was found to be appropriate. There were found that one factor was sufficient for explaining the case according to criterion.

Conclusion: AAS and HITS scales can be used as a safe tool with validity and reliability studies in different cultures to quickly, easily and effectively identify domestic violence events during pregnancy. The Turkish adaptations of the AAS and HITS scales were determined to have a high degree of validity and reliability.

KeyWords: Pregnancy, violence, abuse, Turkish validity and reliability.

Öz

Amaç: Kadınlar gebelik ve doğum sonrası dönemde şiddete daha açık ve bu dönemlerde şiddete daha sık maruz kalmaktadır. Bu çalışmanın amacı, gebelikte şiddet taramasında en sık kullanılan İstismar Değerlendirme Ölçeği (İDÖ/AAS) ve Aile İçi Şiddeti Tarama Ölçeği (AİŞTÖ/HITS) ölçeklerini Türkçe'ye uyarlamak ve faktör yapısını incelemektir.

Yöntem: Bu metodolojik ve tanımlayıcı çalışmaya Türkiye'de bir kamu hastanesinde yatan 259 gebe dâhil edildi. Veriler, iki yazar tarafından tanımlayıcı bir bilgi formu, AAS ve HITS ölçekleri kullanılarak toplandı. Veriler, içerik geçerliği için sırasıyla Kendall's W analizi, Cronbach's alpha değeri katsayısı ve Pearson korelasyon analizi, kullanılarak değerlendirildi.

Bulgular: AAS ölçeğinin güvenilirlik katsayısı KR20=0,801 ve HITS ölçeğinin Cronbach's alpha katsayısı 0,86 olup, yüksek güvenilirliğin bir göstergesidir. Ölçeklerin geçerliliğini test etmek için yapılan açıklayıcı faktör analizi sonucuna göre AAS (%77,36) ve HITS (%75,12) ölçekleri için faktör yükü uygun değerde bulundu. Olguyu ölçütlere göre açıklamak için her iki ölçekte de bir faktörün yeterli olduğu belirlendi.

Sonuç: AAS ve HITS ölçeklerinin Türkçe uyarlamalarının yüksek düzeyde geçerlik ve güvenilirliğe sahip olduğu belirlendi. AAS ve HITS ölçekleri, farklı kültürlerde geçerlilik ve güvenilirlik çalışmaları ile gebelikte aile içi şiddet olaylarının hızlı, kolay ve etkin bir şekilde belirlenmesinde güvenli bir araç olarak kullanılabilir.

Anahtar Kelimeler: Gebelik, şiddet, istismar, Türkçe geçerlik ve güvenilirlik.

Introduction

Violence against women is a major human rights violation and a global health problem that has social and clinical consequences. One of every three women in the world (35%) is subjected to violence throughout their lives.¹ Violence against women is increasing in many countries. Gender-based violence regardless of their country, among every race, class, language, ethnicity and culture and as such, affects every aspect of society.²⁻⁶

The Declaration on the Elimination of Violence Against Women, adopted by the United Nations General Assembly in 1993 defines “violence against women” as all types of behavior, threat, oppression or the arbitrary inhibiting of freedom based on gender that may result in physical, sexual, psychological or any kind of harm to women in their private or public lives.⁷

Violence can occur in various forms, including physical, sexual, economic, and emotional violence. However, recently, new types of violence have emerged, such as date violence and the technologically-derived digital violence (cyber), with these now occurring in all societies and periods.^{5,8-10}

A study on domestic violence against women that was conducted in Turkey in 2014, reported that 36.4% of women had been subjected to physical violence, approximately 4 out of every 10 women have been subjected to physical violence by their husbands or intimate partners, 26.7% to 63% had been subjected to emotional violence, and 12% of ever-married women reported having been subjected to sexual violence at some point in their lives and 5% of ever-married women reported having been subjected to sexual violence within the last 12 months. Overall, the proportion of women experiencing emotional violence/abuse at some point in their lives was 44%. In this study, the proportion of women who have experienced at least one of these acts at any point in their lives was 30% and in the last 12 months this proportion was 15%. Not providing money for household expenses was an act that 9% of women had experienced at any point in their lives. Depriving women of their income is a form of violence/abuse that 5% of ever-married women had experienced.¹¹

