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Development and Validation of an Electronic Scale for Sexual Violence Experiences in Iranian Women

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Abstract

Objectives: According to the evidence, 35% of women have experienced sexual violence worldwide. This study aimed to develop and validate an electronic scale for sexual violence experiences (SVE) in Iranian women.

Materials and Methods: In this mixed-method study, we conducted an item pool by reviewing the existing sexual violence scales in the literature and sent the items to the expert team for initial consensus. Then, we measured the validity and reliability of the developed scale. The samples included 808 women (age range: 15-45 years) in Kerman province from October to December 2020.

Results: The final scale consisted of 43 items. Face validity was achieved by applying the views of the target community. The content validity results were acceptable. The correlation coefficient between the Sexual Experience Questionnaire (SEQ) and the Domestic Violence Questionnaire (DVQ) with the SVE was 0.68 and 0.51, respectively. Exploratory factor analysis (EFA) (χ^2=27973.72, df=903, and P=0.001) identified eight factors. The results also showed good reliability (Cronbach's alpha=0.9, Pearson's correlation r=0.9, P=0.001).

Conclusions: Since the SVE had good validity and reliability, the scale can be regarded as a suitable tool for measuring sexual violence among Iranian women.

Keywords: Validity, Reliability, Violence, Iranian women

Introduction

Sexual violence against women is a worldwide concern (1), which is defined as any sexual act or attempt to get a sexual act with a person against her consent (2). Sexual violence is the most humiliating and destructive type of violence that causes severe physical and mental problems for victims (3). These problems include memory and concentration disorders, low self-esteem, aggression, social isolation, self-harm, suicide, sleep disorders, apathy, helplessness, depression, anxiety, shame, prostitution, addiction, pregnancy, miscarriage, and sexually transmitted diseases (3-6).

A method of preventing any phenomenon is to determine its prevalence (7). The World Health Organization (WHO) reported a 35% prevalence of sexual violence against women worldwide (8). However, the rate of violence in studies is 5%-30%. For example, this rate is 5.4% in Germany (9), 7.2% in Spain (10), 10% in South Africa (11), and 27% in Uganda (12). The discrepancy in prevalence between WHO reports and studies stems from women's conservatism in reporting sexual violence.

Conservatism leads to a lack of reporting and a declining trend of reporting sexual violence against women. For example, an Australian study reported that only 36% of female victims reported physical assault, and 19% reported a sexual assault to police (13). An American study showed that the number of reports of sexual violence against women fell by 50% in one year (14). Contradictory statistics in different countries show the impact of the prevailing conditions on women in reporting sexual violence (15), so that women in traditional countries express less sexual violence (16).

Iran is a country with a patriarchal and traditional culture (17), and there are no accurate statistics on sexual violence prevalence. Studies estimate that 80% of sexual violence cases are not reported in this country (18) because it has risks such as immoral labels, family conflicts in honor killings, ethnic conflicts, forced marriage, divorce, and definite celibacy for women (19-24). However, studies in different cities of Iran have provided various statistics on the prevalence of sexual violence, including 30% in Marivan (25), 9.3% in Ahvaz (26), 22% in Shiraz (27), 30% in Miandoab (28), and 14.5% in Kerman (29). Studies in Iran show that non-native and unreliable tools have been used to determine the prevalence of sexual violence (30,31), which leads to unrealistic results. Therefore, providing appropriate tools based on the traditional culture of Iran and conditions for women to gain more trust in the confidentiality of their identities can help accurate sexual violence reporting.

With the advent of technology in Iran and increasing access to the Internet and smartphones, the use of the Internet in everyday life has become widespread (32). Since this study was conducted during the outbreak of

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Key Messages

- Iranian women avoided reporting sexual violence because of conservatism and fear of the consequences of revealing their identities.
- This study provided an electronic scale to measure sexual violence among women based on Iranian culture.
- The developed scale consisted of eight factors and had good validity and reliability.

coronavirus disease 2019 (COVID-19), many individuals did not participate in research due to the fear of transmitting the virus. Therefore, we decided to develop an electronic scale to increase people's trust compared to the printed versions. Also, the fear of disclosure of identity, the impact of the researcher's presence on the respondents, research costs, longer research time, and non-compliance with health protocols are less in these versions (33). Accordingly, this study aimed to develop and validate an electronic scale for sexual violence experiences (SVE) in Iranian women to help researchers, consultants, and planners to measure sexual violence more accurately.

