

# Married Women's Sexual Satisfaction Questionnaire; A Developmental and Psychometric Evaluation

Zahra Shahvari<sup>1,\*</sup>; Firoozeh Raisi<sup>2</sup>; Zohre Parsa Yekta<sup>3</sup>; Abbas Ebadi<sup>4</sup>; Anoshirvan Kazemnejad<sup>5</sup>

<sup>1</sup>Department of Reproductive Health, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, IR Iran

<sup>2</sup>Psychiatric and Clinical Psychology Research Center, Roozbeh Psychiatric Hospital, Tehran University of Medical Sciences (TUMS), Tehran, IR Iran

<sup>3</sup>Department of Medical Surgical, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, IR Iran

<sup>4</sup>Behavioral Sciences Research Center (BSRC), Faculty of Nursing, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

<sup>5</sup>Department of Biostatistics, Faculty of Medical Sciences, Tarbiyat Modares University, Tehran, IR Iran

\*Corresponding Author: Zahra Shahvari, Department of Reproductive Health, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, IR Iran. Tel: +98-9127650349, Fax: +98-2166904252, E-mail: shahvari@iaug.ac.ir

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**Background:** Despite the significant contribution of cultural factors to sexual satisfaction, most of the current sexual satisfaction scales pay little attention, if any, to cultural factors and marital status.

**Objectives:** The current study aimed to develop and validate the Iranian Married Women's Sexual Satisfaction Scale.

**Patients and Methods:** The current methodological study went through three consecutive phases. In the first phase, the concept of sexual satisfaction was defined and analyzed by the hybrid model approach. In the second phase, an item pool was generated by the findings of the first phase. Finally, the psychometric properties of the scale were evaluated in the third phase. All data analyses were performed by the SPSS version 19.0.

**Results:** A 78-item pool was generated based on the findings of the concept analysis phase. After assessing and confirming its face and content validity, 27 items remained in the final version of the scale. The exploratory factor analysis revealed a four-factor structure for the scale. The results of the known-groups comparison showed that females with lower educational status had significantly lower sexual satisfaction. Moreover, there was a significant correlation between the scores of the finalized scale and those of the ENRICH Marital Satisfaction Scale ( $r = 0.706$ ,  $P = 0.01$ ). The interclass correlation between the test and the retest measurements was also statistically significant ( $ICC = 0.939$ ,  $P \text{ value} = 0.001$ ).

**Conclusions:** The 27-item Iranian Married Women's Sexual Satisfaction Scale is a simple, valid, and reliable tool to assess married women's sexual satisfaction.

**Keywords:** Personal Satisfaction; Couples Therapy; Questionnaires; Self-Report

## 1. Background

Seeking a healthy, joyful, and satisfactory sexual life is among the fundamental rights of all humans (1). Sexual satisfaction (SS) is an essential prerequisite to a happy and committed relationship. It is significantly correlated with physical and mental health (2), satisfaction with relationship and marriage (3), general well-being, and quality of life (4). SS is considered as a barometer for the quality of a relationship (5). A pleasant and satisfactory sexual relationship has positive effect on subsequent sexual experiences (6) and strengthens the relationship. Perceived SS affects and is affected by all aspects of life (7). According to Parish et al. (8), the five factors of sexual conduct, social and emotional aspects of the relationship, sexual attitudes and values, physical health, and environmental obstacles can affect SS. Moreover, the frequency of sexual activities, the diversity of sexual behaviors, as well as sexual desire are reported to affect SS (9, 10). Sexual relationship is not a mere biological process; rather, it

is experienced in a mixed intrapersonal, interpersonal, and cultural context (11). However, despite the significant contribution of cultural factors to SS (12), SS scales mostly assess physiological aspects of sexual relationship and pay little attention, if any, to cultural factors and marital status. Moreover, these scales are widely used in different communities and cultures worldwide without considering and evaluating their cross-cultural appropriateness and adaptation. Several scales have been developed so far in Iran to assess individuals' sexual functions (13, 14). However, there was no valid and reliable scale to assess SS. Currently, there is no standardized scale to evaluate married women's SS in the context of the Iranian culture. Most of the scales used in Iran are originally developed in other countries and have not been cross-culturally adapted to be used in the Iranian culture. Accordingly, the items of these scales are either confusing or improper to evaluate Iranian women's SS.