Pregnancy is one of the most important periods of life for women and their families. Inflicting violence on pregnant women during this period increases the possibility of risks. Scientific evidence shows that women are more vulnerable to violence during pregnancy and the postnatal period and they are more often subjected to violence during these periods, particularly domestic violence during pregnancy.^{6,12,13} Researchers have further found that there are many risk factors associated with intimate partner violence (IPV) during this vulnerable period, with the incidence rate being between 1% and 49%¹⁴⁻¹⁷ violence in pregnancy negatively affects the health of the mother and the fetus¹⁸⁻²⁰ and the number of studies and judicial investigations is increased; thus healthcare professionals have gradually gained an awareness of this issue.²¹

According to a study conducted in Turkey, 10.9% of pregnant women had been subjected to physical violence, 52.6% had been subjected to emotional violence, 31.7% had been subjected to economic violence and 8.3% had been subjected to sexual violence.²⁰ In another study that was conducted in Turkey in 2015 that included 442 pregnant women, it was reported that 39.8% of the women had been subjected to at least one type of violence, with the most common being verbal violence (31.4%).²² In a study

conducted with 664 pregnant women in Yozgat, it was reported that 1.8% of the pregnant women were exposed to physical violence, 1.6% to verbal violence and 1.1% to economic violence.²³ Finally, one other study conducted in Turkey found that nearly one third pregnant women (32.1%) had been subjected to verbal violence and that 1.3% had been subjected to physical violence.¹⁵ In another study, the rate of physical violence during pregnancy was reported to be 8%.¹¹

UK-based and international health maintenance organizations published guidelines recommending routine screening for violence.^{24,25} The literature presents many tools for screening violence in pregnancy, including the Abuse Assessment Screen (AAS), the Tool for Intimate Partner Violence Screening (HITS: Hurt, Insult, Threaten and Scream), The Woman Abuse Screening Tool (WAST) and the Intimate Partner Violence During Pregnancy Instrument (IPVPI).²⁶⁻²⁸

The antenatal follow-up among institutions in Turkey do not follow the same protocol, and there is no routine screening tool for violence during pregnancy or the postnatal period in the Prenatal Care Management Guideline that was prepared by the Turkey Ministry of Health in 2014. In the guide prepared by the Turkish Gynecology and Obstetrics Association (TGOA) on ethical issues in Obstetrics and Gynecology (2006), it was stated that health professionals should be aware of the symptoms of violence, be able to identify cases of violence, and be able to inform people regarding types and frequency of violence. However, the guide does not offer any screening or questioning tool.²⁹

This study aimed to adapt the AAS and the HITS into Turkish, and to examine the factor structure.

With the adaptation of these tools into Turkish, healthcare professionals will be provided with user-friendly screening tools to identify cases of violence and abuse in pregnancy. Furthermore, during the study to assess the validity and reliability of the Turkish versions of these two instruments, the frequency of violence in pregnancy was determined, and it is believed that this information may serve as guide in education, studies and initiatives planned in this field. Accordingly, the following research question was developed for this study: “Are the scales used in the study reliable and valid in Turkish?”

Methods

Study Type

This is a methodological and descriptive study.

Study Population and Sample

This study was conducted with pregnant women applying to the gynecology polyclinic of a university hospital between March 26, 2018 and June 26, 2018. The sample size for this study was determined using power analysis, the results of which showed that the sample size should be 250 according to the following parameters: effect size of 0.25 (medium), $\alpha=0.05$, at the confidence interval of 80%.

Data Collection Tools

Descriptive Information Form: This form was prepared by the researchers, based on a review of the literature, and included 22 questions on socio-demographic characteristics, obstetric characteristics, and marriage status of the participants.²⁻⁶

Abuse Assessment Screen (AAS): McFarlane et al. developed this scale in 1992 to assess intimate partner violence in pregnancy.³⁰ Written consent was obtained from the original authors through postal contact to conduct the Turkish validity and reliability study of the scale. The scale includes 5 yes/no questions. In cases where the respondent answered “yes” to the question, another follow-up question on the individual/individuals responsible for inflicting violence was asked. The scale includes a body schema on which the respondent is asked to mark the injured area. Each “yes” answer has the value of 1 point. The cutoff score was determined to be 3, while the total score is 5. The scale examines occurrences of physical, psychological, and/or sexual violence in the last one year during and before pregnancy. Numerous studies have reported on the psychometric data related to the original scale (Table 1.).

Tool for Intimate Partner Violence Screening (HITS): Sherin et al. developed this scale to follow-up and screen for domestic intimate partner violence.³¹ The scale is organized as a five-point, Likert-type scale that includes four items. Each item is scored between 1 and 5 points, and the total scale is scored between 4 and 20. Researchers determined the cut-off point of the scale to be 10. A score higher than 10 was accepted as indicating a high risk for violence. Again, written consent was obtained from the original authors through postal contact to conduct the Turkish validity and reliability study of the scale (Table 2.).