Materials and Methods

In this mixed-method study, we conducted an item pool by reviewing the existing sexual violence scales in the literature and sent the items to the expert team for initial consensus. Then, we measured the validity and reliability of the developed scale. The samples included 808 women (age range: 15-45 years) in Kerman province from October to December 2020.

Literature Review and Item Generation Phase

This step included searching such databases as the PubMed and Google Scholar for sexual violence scales with the following keywords: 'sexual violence', 'sexual harassment', 'rape', and 'domestic violence' in combination with the words 'questionnaire', 'scale', 'validation', and 'development'. Item pool was conducted from eight available scales (144 items). Finally, three duplicate items were removed and a preliminary draft of the scale including 141 items was developed.

Development and Validation Phase

The development and validation phase consisted of two steps, including scale construction by the expert team and instrument validation (face, content, concurrent, structural, stability, and internal compatibility).

In the first step, we sent the extracted items to the expert team (Table 1). The aim was to reach a consensus on the pre-final items included in the SVE. The expert team was allowed to delete, add, or change the phrase of each item. The results of this stage led to the construction of a scale consisting of 43 items.

In the second step, face validity was assessed by distributing the scale between 25 women aged 15-49 years to examine the difficulty, ambiguity, and the need to remove or change items.

In the third step, content validity index (CVI) and content validity ratio (CVR) were used to assess the content validity of the questionnaire. The evaluation was performed by ten experts (individuals with similar expertise to the expert team but different from them). The experts assessed the necessity of each item based on "essential, useful but unnecessary, and unnecessary" (CVR) and the relevance of each item to the scale's aim based on "irrelevant, needs major revision, relevant but needs minor revision, and relevant" (CVI).

In the fourth step, the Spearman's rank correlation coefficient was calculated through comparing the scores obtained from the SVE with the Sexual Experience Questionnaire (SEQ) and the Domestic Violence Questionnaire (DVQ). Louise Fitzgerald developed the SEQ in 1998. This scale was a 24-item version of the original SEQ, which consisted of four factors. The researchers used factor analysis and Cronbach's alpha to measure validity and reliability ($\alpha = 0.92$). Indo developed the 20-item DVQ by combining two other local questionnaires in India to assess domestic violence against women. The total score of the questionnaire is between 0 and 79. The researchers confirmed the face, content, and structural validity and Cronbach's alpha ($\alpha = 0.94$) of the instrument.

In the fifth step, the researchers performed exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The sampling adequacy index was Kaiser-Meyer-Olkin (KMO) and Bartlett tests. The loading criterion was above 0.4. EFA by the varimax rotation method was used to determine the scale factors. The identified items were also confirmed by CFA.

Participants and Data Collection

Due to the prevalence of COVID-19 disease in Kerman province, the distribution of printed forms was not possible. So, online methods and telephone calls were used to collect data. To distribute the questionnaires, the researchers first posted a 'call for cooperation' on the information channels of universities across Kerman province in social media, including Telegram, Instagram, and WhatsApp. Then, 41 students volunteered to collect data. After giving online explanations about the study objectives, ethics, and how

Table 1. Characteristics of the Expert Team

Gender	Degree	Type of Specialization
Female	PhD	Reproductive health
Female	PhD	Reproductive health
Male	PhD	Psychometrics
Male	PhD	Psychologist
Female	MD, PhD	Obstetricians
Male	PhD	Psychometrics
Male	PhD	Psychologist

MD: Medical Degree; PhD: Doctor of Philosophy.

to conduct telephone interviews with the participants, the students were asked to follow the same approach in collecting data. Finally, the candidates contacted the participants (their acquaintances) to enter the study.

All women aged 15-45 years who signed an informed consent were included in the study. The exclusion criteria were unwillingness to cooperate in the research and having physical or mental problems. Participants were free to choose the method of completing the scale (by phone or online). It took 15 to 20 minutes to complete each form by telephone, during which the interviewer contacted the participant, read the questions and recorded the answers. For those who decided to complete the questionnaire online, the interviewer sent the link to Instagram, WhatsApp, Telegram, or the participants' emails. From October to December 2020, the interviewers sent or completed 860 forms throughout the province (20 people for each item). We excluded incomplete or unanswered questionnaires (36 questionnaires), as well as those that did not meet the inclusion criteria (10 questionnaires). Finally, 808 questionnaires remained.

