

ORIGINAL STUDY

Translation, cross-cultural adaptation, and validation of the Persian version of the Attitude Towards Menopause scale

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Abstract

Objectives: This study describes translation, cross-cultural adaptation, and validation of the Attitude Towards Menopause (ATM) scale in Persian.

Methods: A standard process was followed for translation and cross-cultural adaptation of the ATM scale into Persian. The content validity index and content validity ratio were used to measure content validity. The construct validity was tested using exploratory factor analysis and confirmatory factor analysis. The average variance extracted and construct reliability were used to indicate convergent and discriminant validity, respectively. Internal consistency and test-retest reliability of the Persian ATM scale were assessed using Cronbach α and intraclass correlation coefficient (ICC).

Results: A revised version of the ATM scale, including 26 items assigned to seven factors, was obtained in exploratory factor analysis. The factors were interpreted as negative affect, postmenopausal recovery, control of symptoms, sexuality, psychological losses, unpleasant confrontation, and menstrual freedom, explaining 66.18% of the total variance. The factor structure of the scale was confirmed using confirmatory factor analysis (Comparative Fit Index = 0.90, Tucker-Lewis Index = 0.88, Goodness-of-Fit Index = 0.90, Adjusted Goodness-of-Fit Index = 0.86, Root Mean Square Error of Approximation = 0.07, $\chi^2/df = 4.56$). The values of Cronbach α coefficient and ICC indicated an acceptable level of reliability ($\alpha = 0.70$, ICC = 0.89). The construct reliability for all factors was more than or equal to 0.7 except for psychological losses, indicating good discriminating validity. The values of average variances extracted for subscales varied from 0.48 to 0.99, representing adequate convergent validity.

Conclusions: The Persian version of the ATM scale is a reliable and valid tool to evaluate the attitudes of Iranian women toward menopause.

Key Words: Attitude – Cross-cultural – Iran – Menopause – Translations – Validation study.

Because of the global trend of population aging and the resultant increase in the population of menopausal women, the psychological and physical health of women during menopausal transition have become a health priority.^{1,2} According to the World Health Organization, the total number of postmenopausal women will reach 1.2 billion by 2030, accounting for

24% and 76% of the total population in developed and developing countries, respectively.³ We are witnessing significant demographic and epidemiological changes in Iran, as in many other developing countries. The United Nations estimated that the percentage of older people 60 years or older in Iran, which was 8.2 in 2015, will reach 31.2% by 2050.⁴

Received March 21, 2023; revised and accepted May 15, 2023.

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Funding/support: This work was supported by the Research Council of Gonabad University of Medical Sciences. The funder of the study had no role in study design, data collection, data analysis, data interpretation, or the writing of the manuscript.

Financial disclosure/conflicts of interest: M.S.H. receives funding from Turning Point UK Charity for consultation on menopause solutions and book royalties from Routledge. The other authors have nothing to disclose.

Author Contributions: All the authors contribute to the design of the study. N.B. and M.S. carried out the data collection. M.S.H. contributed to the data analysis. F.M. carried out the data analyses and wrote the initial draft of the manuscript. All authors revised the manuscript critically and approved the final version.

Ethical approval: This study was approved by the Ethical Committee of Gonabad University of Medical Sciences, and all participating respondents provided written informed consent.

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Menopause is a multidimensional process and a biological-psychological-social phenomenon.⁵ During menopausal transition, women experience several physiological symptoms, which may be influenced by a range of psychological, social, and cultural factors.⁶ The meanings and perceptions of the menopause process can vary among women because they experience menopause in different social contexts.^{7,8} Cultural attitudes toward menopause determine how women interpret menopause for themselves and also determine how women interpret the effect of menopause on their lives.⁹ The personal attitudes toward menopause, which are influenced by society, may also affect women's lifestyle during menopause.¹⁰ Furthermore, attitude toward menopause is among the possible factors that might explain the variation in women's experience of menopause symptoms.^{11,12} Based on the evidence presented in some studies, women's attitude toward menopause is associated with the severity of menopause symptoms; that is, a negative attitude is associated with more severe symptoms.¹³⁻¹⁵ Furthermore, several studies have shown that women's attitude toward menopause influences their lifestyle and may explain their experiences of menopause.¹⁶⁻¹⁹