Cultural Adaptation

As the first step of the language validity of both scales, 10 specialists translated the scale from English to Turkish. Next, a back translation of the scale was performed by two academicians, fluent in both languages. An independent specialist then evaluated the translations to form a common text. Later, the final forms of the scales were created, based on the opinions of 10 specialists from this field who validated the questions. To assess test-retest reliability of the scale, the test was re-administered to 25 subjects 15-30 days later.

The following steps were carried out in the Turkish adaptation of the scale.

1stStep: Translation of scale items from English to Turkish and its presentation to expert opinion.

2ndStep: Examination of the suitability of the item structure of the scale to the Turkish sample using exploratory factor analysis.

3rdStep: Performance of an item analysis to examine the relationship between items and scale within the original structure of the scale.

4thStep: Determination of the internal consistency of the original structure of the scales.

5thStep: Examination of the time-variant validity of the measurements obtained by the scales' Turkish versions.

Data Collection and Ethical Consideration

Study data were obtained through face-to-face interviews that were conducted in a private room of the nonstress test (NST) unit and that only involved the researcher and the individual pregnant women presenting to the pregnancy polyclinic. Written approval to perform the study was obtained from Kocaeli University Non-Invasive Clinical Studies Ethics Committee (KOU KAEC 2018/418) and from the institution where the data were collected. The women were anonymously registered for participation in the study. A pilot study was conducted with 10 pregnant women

at two large maternity hospitals in Kocaeli/Turkey to evaluate certain variables, such as readability, intelligibility, item format study duration, and the time spent on other specific questions. Individuals were asked to evaluate the items they had difficulty in understanding in terms of readability and order of the items. However, since none of the participants had any suggestions after completing the scales, the last forms of the scales were used for the final version.

Statistical analysis

Study data were evaluated using SPSS for Windows, version 20.0 (IBM Corp., Armonk, NY, USA) package program. The significance level was set at $p < 0.05$ in data analysis. Descriptive statistics methods (mean and standard deviation, n, and frequency distribution) and non-parametric chi-square tests were used to evaluate the data. Agreement among the specialists evaluating the scale questions was evaluated using Kendall's coefficient of concordance. In the analysis of the data, test-retest analysis and measurement invariance over time were applied. For the reliability study, Cronbach's alpha value and the KR20 coefficient were used to confirm the internal consistency of the scales and subscales. Scale validity was determined using factor analysis, where the factors were determined (factor extraction) using the principal component method, KMO and Bartlett's test of sphericity. Pearson's Correlation Test was performed to identify the relationship between item questions.³²

Result

This study included 259 pregnant women, whose mean±SD (range) age was 28.32±5.42(18-43). The mean age of the husbands of the pregnant women was 31.96±5.64 (18-60), and the pregnant women's mean duration of marriage was 5.80±4.90 (1-22) years. Most of the pregnant women (44.8%) had graduated from primary school, and 81.1% were living with their husband/partner and children, and 57.9% had incomes equal to their expenses. The mean number of pregnancies was 2.38±1.31 (1-9) while the mean gestational week was 35.53±3.77 (7-41). Table 3 presents the women's descriptive and obstetric characteristics.

In total 259 pregnant women completed the Turkish language versions of the AAS and HITS tools and the reliability coefficient of the AAS items was found to be KR 20=0.801. The women's mean HITS score on the violence screening scales was determined to be 4.90±2.13 (4-20). The mean score of the nine pregnant women who were evaluated as high risk (≥10 points) was 14.11±4.04 (10-20), while the mean score of the 90 pregnant women who had been subjected to violence (≥5 points) according to results of the HITS evaluation was 6.61±2.94 (5-20).

The mean AAS score was found to be 0.16±0.656 (0-4). The ten pregnant women who were determined to be high risk (≥3points) had a mean AAS score of 3.20±0.421 (3-4). The mean AAS score of the pregnant women who had been subjected to violence (≥1 points) was 2.33±1.084 (1-4).

The reliability coefficient for the AAS (KR20=0.801) indicated that the scale was highly reliable. Item-total analysis showed that the contribution of each question to the scale was fairly high. The fourth question was found to be the most important question for the scale, while the second question contributed the least to the scale. Nonetheless, it was decided that the second question should remain on the scale (Table 4.).