To evaluate the reliability, we assessed internal consistency and used test-retest method. We assessed internal consistency by evaluating Cronbach's alpha, total item correlation, Cronbach's alpha if an item is deleted, and inter-item correlation. The test-retest was conducted by sending the scale twice to 20 women aged 15-45 years with an interval of three weeks. The correlation between the two tests was then examined.

Statistical Analysis

Percentage and frequency of demographic variables, KMO and Bartlett sphericity test, Cronbach's alpha, and Pearson's correlation coefficient were calculated using the Statistical Package for the Social Sciences (SPSS) software (version 18). EFA was performed using the principal component method with varimax rotation. CFA was performed with LISREL software (version 8.8). The level of significance was considered as 0.05.

Translation of the Scale

First, the two translators translated the material into Persian separately, then compared both versions in terms of differences in translation. Next, the two translators agreed to provide the final translation. Eventually, the items were back-translated to English.

Results

After three rounds of draft distribution of initial items among the expert team, a consensus was reached on the final version of the SVE scale. Most comments were about deleting items or changing their wording. Also, the two items "definition of fitness and beauty of face and clothes" and "sexual abuse with the promise of marriage" were added to the scale.

Face Validity of SVE

The scale was given to 25 women aged 15-45 years, and some items were slightly edited based on the participants' opinions.

Content Validity of SVE

Regarding content validity, the experts approved all the included items. The CVR for 43 items ranged from 0.65 to 0.1. According to Lawshe, the minimum acceptable CVR score for keeping each item in the evaluation by ten experts is 0.62 (34). CVI was also calculates as 0.81; the minimum acceptable CVI is equal to 0.70 (35,36).

Concurrent Validity of SVE

To assess the concurrent validity, each participant filled the SVE scale along with SEQ and DVQ. The results indicated that the correlation coefficients between SEQ and DVQ with the SVE scale were 0.68 and 0.51, respectively ($P < 0.001$).

Exploratory Factor Analysis

In our study, KMO >0.6 indicated sampling adequacy and Bartlett <0.05 confirmed that the use of factor analysis was appropriate (37,38). Demographic characteristics of the samples and the values of Bartlett and KMO tests are shown in Tables 2 and 3, respectively. The scale consisted of eight factors that accounted for 72% of the total variance (Table 4).

The extraction coefficients of all items for the eight-factor model were above 0.4 (criteria for maintaining each item). So, no items were removed from the scale. Factors according to items and theoretical background

Table 2. Demographic Characteristics of the Participants (n = 808)

Demographic Variables	
Age (y), mean ± SD	25.2 ±7.2
Household income, No. (%)	
<120 $	443 (54.8)
120-300 $	320 (39.6)
>300 $	45 (5.6)
Education status, No. (%)	
Illiterate	6 (0.7)
Under diploma & diploma	449 (55.5)
University	353 (43.7)
Marital status, No. (%)	
Single (single/divorced/widowed)	370 (45.8)
Married	438 (54.2)
Housing situation, No. (%)	
Rental	204 (25.2)
Personal	604 (74.8)
Occupation, No. (%)	
Employed	136 (16.8)
Housewife	395 (48.9)
Student	277 (34.3)

Table 3. Test Results of KMO and Bartlett's Test

Test Name	Value		
KMO measure of sampling adequacy	0.96		
Bartlett's test of sphericity	**Chi-square**	**df**	***P* value**
	27973.72	903	0.001

were named as follows: 1- Rape (8 items), 2- Deception (6 items), 3- Non-verbal sexual violence (5 items), 4- Internet sexual violence (6 items), 5- Threats (6 items), 6- Verbal sexual violence (5 items), 7- Physical sexual violence (4 items), and 8- Scopophilia (3 items).