To the best of our knowledge, there are at least two standard questionnaires to measure the attitude of women toward menopause. These questionnaires include the "Attitudes Towards Menopause (ATM)" and the "Menopause Attitude Scale".^{10,20} Nevertheless, the critical evaluation of the published studies on the attitude of Iranian women toward menopause has shown that only 2 of 19 studies have used standard questionnaires to assess the women's attitude toward menopause, whereas other studies used researcher-made tools.²¹ Furthermore, the validity and reliability of the questionnaires were not reported in 40% of the articles.²¹

Considering the importance of assessing women's attitude toward menopause for the design and development of evidence-based care programs for this population, and the lack of a standardized tool in this field in Iran, the present study was conducted to translate and evaluate the psychometric properties of a culturally appropriate Persian version of the ATM questionnaire.

METHODS

Study design and setting

This cross-sectional study was carried out at Mashhad city and Gonabad city in northeastern Iran from June 2020 to November 2021.

Instruments

The baseline questionnaire: ATM scale

The ATM scale was developed and standardized for the first time by Neugarten et al²⁰ for evaluating attitudes concerning menopause. The questionnaire contains 35 items and seven factors, including the following: "negative affects" (6 items), "post-menopausal recovery" (9 items), "extent of continuity" (3 items), "control of symptoms" (3 items), "psychological losses" (5 items), "unpredictability" (2 items), and "sexual activity" (2 items). Five items also were considered as ungrouped items. Each item was scored on a 4-point Likert scale (1 = agree strongly, 2 = agree to some extent, 3 = disagree somewhat, and 4 = disagree strongly). The total score varied between 35 and 140. The high scores indicate positive attitudes.

Sociodemographic questionnaire

The sociodemographic questionnaire contained several questions about age, husband's age, education, husband's education, marriage age, menarche age, number of children, occupation, husband's occupation, the first marriage, another wife for the husband, menstrual status, relationship with the husband, and history of diseases (ie, diabetes, hypertension, blood lipids, etc), depression, and other mental disorders.

Translation and cross-cultural validation

To create an appropriate version of the scale in the Persian setting, the guidelines for the process of cross-cultural adaptation, as the foundation for the cross-cultural adaptation process, accompanied by content validity analysis, were used. The steps of the algorithm were followed after obtaining permission to use the scale:

- 1) Forward translation: Two independent translators, fluent in both Persian and English, translated the original ATM scale from English into Persian.
- 2) Synthesis: The translations were reviewed as agreed upon by both translators. Then, some changes were made to the wording and phrasing of the translation upon the agreement of both translators.
- 3) Back-translation: The Persian version was translated into English by bilingual translators who had not read the original English version; their translations lacked metaphors, idioms, and hypothetical statements.
- 4) Back-translation synthesis: After comparing the ATM's original and back-translated versions, an expert committee consisting of nurses, midwives, and specialists in reproductive health and public health reached an agreement by consensus on a final Persian translation of the ATM.
- 5) Content validity and cultural adaptation: The content validity ratio (CVR) and content validity index (CVI) were computed to evaluate the quantitative content validity for each item (I-CVI) and scale (S-CVI). With 22 experts on the panel, a CVR greater than 0.45 was considered acceptable according to Lawshe's guideline.²² The items with a CVI ≥ 0.79 were thought relevant. Those with $0.70 < CVI < 0.79$ needed revision, and those with CVI < 0.70 or less were rejected.²³ The S-CVI was calculated by averaging the CVI of the items. A minimum value of 0.8 for the average scale-level content validity index (S-CVI/Ave) was regarded to demonstrate an acceptable content validity.^{24,25} The experts on the committee also evaluated the scale's content to see if the items were comprehensive and adequately represented the culture of Iranian women.²⁶
- 6) Pilot study: The updated ATM scale from the content validity analysis was used in a pilot study on a sample of 30 volunteers to assess the clarity and comprehensibility of the items for the respondents and identify alternatives to the wording of the items.