In the evaluation of factor analysis, it was found that one factor was sufficient for explaining the case according to the Kaiser-Meyer-Olkin (KMO) value and Bartlett's test of sphericity of the AAS scale were found to be 0.752 and $\chi^2=638.2$, $p<0.001$, respectively.

HITS scale's Cronbach's alpha reliability coefficient was found to be 0.868, which indicated that the scale was highly reliable. Item-total analysis showed that the contribution of each question to the scale was fairly high (Table 6.).

For the factor analysis, the factors were determined (factor extraction) using the Principal Component Method.

to $\lambda \geq 1$ criterion. The rotated factor model showed the explained variance to be 77.36% (Table 4.).

Varimaxrotation, one of the factor rotation methods, was used to determine the proper factor number.

According to $\lambda \geq 1$ criterion, one factor was sufficient for explaining the case. In varimax rotation, it is considered appropriate to select one factor based on the Screen test. The rotated factor model showed the explained variance to be 75.126% (Table 7.).

It was determined that all items corresponded to one another and coincided with the aim of this study (Table 8.). The KMO and χ^2 of the HITS scale were found to be 0.810 and 599.813, $p<0.001$, respectively.

Table 1. HITS* Tool for Intimate Partner Violence Screening

(HITS: English Version)	(HITS: Türkçe Uyarlaması)
Please read each of the following activities and fill in circle that best indicates the frequency with which you partner acts in the way depicted.	Lütfen aşağıdaki ifadelerin her birini okuyunuz ve eşinizin belirtilen davranışı sergileme sıklığını doğru şekilde işaretleyiniz.
How often does your partner?	Eşiniz ne sıklıkta?
1. Physically hurt you	1. Fiziksel olarak size zarar verir
1. Never	1. Hiçbir zaman
2. Rarely	2. Nadiren
3. Sometimes	3. Bazen
4. Fairly often	4. Oldukça Sık
5. Frequently	5. Çoğu zaman
2. Insult or talk down to you	2. Aşağılar veya küçümseyerek konuşur
1. Never	1. Hiçbir zaman
2. Rarely	2. Nadiren
3. Sometimes	3. Bazen
4. Fairly often	4. Oldukça Sık
5. Frequently	5. Çoğu zaman
3. Threaten you with harm	3. Sizi zarar vermeye tehdit eder
1. Never	1. Hiçbir zaman
2. Rarely	2. Nadiren
3. Sometimes	3. Bazen
4. Fairly often	4. Oldukça Sık
5. Frequently	5. Çoğu zaman
4. Scream or curse at you	4. Size bağırır veya küfür eder
1. Never	1. Hiçbir zaman
2. Rarely	2. Nadiren
3. Sometimes	3. Bazen
4. Fairly often	4. Oldukça Sık
5. Frequently	5. Çoğu zaman

*HITS is copyrighted in 2003 by Kevin Sherin MD, MPH; for permission to use HITS

Table 2. Abuse Assessment Screen (AAS)