## 2. Objectives

The current study aimed to develop and validate the Married Women's SS questionnaires (MWSSQ).

## 3. Materials and Methods

The current methodological study aimed to develop and validate the MWSSQ. A methodological study essentially includes the following steps: defining the concepts, formulating the questionnaire's items, developing questionnaire for users, and testing the questionnaire's reliability and validity (15). The current study was conducted in three subsequent phases as follows.

### 3.1. First Phase

The concept of married women's SS was defined by using the three-step hybrid model approach (16). In the first theoretical step, a comprehensive literature review was performed on documents published from 1975 to 2014. This step yielded to a clear and comprehensive definition of the concept based on the existing literature. The second step, i.e. the field work step, was taken concurrently with the theoretical one. The first step aimed to refine the definition of the concept by empirical data. Accordingly, a purposeful sample of twenty 19 - 76 year-old married women was selected. Participants ranged in length of time married from one to 47 years. In this step, in-depth semi-structured personal interviews were conducted to explore the participants' experiences of SS. Data collection was performed from 2103 to 2014 and was continued until reaching data saturation. Each participant was interviewed for one to three times. The length of the interviews varied from 45 to 90 minutes. Interviews were tape-recorded, transcribed verbatim, and analyzed by the qualitative content analysis approach. In the third step, the findings of the two previous steps were combined to redefine and provide a final definition of the concept of married women's of SS (16).

### 3.2. Second Phase

Based on the results of the first phase, two physical and emotional domains were considered for the MWSSQ. Accordingly, an item pool was generated for the scale by the domains and the sub-domains of the SS concept. The items were generated both deductively (i.e. from the existing literature) and inductively (from the empirical data).

### 3.3. Third Phase

In this phase, the psychometric properties of the MWSSQ, such as its face, content, and construct validity as well as reliability, were evaluated. The process of evaluating the psychometric properties of the MWSSQ is explained as follows:

A) Face validity: the face validity of the MWSSQ was eval-

uated both qualitatively and quantitatively. Qualitative face validity evaluation was performed by conducting face-to-face interviews with ten married women. The women were asked to read each item loudly and explain their understanding of it. Moreover, they were asked to comment on the difficulty, relevancy, and ambiguity of the items. Items were edited and reworded based on their comments. Then, the quantitative item impact method was used to identify the importance of each item. Impact scores of 1.5 or higher showed that the intended item was appropriate (17, 18). Moreover, item clarity and comprehensibility were improved by striving to editing and rewording. Finally, the items were edited by an experienced professional editor.

B) Content validity: fourteen experts in the areas of instrument development, reproductive health, psychiatry, psychology, urology, gynecology, and sexual disorders were invited to qualitatively and quantitatively assess the content validity of the MWSSQ. For qualitative content validity assessment, the experts were asked to assess the grammar, wording, item allocation, and scaling of the scale. On the other hand, quantitative content validity assessment was done by calculating the Content Validity Ratio (CVR) and the Content Validity Index (CVI) for each item. CVR of each item was calculated by asking the fourteen experts to score the items by using a three-point scale: "essential", "useful but not essential", and "not essential". According to Lawshe (19), when the number of experts is fourteen, items with a CVR value of 0.51 or higher are considered appropriate. Afterwards, the CVI of each item was determined by using the Waltz and Bussel's criteria (20). Accordingly, the experts were invited to rate the relevancy of the items on a four-point Likert-type scale (not relevant: 1; quite relevant: 2; relevant: 3; and completely relevant: 4). The CVI of each item was then calculated through dividing the number of experts who had considered the item as either relevant or completely relevant by their total number (21). Items with a CVI of less than 0.79 (22) were removed from the scale. Finally, the mean CVI of all the items were used to calculate the scale-level CVI/Averaging Calculation Method (S-CVI/Ave). Polit and Beck (21) recommended that S-CVI/Ave of 0.9 or greater reflect excellent content validity.