Confirmatory Factor Analysis

As shown in Figure 1, the SVE factors were considered as latent variables in CFA. The following are the fitness indicators for the SVE in Table 5. Given the values of chi-square/degrees of freedom (CMIN/DF), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), parsimonious normed fit index (PNFI), and

Table 4. Factor Loading

Factor Item	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
i11	**0.82**	0.15	0.12	0.13	0.13	0.12	0.12	0.12
i5	**0.82**	0.14	0.14	0.11	0.17	0.11	0.08	0.11
i12	**0.83**	0.14	0.12	0.14	0.16	0.13	0.11	0.08
i15	**0.83**	0.13	0.13	0.1	0.11	0.11	0.14	0.09
i9	**0.83**	0.12	0.09	0.12	0.15	0.1	0.09	0.12
i33	**0.8**	0.15	0.05	0.13	0.12	0.12	0.1	0.14
i24	**0.82**	0.15	0.08	0.16	0.12	0.13	0.11	0.09
i6	**0.8**	0.11	0.17	0.14	0.19	0.14	0.13	0.07
i20	0.4	0.17	0.06	0.14	0.17	0.17	0.15	**0.72**
i14	0.39	0.15	0.1	0.14	0.13	0.16	0.14	**0.75**
i42	0.1	0.11	0.32	0.14	0.25	0.25	0.27	**0.62**
i10	0.19	0.14	0.26	0.15	**0.68**	0.19	0.23	0.1
i16	0.21	0.16	0.28	0.16	**0.59**	0.24	0.15	0.12
i17	0.23	0.18	0.18	0.22	**0.69**	0.16	0.2	0.07
i32	0.23	0.21	0.18	0.29	**0.62**	0.19	0.09	0.16
i23	0.23	0.19	0.16	0.26	**0.67**	0.22	0.13	0.07
i43	0.23	0.3	-0.02	0.22	**0.63**	0.22	0.13	0.13
i25	0.2	0.25	0.12	**0.66**	0.25	0.19	0.07	0.12
i2	0.24	0.19	0.07	**0.67**	0.26	0.17	0.16	0.1
i30	0.14	0.2	0.26	**0.69**	0.12	0.19	0.17	0.08
i21	0.21	0.16	0.28	**0.69**	0.19	0.21	0.2	0.07
i1	0.14	0.13	0.31	**0.62**	0.25	0.16	0.21	0.09
i35	0.19	0.14	0.32	**0.66**	0.2	0.21	0.21	0.07
i22	0.21	0.23	0.57	0.32	0.15	0.27	0.14	0.11
i34	0.16	0.27	**0.71**	0.2	0.18	0.14	0.18	0.09
i8	0.15	0.2	**0.74**	0.21	0.2	0.15	0.14	0.06
i38	0.15	0.22	**0.74**	0.2	0.16	0.19	0.18	0.04
i26	0.15	0.25	**0.69**	0.21	0.11	0.17	0.1	0.14
i41	0.13	**0.54**	0.46	0.2	0.19	0.18	0.24	0.03
i18	0.18	**0.72**	0.25	0.17	0.13	0.21	0.15	0.09
i28	0.22	**0.74**	0.22	0.16	0.17	0.2	0.11	0.09
i31	0.22	**0.72**	0.21	0.16	0.18	0.14	0.13	0.12
i36	0.19	**0.7**	0.2	0.18	0.24	0.13	0.16	0.07
i29	0.19	**0.74**	0.19	0.19	0.16	0.19	0.17	0.08
i37	0.15	0.21	0.15	0.2	0.15	0.1	**0.71**	0.1
i19	0.21	0.18	0.14	0.18	0.12	0.21	**0.75**	0.13
i13	0.19	0.15	0.2	0.2	0.2	0.21	**0.7**	0.12
i4	0.17	0.16	0.19	0.15	0.21	0.19	**0.73**	0.1
i40	0.17	0.18	0.23	0.18	0.14	0.71	0.14	0.15
i3	0.17	0.18	0.2	0.18	0.24	0.69	0.15	0.08
i27	0.14	0.22	0.14	0.23	0.21	0.69	0.13	0.11
i7	0.2	0.15	0.16	0.17	0.2	0.72	0.18	0.08
i39	0.2	0.19	0.15	0.21	0.2	0.65	0.21	0.14
Total	6.85	4.15	3.95	3.95	3.72	3.57	3.06	1.89
Explained Var (%)	15.93	9.66	9.17	9.17	8.65	8.3	7.11	4.39

Note: Bolded numbers represent questions of the relevant dimensions.