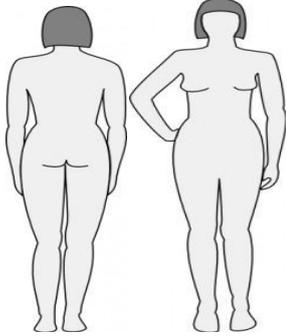
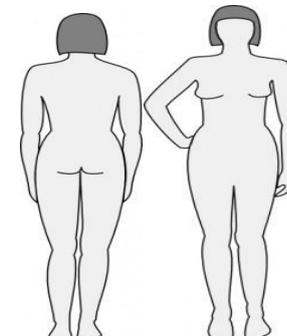
Abuse Assessment Screen (AAS): English Version	İstismar Değerlendirme Ölçeği (AAS): Türkçe Uyarlaması
<p>1. Have you ever been emotionally or physically abused by your partner or someone important to you? YES NO</p> <p>2. Within the last year, have you ever been hit, slapped, kicked, or otherwise physically hurt by someone? YES NO</p> <p>If YES, who? (Circle all that apply) Husband Ex-Husband Boyfriend Stranger Other Multiple Total # of times: _____</p> <p>3. Since you've been pregnant, have you been slapped, kicked, or otherwise physically hurt by someone? YES NO</p> <p>If YES, who? (Circle all that apply) Husband Ex-Husband Boyfriend Stranger Other Multiple Total # of times: _____</p> <p>Mark the area of injury on the body map. Score each incident according to the following scale:</p> <p>1 = Threats of abuse including use of weapon _____ 2 = Slapping, pushing; no injuries and/or lasting pain _____ 3 = Punching, kicking, bruises, cuts and/or continuing pain _____ 4 = Beating up, severe contusions, burns broken bones _____ 5 = Head injury, internal injury, permanent Injury _____ 6 = Use of weapon; wound from weapon _____</p> 	<p>1. Eşiniz tarafından veya sizin için önemli biri tarafından hiç duygusal veya fiziksel istismara maruz kaldınız mı? EVET HAYIR</p> <p>2. Geçtiğimiz bir yıl içerisinde vurma, tokat, tekme veya birisi tarafından fiziksel şiddete maruz bırakıldınız mı? EVET HAYIR</p> <p>Eğer EVET ise, kimdi? (Uygun olanların hepsini işaretleyiniz) Kocam, Eski kocam, Erkek arkadaşım Yabancı, Diğer Birden çok Toplam # sayısı: _____</p> <p>3. Hamile kaldığınızdan buyana tokat, tekme veya birisi tarafından fiziksel şiddete maruz bırakıldınız mı? EVET HAYIR</p> <p>Eğer EVET ise, kimdi? (Uygun olanların hepsini işaretleyiniz) Kocam Eski kocam Erkek arkadaşım Yabancı Diğer Birden çok Toplam # sayısı: _____</p> <p>Yaralandığınız bölgeyi vücut şeması üzerinde işaretleyiniz. Her bir vakayı aşağıdaki ölçeğe göre puanlayınız.</p> <p>1 = Silah kullanımı da dâhil olmak üzere istismar tehdidi _____ 2 = Yaralanma ve/veya uzun süren ağrı olmaksızın tokat atma, itme; _____ 3 = Yumruk atma, tekme atma, morarmalar, kesikler ve/veya devam eden ağrılar _____ 4 = Dayak, şiddetli kontüzyon (ezikler), yanıklar, kemik kırılmaları _____ 5 = Baş yaralanması, iç organ yaralanması, kalıcı yaralanmalar _____ 6 = Silah kullanımı, silahlı yaralama _____</p> 
<p>4. Within the last year, has anyone forced you to have sexual activities? YES NO</p> <p>If YES, who? (Circle all that apply) Husband Ex-Husband Boyfriend Stranger Other Multiple Total # of times _____</p> <p>5. Are you afraid of your partner or anyone listed above? YES NO</p>	<p>4. Geçtiğimiz bir yıl içerisinde, herhangi birisi siz i cinsel ilişkiye zorladı mı? EVET HAYIR</p> <p>Eğer EVET ise, kimdi? (Uygun olanların hepsini işaretleyiniz) Kocam Eski kocam Erkek arkadaşım Yabancı Diğer Birden çok Toplam # sayısı: _____</p> <p>5. Eşinizden veya yukarıda bahsedilen herhangi birinden korkuyormusunuz? EVET HAYIR</p>

Table 3. Participants' Descriptive Characteristics

Socio-demographic Characteristics	n	%
Education Level		
Literate	4	0.16
Primary School	116	44.8
High School	84	32.4
University	55	21.2
Economic Status		
Income < Expenses	97	37.5
Income = Expenses	150	57.9
Income > Expenses	12	4.6
Husband's Education Level		
Literate	3	1.2
Primary School	105	40.5
High School	87	33.6
University	64	24.7
Type of Marriage		
Arranged marriage with both parties willing	70	27.0
Married after dating	183	70.7
Other	6	2.3
Obstetric Characteristics		
	Mean-SD	Min-max
Number of Pregnancies	2.38±1.31	1-9
Number of Deliveries	1.04±.97	0-5
Gestational Week	35.53±3.77	7-41

Table 4. Total Variance Explained (AAS)

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.845	56.891	56.891	2.841	56.820	56.820
2	1.023	20.470	77.361	1.027	20.541	77.361
3	.713	14.252	91.613			
4	.275	5.508	97.120			
5	.144	2.880	100.000			

Extraction Method: Principal Component Analysis.