C) Construct validity: three methods, including exploratory factor analysis, known-groups comparison, and convergent validity assessment, were employed to establish the construct validity of the MWSSQ. Factor analysis assesses the interrelationships between the items and categorizes the inter-related items (23, 24). The minimum sample size for factor analysis is equal to the number of items multiplied by ten (25). Study subjects were recruited by the simple random sampling method. Primarily, a comprehensive list of all public places located in Tehran, Iran, was created and then, ten places were randomly selected from the list. Thereafter, a random sample of 300 women was drawn from these ten places and they were asked to fill out the MWSSQ. Fourteen scales had been

filled out incompletely and hence were discarded. Finally, 286 completely-filled scales were included in the final analysis. The inclusion criteria were being married, having no known disability or mental disorder, and living with husband. Not to fill out the questionnaire completely was the exclusion criteria. Fourteen women were excluded. Questionnaires were filled out on a self-report basis. Researcher transferred the information into SPSS file. Missing values were substituted by the digit three, which was the median of the Likert scale. The principal component factor analysis with equamax rotation was performed. The Bartlett's test of sphericity, the Kaiser-Meyer-Olkin (KMO) test, as well as the scree plot and eigenvalues were used to respectively determine the appropriateness of the factor analysis model, the sampling adequacy, and the number of factors. The minimum factor load of 0.3 was employed to maintain the items in the extracted factors. After conducting factor analysis, the congruence between the extracted main factors and the main domains of the SS concept were also evaluated. The known-groups comparison was also used to establish construct validity (23, 24). This technique helps identify the ability of the intended scale to discriminate the contrasting groups (26). The known groups in the current study were groups of married women with different educational status. SS was measured in three groups using MWSSQ. Then SS scores were compared by a one-way analysis of variance (one way ANOVA) test. Finally, the Persian version of the ENRICH Marital Satisfaction Scale (EMSS) was employed to evaluate the convergent validity of the MWSSQ. Accordingly, 77 married women were invited to complete both EMSS and MWSSQ. The Spearman-Brown test was used to calculate the correlation between the scores of the two scales.

D) Reliability assessment: the reliability of the MWSSQ was evaluated by the internal consistency and the stability assessment techniques. The result of internal consistency assessment is reported as Cronbach's alpha. A Cronbach's alpha of 0.7 - 0.8 reflects a satisfactory internal consistency (27). Moreover, an item was added at the end of the MWSSQ which asked the participants to rate their general satisfaction in having sexual relationship with their husband on a scale of zero to twenty. The correlation of the score of this item with the total score of the MWSSQ was also calculated to establish the internal consistency. Stability assessment was performed by test-retest technique. The time interval between the test and the retest measurements should be long enough that subjects forget the items and so short that the intended phenomenon does not change (28). Burns and Grove (29) recommend a two-week interval for test-retest stability assessment. The current study participants completed the MWSSQ twice with a two-week interval in between. The correlation between the test and the retest scores was evaluated by the Interclass Correlation Coefficient (ICC). ICCs of 0.8 or higher denote satisfactory stability (30).

### 3.3.1 Statistical Analysis

The data were tested for normal distribution by Kolmogorov-Smirnov test. Descriptive statistical tests, exploratory factor analysis, one-way analysis of variance (one way ANOVA) test, Interclass Correlation Coefficient (ICC), Cronbach's alpha and Spearman-Brown test were executed to analyze data. All data analyses were performed by SPSS version 19.0.