Psychometric properties of the questionnaire

Psychometric properties of the ATM scale included acceptability, reliability, and validity. All statistical analyses were carried out using STATA 12.0, IBM Statistics SPSS 21.0, and AMOS 21.0.

Participants and sampling

A sample of 1,314 Iranian women completed the ATM scale's latest version to evaluate the questionnaire's psychometric properties. Using a convenience sampling strategy, the women were chosen from comprehensive health service centers in Mashhad and Gonabad by the health centers liaisons. If they satisfied the inclusion criteria, they were included in the study. The inclusion criteria were as follows: (1) living in Gonabad or Mashhad, (2) being between the ages of 45 and 60 years, (3) understanding and speaking in Persian, (4) ability to communicate verbally and answer questions, (5) willingness to participate in the study and interview, and (6) lack of a history of significant mental disorders (psychosis) and hospitalization in psychiatric units. Unwillingness to continue participation and incomplete completion of the questionnaire were considered the exclusion criterion.

Sample size considerations

The final Persian version of ATM consisted of 33 items. A minimum sample size of 100 to 250, or 2 to 20 people for each item, is recommended for exploratory factor analysis (EFA).²⁷ For confirmatory factor analysis (CFA), 150 to 1,000 people are recommended.⁵ In the present study, the total sample size was 1,314 women, of which 513 and 801 were randomly assigned to two independent samples for EFA and CFA, respectively (a 40:60 ratio). Therefore, the sample size was sufficient for both EFA and CFA.

Data analysis

Participants' characteristics

Descriptive statistics were used to report the participants' characteristics. For quantitative variables, mean and standard deviation were used, and frequency and percentage were used for qualitative variables.

Construct validity

The construct validity was assessed using EFA and CFA. In the present study, the total sample size was 1,314 women who were randomly split into two independent samples with a 40:60 ratio. Therefore, EFA and CFA were performed on the samples of 513 and 801 Iranian women, respectively. The multivariate normality assumption was checked using the skewness and kurtosis values and the χ^2 versus Mahalanobis distance plot. The graph's positioning of dots on a straight line and the values of skewness and kurtosis between -2 and $+2$ were considered as no violation of the normality assumption.²⁸ Variance Inflation Factor was also used to evaluate the presence of multicollinearity. A value of Variance Inflation Factor <10 was regarded as the absence of serious multicollinearity.²⁹ The Kaiser-Meyer-Olkin (KMO) index and sphericity Bartlett test were used to evaluate the data adequacy for EFA. KMO value greater than 0.70 and rejection of sphericity test considered the appropriateness of data for EFA.⁸ The factors were extracted using the Varimax rotation and principal component factor method. The appropriateness of the number of factors was evaluated using eigenvalues higher than 1. Items with a factor loading of more than 0.5 and at least a 0.2 difference between their factor loading and other factors' loadings were maintained.⁹ Based on the factors drawn from the EFA model, CFA was performed based on the maximum likelihood estimation. χ^2/df ,

Goodness-of-Fit Index, Adjusted Goodness-of-Fit Index, Comparative Fit Index (CFI), Tucker-Lewis Index, Root Mean Square Error of Approximation (RMSEA), and Normed Fit Index (NFI) were used to evaluate the model fit.

Convergent and discriminant validity

After assessing the model's fit, the average variance extracted (AVE) and construct reliability (CR) were used to examine discriminant and convergent validity, respectively. Acceptable values for CR are greater than 0.70.¹⁰ When the CR index is more than 0.60 for AVE, 0.4 is acceptable; otherwise, AVE's value might be higher than 0.5.¹⁰