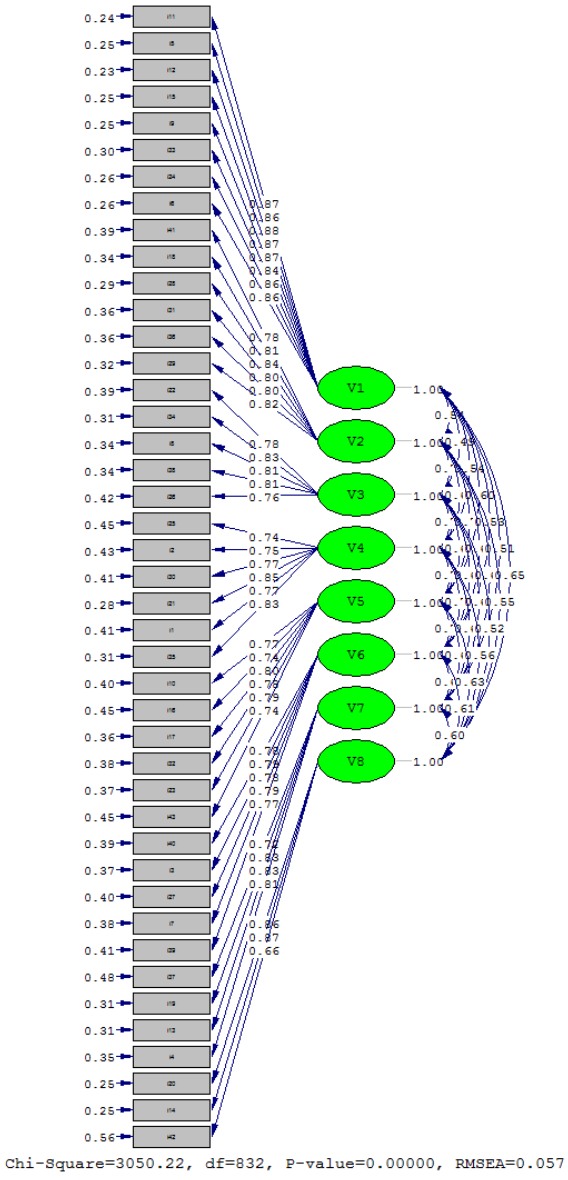

Figure 1. Standard Coefficient Model.

root mean square error of approximation (RMSEA), we witnessed that the data supported the eight-factor model.

Reliability of SVE

Based on the results, Cronbach's alpha values were optimal for the whole scale (α=0.91) and the factors (α>0.86). The values for these eight factors were as follows: factor 1: 0.89, factor 2: 0.88, factor 3: 0.92, factor 4: 0.90, factor 5: 0.92, factor 6: 0.89, factor 7: 0.87, and factor 8: 0.93. An alpha coefficient above 0.7 indicates acceptable reliability (39). The results of the item-total correlation indicated that each item had a significant and positive correlation with the total score, which is above the acceptable value according to Weber et al (40). Also, by deleting each item, Cronbach's alpha showed a slight change, which meant that no item needed to be deleted. The values of the item-total correlation and the deleting of each item are presented in Table 6. The inter-item correlations ranged from 0.26 to 0.78. The value of the Pearson's correlation coefficient was 0.9. Accordingly, the SVE had good reliability.

Discussion

It seems essential to create a universal scale on sexual violence that covers all its dimensions in Iran. Based on the existing questionnaires on sexual violence, we designed an initial scale with 141 items. After validation steps, including face and content validity, concurrent validity, EFA, CFA, and reliability checking, the final questionnaire was confirmed with 43 items and eight factors.

We approved the content validity by examining CVR and CVI. The correlation between the scores of SVE with SEQ and DVQ indicated concurrent validity. The correlation between the scores of the SVE with DVQ was less than the correlation between the SVE and SEQ. This difference was due to the measurement of the type of violence because the SVE measured only sexual violence, but the DVQ also reflected physical and psychological violence. Cronbach's alpha values of the scale and factors were high (41). The reliability of the test-retest was 0.9, indicating a good consistency and stability.

The findings of our study indicated that sexual violence consisted of a multi-factor structure. While this finding is similar to the findings of several studies (42-48) it is different from the results of the study by Cecil, which confirmed a single-factor structure for sexual violence (49).