### 3.4. Ethical Considerations

The study was approved by the Ethical Committee of the Research Council of Tehran University of Medical Sciences (Number: 9021151004-1), Tehran, Iran. Study participants were personally informed regarding the aims and the importance of the study. Participants signed informed consent letters. They were assured regarding the anonymity and confidentiality of their information, and that they were free to either participate in or withdraw from the study. No time limit was imposed to complete the questionnaires. It took approximately 15 minutes to complete the questionnaire.

## 4. Results

### 4.1. First Phase

In the first phase of the study, the concept of SS was defined by the hybrid model as the pleasure over establishing and maintaining sexual relationship with husband for either fulfilling one's own and/or husband's sexual needs or achieving higher aims in/of life. Such pleasure over fulfilling sexual roles as well as mutual interactions is the core concept of SS. According to this definition, SS is a unique, two-dimensional, individual, and subjective concept which is affected by woman's own expectations of her marital/sexual life as well as the values of marital life. The antecedents of SS include being interested in one's husband, having emotional intimacy, sexual compatibility, satisfactory performance of marital roles, and feeling sexually potent. The main consequences of SS include continuation of marital/sexual relationship with husband, feeling of emotional serenity, and coping effectively with the difficulties of life.

### 4.2. Second Phase

In this phase, the findings of the first phase were used to generate an item pool for the MWSSQ. The primary item pool consisted of 78 items in the two physical and emotional domains of SS and several sub-domains. The item pool was assessed and negotiated by the research team in three sessions. Overlapping or repetitive items were either deleted or combined. The research team strived to choose the clearest and most relevant items. The final item pool included 32 items. These 32 items were arranged in a questionnaire format.

### 4.3. Third Phase

A) Face validity: two items had an impact score of less than 1.5 and hence were deleted. Moreover, the panel of experts recommended the combination of two items and added one more item to the scale. Moreover, they recommended many revisions to the face of the items which were revised accordingly.

B) Content validity: one item was removed from the scale because of a low CVR of 0.42. In addition, two more items were deleted due to an item-level CVI (I-CVI) of less than 0.7. Two items with an I-CVI of 0.75 - 0.79 were revised. The revised items acquired an I-CVI of 0.833 and 0.916. The scale-level CVI (S-CVI) of the whole MWSSQ was 0.938. Finally, 27 items remained in the final version of the scale. The items of the MWSSQ were scored on a five-point Likert-type scale on which one stands for "never" and five stands for "always". Items 3 - 6, 9, 10, 14, 19, 21, 23, 24, and 27 were scored reversely, i.e. "never" and "always" were scored five and one, respectively. Accordingly, the total score of the MWSSQ ranges from 27 to 135; while higher scores show greater SS.

C) Construct validity: the principal component exploratory factor analysis was done on the 27-item MWSSQ. The KMO test result was 0.897, which indicated sampling adequacy. Moreover, the Bartlett's test revealed significant interrelationship between the items ( $P$  value = 0.000), denoting the appropriateness of the factor analysis model. Factors with an eigenvalue of greater than one were extracted. The scree plot showed a four-factor structure for the scale. The suppressed point of 0.3 was considered as the minimum factor load to keep the items in the extracted factors. The extracted factors explained 51.7% of the total variance. After equamax rotation, factors one to four explained 16.664%, 13.134%, 12.571%, and 9.360% of the variance, respectively. Items were allocated to the factors which had the greatest factor load. However, items 14 and 8, which had been respectively loaded on factors four and three were respectively allocated to factors three and four because of the congruence between the contents of these two items and the content of the allocated factors. The four factors of the MWSSQ were "antecedents of SS" (eight items), "physical and mental barriers to SS" (nine items), "dominant cultural values" (five items), and "husband-related factors" (five items). After extracting the factor structure of the MWSSQ, the congruence of the factors with the domains and the sub-domains of the SS concept were re-evaluated. Tables 1 and 2 respectively show participants' characteristics and the four-factor structure of the MWSSQ. To evaluate the discriminating power of the MWSSQ, the scale was applied to three known groups of married women with different educational status. According to Fahs and Swank (31), women with lower educational status have lower SS. The current study participants were categorized into three groups: illiterate or primary education, secondary