Table 5. AAS Scale Items Correlation

	AAS1	AAS2	AAS3	AAS4	AAS5
AAS1	1.000	.796	.716	.235	.333
AAS2	.796	1.000	.825	.271	.384
AAS3	.716	.825	1.000	.328	.224
AAS4	.235	.271	.328	1.000	-.005
AAS5	.333	.384	.224	-.005	1.000

AAS: Abuse Assessment Screen

Table 6. HITS Item Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1 st Item	3.80	3.156	.765	.838
2 nd Item	3.68	2.592	.745	.820
3 rd Item	3.80	2.735	.779	.811
4 th Item	3.45	2.187	.713	.860

HITS: Hurt, Insult, Threaten and Scream (Tool for Intimate Partner Violence Screening)

Table 7. Total Variance Explained (HITS)

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.005	75.126	75.126	3.005	75.126	75.126
2	.443	11.082	86.207			
3	.340	8.498	94.706			
4	.212	5.294	100.000			

Table 8. HITS Scale Items Correlation

		HITS1	HITS2	HITS3	HITS4
HITS1	Pearson's Correlation	1	.665**	.782**	.599**
	Sig. (2-tailed)		.000	.000	.000
	N	259	259	259	259
HITS2	Pearson's Correlation	.665**	1	.658**	.656**
	Sig. (2-tailed)	.000		.000	.000
	N	259	259	259	259
HITS3	Pearson's Correlation	.782**	.658**	1	.646**
	Sig. (2-tailed)	.000	.000		.000
	N	259	259	259	259
HITS4	Pearson's Correlation	.599**	.656**	.646**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	259	259	259	259

*Results are significant if $p \leq 0.05$.

Discussion

The researchers translated two screening tools for assessing the risk and occurrence of violence against women, the AAS and HITS tools, from English into Turkish. This study then aimed to determine the validity and reliability of Turkish language versions of the AAS and HITS scales in a population of pregnant women in a single city in North Western Turkey.

Highly satisfactory results were obtained regarding the validity and reliability of the Turkish AAS. Various statistical methods were used in the evaluations conducted to determine the scope and construct validity of the scale. Scale questions were presented to specialists for their opinion in the scope evaluation. Opinions of the questions were evaluated in terms of clarity, simplicity and relationship using Kendall's coefficient of concordance test and CVI. Statistical evaluations showed that the inter-raters' Kendall's coefficient of concordance value and level of significance were 0.068 and 0.792, respectively. These results were valuable since they revealed that the specialists were in agreement regarding scale items.

In the internal consistency analysis of the scales, the reliability coefficient, as opposed to Cronbach's alpha value, was calculated because the scale consisted of "yes/no" questions.³²

The reliability coefficient was KR20=0.801, which shows that the scale is highly reliable. In other words, the scale can quickly, easily and effectively be used as a tool for identifying incidences of domestic violence in pregnancy in Turkey. Cronbach's alpha value of the original scale,

developed by McFarlane, was found to be 0.80, while for the Greek version developed in 2010, it was also found to be 0.80.³³

In the evaluation of factor analysis, one factor was sufficient for explaining the case according to $\lambda \geq 1$ criterion. The rotated factor model showed the explained variance, KMO value and Bartlett's test of sphericity to be 56.891%, 0.752, and $\chi^2 = 638.2$, $p < 0.001$, respectively. The KMO value of the scale's Greek version, which was 0.780, was similar to that of the Turkish version.³³

Inter-raters' Kendall's W value and level of significance of the HITS scale were found to be 0.097 and 0.476, respectively. Internal consistency analysis of the scale found that Cronbach's alpha value was 0.86, meaning that the scale was highly reliable and effective in Turkish. Cronbach's alpha was found to be between 0.61–0.8 in some of the studies conducted on HITS.^{34,35} The Cronbach's alpha value determined in this study was found to be higher than that reported in other studies.

According to $\lambda \geq 1$ criteria of the HITS scale, one factor was sufficient for explaining the case. The rotated factor model found the explained variance to be 75.126%. The KMO and χ^2 of the HITS scale were determined to be 0.810 and 599.813, $p < 0.001$, respectively.

A significant relationship was found between the test and retest scores for HITS ($r = 1.000$, $p < 0.001$) and also for AAS ($r = 0.689$, $p < 0.010$) in the measurement invariance over time test of the scales. Pre- and post-test results were similar, and the scales were concluded to be reliable.

Conclusion

It was shown that Turkish adaptations of the AAS and HITS scales performed had a higher degree of validity and reliability compared to that of other international studies of these scales. The scales are recommended for use by midwives, nurses, and all health professionals for screening and evaluating the incidence of abuse and violence against pregnant women.

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Conflict of interest

The authors have no conflicts of interest to disclose.

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Author Contributions

AE: The hypothesis of the study and desing; AE, RÖ, SÖ: Project development; AE, RÖ, SÖ: Literature search; AE, RÖ, CB: Analysis; AE, SÖ, CB: Manuscript drafting/writing/editing; AE, CB: Critical review, SÖ: Resources

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