Along with these findings, French presented a 17-item scale that consisted of two factors, including the manipulation and use of materials and aggression. Reddy also presented a 20-item scale consisting of three dimensions, including the hostile environment, quid pro quo, and criminal sexual abuse. Raghavan's 42-item scale included seven factors: (threats, exploit, humiliate, pressure, relational threats and manipulation, hopeless, and helpless). He's 33-item scale included three factors as follows: emotional manipulation, defection threat, and violence threat (42-48). Mathes introduced a 13-item scale with three factors, including verbal, touch/exposure, and illegal. Reddy's 18-item scale had three factors, including sexual hostility, sexual coercion, and unwanted sexual attention. The 17-item scale by Fitzgerald had five

Table 5. General Indicators of Fitting in the SVE

	CMIN/DF	GFI	AGFI	NFI	CFI	IFI	PNFI	RMSEA
Results	3.66	0.91	0.91	0.93	0.91	0.9	0.65	0.057
Acceptable fit	5	0.9	0.9	0.9	0.9	0.9	0.5	0.1

Table 6. Reliability of the Sexual Violence Experience

Items	Mean	SD	Corrected Item/Total	Alpha if Item Deleted
i1- Showing porn movies	0.62	1.07	0.67	0.97
i2- Sending pornographic content	0.57	0.96	0.66	0.97
i3- Talking about sexual issues	0.54	0.98	0.66	0.97
i4- Kissing the limbs	0.59	1.01	0.63	0.97
i5- Coercion to oral sex	0.43	0.78	0.63	0.97
i6- Having sex after giving drugs or alcohol	0.44	0.81	0.66	0.97
i7- Telling sexual jokes	0.52	0.95	0.64	0.97
i8- Staring	0.59	1.04	0.66	0.97
i9- Beating to have sex	0.4	0.77	0.60	0.97
i10- Threat to harm the person or their family in case of refusal of sex	0.54	0.96	0.67	0.97
i11- Coercion to vaginal or anal sex	0.41	0.79	0.64	0.97
i12- Using weapons for sex	0.44	0.79	0.64	0.97
i13- Kissing the face	0.55	0.96	0.66	0.97
i14- Forced to take off clothes	0.45	0.82	0.59	0.97
i15- Use of holding to have sex	0.41	0.79	0.62	0.97
i16- Threat to withhold benefits in case of refusal of sex	0.52	0.94	0.67	0.97
i17- Threat of spreading rumors in case of refusal of sex	0.53	0.97	0.68	0.97
i18- The definition of fitness and beauty of face and clothes	0.59	1.02	0.67	0.97
i19- Touching or rubbing other organs	0.53	0.94	0.63	0.97
i20- Forced to show sexual organs	0.44	0.83	0.61	0.97
i21- Obtaining personal information via the internet	0.62	1.06	0.72	0.97
i22- Showing sexual gestures and signs	0.61	1.05	0.71	0.97
i23- Threat to harm the people close to the person in case of refusal of sex	0.51	0.93	0.68	0.97
i24- Sex without the personal consent	0.43	0.78	0.62	0.97
i25- Obtaining private pictures	0.55	0.96	0.66	0.97
i26- Showing sexual organs	0.65	1.06	0.63	0.97
i27- Telling sexual stories	0.64	1.01	0.64	0.97
i28- Offering money and benefits in exchange for sex	0.59	0.97	0.68	0.97
i29- Sexual abuse with the promise of marriage	0.64	1.06	0.68	0.97
i30- Abusing private images	0.65	1.09	0.65	0.97
i31- Sex demand for proof of love	0.56	0.99	0.67	0.97
i32- Threats to use force for sex	0.54	0.94	0.69	0.97
i33- Having sex with threats	0.4	0.79	0.59	0.97
i34- Leering	0.61	1.08	0.68	0.97
i35- Showing porn pictures	0.65	1.06	0.71	0.97
i36- Buying gifts in exchange for sex	0.61	1.02	0.67	0.97
i37- Touching or rubbing a private organ	0.64	1.02	0.58	0.97
i38- Ogling	0.68	1.11	0.66	0.97
i39- Proposition	0.53	0.93	0.66	0.97
i40- Using vulgar and nasty words in public and private places	0.56	0.98	0.65	0.97
i41- Insist on sex	0.68	1.13	0.70	0.97
i42- Removing clothes by threat	0.57	0.98	0.62	0.97
i43- Threatening to end the relationship in case of refusal of sex	0.53	0.93	0.64	0.97

dimensions, including sexual harassment, seduction, sexual bribery, sexual coercion, and sexual imposition.