education, and tertiary education. The one-way ANOVA test revealed a significant difference among these three groups regarding SS ( $P$  value = 0.013). The results of the Tukey's post-hoc test showed that subjects in the illiterate or primary education group were significantly less satisfied with their sexual relationships compared with those of the other two groups. The Spearman-Brown correlation coefficient between the scores of the EMSS and the MWSSQ was 0.706 ( $P$  value = 0.01), confirming the convergent validity of the MWSSQ. D) Reliability assessment: the Cronbach's alpha for the 27-item MWSSQ was 0.916 (Table 3). Moreover, the Spearman-Brown correlation coefficient between the total score of the MWSSQ and that of the general SS item was 0.802 ( $P$  value = 0.01), confirming the internal consistency of the scale. Finally, the ICC between the test and retest measurements was 0.939 ( $P$  value = 0.001). These findings demonstrated the high reliability of the MWSSQ.

**Table 1.** Study Participants' Characteristics<sup>a</sup>

Variables	Frequency
<b>Women Age, y</b>	37.71 ± 9.45
<b>Husbands Age, y</b>	42.43 ± 10.62
<b>Marriage Lengths, y</b>	15.12 ± 10.35
<b>Sexual Satisfaction Score</b>	104.05 ± 18.31
<b>Education (n = 286)</b>	
None or Primary	17 (5.9)
High school and diploma	68 (23.8)
Graduate	201 (70.3)
<b>Occupational status (n = 286)</b>	
House wife	173 (60.5)
Self employed	23 (8)
Employed	90 (31.5)
<b>Economic status (n = 286)</b>	
Adequate	224 (78.3)
Not adequate	62 (21.7)
<b>Number of children (n = 286)</b>	
0	61 (21.3)
1	106 (37.1)
2 - 3	99 (34.6)
> 3	20 (7)

<sup>a</sup> Data are presented as Mean ± SD or No. (%).

**Table 2.** The four-factor structure of the MWSSQ<sup>a</sup>

Items	Component			
	Factor 1	Factor 2	Factor 3	Factor 4
I like whatever I do to please my husband in a sexual relationship	0.710		0.318	
I become adequately aroused and wet, by my husband's appropriate stimulations, while having sex	0.668		0.343	
I openly talk with my husband about my sexual needs and expectations	0.642			
I am satisfied with whatever my husband does (including caressing, kissing, and stimulating) before having intercourse	0.625		0.384	
I am satisfied with what my husband does after intercourse	0.619		0.369	
Having sex with my husband completely fulfills my needs	0.605		0.388	
I am satisfied with the number of times we have sex	0.599		0.314	0.314
By the time my husband ejaculates, I experience adequate pleasure	0.587		0.306	
Having sex with my husband has turned into a monotony for me	0.499	0.464		
Physical pain and discomfort prevent me from feeling pleased while having sex	0.441	0.347	-0.390	
My husband does not have a good sense of timing when asking to have sex		0.764		
I am worried about our sexual relationship being noticed or witnessed by someone		0.762		
I engage in sex with my husband only out of imposition and compulsion	0.353	0.622		
Remembering the insults and lack of attention I receive from my husband during the day prevents me from feeling pleased in the sexual relationship		0.581		0.337
As I don't love my husband, I don't enjoy having sex with him		0.554	0.445	
Difficulties and hardships of life prevent me from feeling pleased in sexual relationship		0.550		
It matters to my husband that I feel pleased in our sexual relationship			0.670	
Having sex is an appropriate means for me to show my affection to my husband			0.636	
It matters to me that my husband feels pleased in our sexual relationship	0.377		0.573	
My husband admires me and aptly shows his affection	0.345		0.541	0.425
Sexual relationship has promoted our emotional intimacy and elongated our married life	0.330		0.490	0.359
I have a warm and intimate relationship with my husband		0.337	0.478	0.365
My husband avoids starting our sex and hence, I am obliged to start it				0.707
I am satisfied with my husband's tidiness and cleanliness				0.554
My husband's sexual impotency (erectile dysfunction) irritates me				0.490
I am afraid of the day my husband sexually betrays me				0.487
Failing to achieve an orgasm during the sex badly irritates me		0.315		0.464
Eigenvalue	8.964	2.224	1.557	1.230
Explained variance (%)	16.664	13.134	12.571	9.390
Cumulative variance (%)	16.664	29.798	42.369	51.759

<sup>a</sup> Factor 1, antecedents; Factor 2, physical and mental barriers; Factor 3, dominant cultural values; Factor 4, husband-related factors.

**Table 3.** The Cronbach's Alpha Values for the MWSSQ and Its Domains

Factors	Subscales	Number of Items	Internal Consistency
1	antecedents	13 - 15 - 16 - 17 - 18 - 20 - 25 - 26	$\alpha = 0.898$
2	physical and mental barriers	3 - 4 - 5 - 9 - 10 - 14 - 21 - 23 - 27	$\alpha = 0.808$
3	dominant cultural values	1 - 2 - 7 - 11 - 12	$\alpha = 0.770$
4	husband-related factors	6 - 8 - 9 - 22 - 24	$\alpha = 0.571$
	MWSSQ	27	$\alpha = 0.916$

## 5. Discussion

The current study was conducted to develop and validate MWSSQ. The final version of the MWSSQ had 27 items in four domains including antecedents of SS, physical and mental barriers to SS, dominant cultural values, and husband-related factors. The study findings revealed that the MWSSQ had acceptable reliability and validity. The MWSSQ was developed by conducting a hybrid model concept analysis. Accordingly, it can predict whether the antecedents of SS are experienced by a woman or not (32). The first domain of the MWSSQ was related to the antecedents of SS and had eight items. Authors strived to include the most important antecedents of SS in the scale. In the Index of Sexual Satisfaction (ISS), nineteen items deal with the quality of sexual relationship (33). The eight items of the SS antecedent domain of the MWSSQ are comparable with the nineteen items of the quality of sexual relationship domain of the ISS. Accordingly, it seems that these eight items can provide a reasonable estimate of the quality of sexual relationship. The second domain of the MWSSQ has nine items concerning the barriers to feeling SS. Moreover, this domain indirectly pertains to the quality of sexual relationship. This domain could help healthcare professionals determine and remove the causes to sexual dissatisfaction. The ISS also has six items concerning the negative and positive consequences of sexual relationship (33). The Pinney Sexual Satisfaction Inventory (PSSI) also has two domains including general SS and satisfaction with sex partner which respectively assess SS and factors contributing to sexual dissatisfaction (34). The third domain of the MWSSQ related to "the dominant cultural values" includes five items. It pertains to gaining and maintaining SS, the presence of an intimate relationship between couples, and the cultural values dominating a sexual relationship. The last five items are referred to husband-related factors" and indicate husband's lack of satisfactory sexual role playing. Previous studies reported that in response to the question "Which characteristics increases your sexual pleasure?", 91.9% mentioned kindness, affection, good temper, and being cared for; 4.3%, 1.7%, and 1.7% mentioned husband's hotness, cleanliness, and foreplay as the major points, respectively. In response to "Which characteristics decreases your sexual pleasure?" 66.6% of participants mentioned being upset by husband, 22.1% mentioned bad smell of sweat or smoke, 7% named husband's low sexual desire, 3.5% named fatigue, and 1.7% named significant age disparity (35). Almost all of these items were considered by researchers in MWSSQ.