The rape factor questions of the current study are consistent with the questions of the first factor of French's scale, the questions of the third factor of Reddy's scale, and the questions of the second and fifth factors of Raghvan's tool. These questions are also compatible with those in the first and third factors of Mathes scale and the third factor of Reddy's scale.

The deception factor questions of the current study are consistent with the questions of the first factor of French's scale, the questions of the first and second factors of Reddy's scale, and the questions of the second, fourth, and fifth factors of Raghavan's scale. These questions are also consistent with the questions of the third factor of Mathes scale, the first factor questions of He's scale, the first factor

questions of Reddy's scale, and the questions of the second and third factors of Fitzgerald's scale.

The nonverbal factor questions of the present study are in line with the first factor questions of Reddy's scale and the second factor questions of Fitzgerald's scale.

The cyber factor questions of the present study are consistent with the questions of the first factor of Reddy's scale and the first factor of Fitzgerald's scale.

The threat factor questions of the present study are consistent with the questions of the first and second factors of French's scale, the second factor questions of Reddy's scale, and the first, third, fourth, fifth, and sixth factor questions of Raghavan's scale. These questions are also consistent with the questions of the first, second, and third factors of He's scale, the third factor of Mathes scale, the second factor of Reddy's scale, and the third factor of Fitzgerald's scale.

The verbal factor questions of the present study are consistent with the questions of the first factor of French's scale, the first and second factors of Reddy's scale, the first factor of Mathes scale, and the first factor of Reddy's scale. These questions are also compatible with those in the first and second factors of Fitzgerald's scale.

The physical factor questions of the present study are consistent with the questions of the first factor of French's scale, the first and third factors of Reddy's scale, and the third factor of Mathes scale.

The scopophilia factor questions of the present study are consistent with the questions of the third factor of Reddy's scale and the second factor of Mathes scale.

Overall, according to the findings of this study, the SVE developed in this study is more comprehensive than other existing scales. The statistical population of this study included Iranian women. Iran is one of the ten countries with the highest gender gap and inequality. The greater the gender inequality in a country, the greater the prevalence of violence against women (16, 51).

However, in many studies, sexual violence is considered a dimension of violence (52-59). Accordingly, items of the factor of sexual violence in Azadarmaki and colleagues' study are consistent with items 9, 11, 12, 15, and 41 in the present study (60). Also, the items of the sexual violence factor in Yakubovich and colleagues' study are similar to items 13, 19, 4, 9, 15, and 41 in the present study (61). Finally, in the study by Nybergh et al, the items of the sexual violence factor are consistent with items 12, 9, 15, 39, and 41 of the present study (62).

The main strength of this study is the creation of an appropriate scale that covers many sexual behaviors, as this scale is derived from several authoritative tools of sexual violence. Also, this 43-item scale has a suitable response time for research.

Moreover, the scale developed in this study was an electronic tool, which makes it superior to printed form in the following aspects: cost-effectiveness, research time, increasing the respondents' anonymity, reducing the respondent's fear of cooperating with the research, and easy access.

Our scale was validated in one of the southern provinces of Iran with a more traditional culture than other provinces. So, the use of this scale in other parts of Iran should be done with caution. It is also suggested that this scale be re-validated before use in the northern provinces.

The scale also extracted sexual violence behaviors from studies in developed countries, and thus it may not show all types of sexual violence in Iranian women. Therefore, we propose to create another scale through conducting interviews with sexually abused women. Finally, the lack of a cutting point is the weakness of the present study. Hence, we suggest that the cutoff point of this scale be determined in another study.

Conclusions

Psychometric results showed that the 43-item SVE had good validity and reliability. So, it is suitable for use among the population of Iranian women aged 15-45 years. The scale of the present study is of practical importance and can be used in research, counseling offices, and other relevant institutions to identify female victims of violence. This scale can also estimate the more accurate prevalence of sexual violence in Iranian women. Furthermore, it can detect the sexual harassment of a close partner or a stranger.

Authors' Contribution

SHSA and AK: study design; SHSA: data collection and coordination, computer data inputs, and final article preparation; AK: assistance in writing and scale validation; MRMS: statistical analysis and consultancy.

Conflict of Interests

All authors declare that there is no conflict of interest.

Ethical Issues

This study was approved by the ethics committee of the Shahroud University of Medical Sciences, Iran (Code: IR.SHMU.REC.1397.109).

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