Currently, almost all the SS scales contain items on the three domains of antecedents of and barriers to SS as well as husband-related factors (7, 33, 34, 36, 37). However, despite the significant contribution of cultural values to SS (38), none of the previous SS scales contained item(s) on this domain. Probably, cultural values did not contribute to SS in the settings in which previous SS scales were de-

veloped. In line with the current study findings, Lee et al. (39) also reported that cultural values affect SS. Given the existence of some degrees of similarities among eastern cultures, it seems necessary to incorporate items about cultural values into SS scales. On the other hand, although previous SS scales were also validated by factor analysis (7, 33, 34, 36, 37), their factors were somewhat different from those of the MWSSQ. This conflict can be attributed to the differences in the theoretical frameworks underpinning the scales. The results of the current study concept analysis revealed that SS had two main physical and emotional domains. However, the factor analysis yielded to a four-factor structure for the MWSSQ. Nonetheless, these four factors were related to both physical and emotional domains of the SS concept. The congruence between the two main domains of the SS concept and the four-factor structure of the MWSSQ confirms the construct validity of the scale. In addition to factor analysis, the study also used the known-groups comparison technique to assess the construct validity of the MWSSQ. The results of this technique revealed that women with lower education had lower SS. Given the real difference in SS among women with different levels of education (31), the known-group comparison confirms an acceptable construct validity for the MWSSQ. Moreover, the significant correlation between the scores of the EMSS and the MWSSQ also confirms the divergent and the construct validity of the MWSSQ (40). The current study findings also revealed a high Cronbach's alpha for the MWSSQ, which confirms the great internal consistency and acceptable reliability of the scale. There was also a significant correlation between the total score of the MWSSQ and the score of general SS item. In addition to being a further evidence for the acceptable internal consistency of the MWSSQ, this finding also implies that the items of this scale can accurately reflect women's feelings towards their sexual relationship. The test-retest technique (with a two-week time interval in between) was also used to assess the stability of the scale. The results of this method also showed a high ICC between the scores of the test and the retest measurements, confirming the stability and reliability of the MWSSQ. Like the PSSI and the ISS, the MWSSQ also exclusively assesses women's SS. Given the significant differences between men and women's attitudes towards sexual relationship and SS (9), developing and using gender-specific SS scales seem crucial. The MWSSQ is a short (27 items) and user-friendly questionnaire, which has almost as many items as the PSSI (24 items) and ISS (25 items) do. This scale can be responded to by literate women in about only ten minutes. Given its great simplicity and acceptable validity and reliability, the MWSSQ can be used to evaluate women's SS in different clinical settings such as sexual disorders clinics, healthcare and rehabilitation centers, and physicians' private offices as well as in research projects. The inclusion of reversely-scored items in the MWSSQ minimizes some kinds of response biases and increases the probability of acquiring more accurate

responses (33, 41). The greatest strength of this study was the development of a context-bound SS scale to assess Iranian married women's SS. The study did not aim to conduct confirmatory factor analysis and determine the cutoff point(s) of the scale. Consequently, further studies are needed to confirm the study findings.

**Conclusion:** the current study introduced the MWSSQ as a short self-report scale to assess Iranian married women's SS as well as the factors contributing to their SS. This scale was developed based on the contextual definition of the SS concept. The MWSSQ is a simple, valid, reliable, and context-based scale, which can be used in different situations and for different purposes. This scale can be used in the Iranian context as well as other cultures in which conventional lifelong marriage and committed marital relationship are greatly valued. **Study limitations:** authors clearly acknowledge that the development, validation, and evolution of a new scale are lengthy and ongoing processes. Therefore, many other efforts are still needed to evolve and refine the scale. Authors hope to overcome the potential shortcomings of the scale in future researches. Moreover, as a self-report scale, the MWSSQ also suffers from the limitations of self-report scales (42).

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## Authors' Contributions

**Study concept and design:** Zahra Shahvari; **data acquisition:** Zahra Shahvari; **data analysis and interpretation:** Zohre Parsa Yekta, Firooze Raeisi, Abbas Ebady, Anoshirvan Kazem Nejad; **Manuscript drafting:** Zahra Shahvari; **critical revision of the manuscript for important intellectual content:** Firooze Raeisi, Abbas Ebady, Anoshirvan Kazemnejad; **study supervision:** Zohreh Parsa yekta, Firoozeh Raisi.

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