Reliability

Internal consistency based on using Cronbach α coefficient and a test-retest procedure with a 1-week gap based on the intraclass correlation coefficient (ICC) were used to evaluate the reliability of the Persian ATM scale on a sample of 30 volunteer women. Using Cronbach α , a value between 0.6 and 0.7 was regarded as acceptable reliability, and a value of 0.8 or higher was considered high reliability.¹³ In the case of a low Cronbach α value and the number of the scale's items less than 10, the mean interitem correlation with a range of 0.2 to 0.4 suggests adequate reliability.¹² According to ICC, the values between 0.5 and 0.75 were considered good, and more than 0.75 was deemed high reliability.¹¹

Ethical consideration

The Ethics Committee of Gonabad University of Medical Sciences in Gonabad, Iran, approved the study's protocol (IR.GMU.REC.1399.012). The questionnaires included no names or information that might be used to identify individuals. At the start of the interview, informed consent was obtained from the participants.

RESULTS

Translation and cross-cultural validation

After translating the questionnaire and in the phase of content validity, we removed six items because their CVR values were out of the acceptable range. These items included item 2 ("It's not surprising that most women get disagreeable during menopause."), item 3 ("Women should expect some trouble during menopause."), item 16 ("A woman's body may change in menopause, but otherwise she doesn't change much."), item 19 ("Women who have trouble with menopause are usually those who have nothing to do with their time."), item 27 ("A woman in menopause is apt to do crazy things she does not understand."), and item 28 ("Menopause is a mysterious thing which most women don't understand."). Three items had CVI values between 0.70 and 0.79 that were reconsidered and revised (Table 2).

Other items met the minimum acceptable Lawshe's CVR, and CVI values for relevance, clarity, and simplicity. The average CVIs (S-CVI) for the whole items based on the average CVI (S-CVI/Ave) approaches was 0.91. In the process of evaluating the comprehensiveness and adequateness of the items of the questionnaire, five items were added to better reflect the culture of Iranian women by the experts on the committee. The added items were as follows: (1) "Women feel uncomfortable if others know that they are in menopause," (2) "Women are happy to get

TABLE 1. Participants' characteristics

Variable	EFA sample (n = 513)	CFA sample (n = 801)	P
	Median (1st Q-3rd Q)	Median (1st Q-3rd Q)	
Age, y	52.0 (49.0-57.0)	52.0 (49.0-58.0)	0.91 ^a
Husband age, y	58.0 (53.0-62.0)	58.0 (53.0-63.0)	0.52 ^a
Education, y	5.0 (2.0-9.0)	5.0 (2.0-9.0)	0.21 ^a
Husband education, y	8.0 (3.0-12.0)	6.0 (3.0-12.0)	0.40 ^a
Marriage age, y	18.0 (16.0-20.0)	18.0 (16.0-20.0)	0.18 ^a
Menarche age, y	14.0 (13.0-15.0)	14.0 (12.0-15.0)	0.52 ^a
No. children, y	4.0 (3.0-5.0)	4.0 (3.0-5.0)	0.68 ^a
Occupation			0.53 ^b
Employee	55 (10.7)	93 (11.6)	
Housewife	388 (75.6)	593 (74.0)	
Home jobs	42 (8.2)	80 (10.0)	
Retired	27 (5.5)	36 (4.4)	
Husband occupation			0.47 ^b
Employee	56 (10.9)	81 (10.1)	
Farmer	84 (16.4)	125 (15.6)	
Worker	104 (20.3)	174 (21.7)	
Self-employed	136 (26.5)	182 (22.8)	
Retired	133 (25.9)	239 (29.8)	
Is this your first marriage?			0.38 ^b
Yes	488 (95.1)	770 (96.1)	
No	25 (4.9)	31 (3.9)	
Are you the only wife of your husband?			0.69 ^b
Yes	28 (5.5)	48 (6.0)	
No	485 (94.5)	753 (94.0)	
Menstrual status			0.27 ^b
Regular	21 (4.1)	28 (3.5)	
Nonregular	52 (10.1)	104 (13.0)	
Menopausal	440 (85.8)	669 (83.5)	
Relationship with husband			0.34 ^b
Very good	158 (30.8)	257 (32.1)	
Good	316 (61.6)	493 (61.5)	
Bad	39 (7.6)	48 (6.0)	
Very bad	0 (0.0)	3 (0.4)	
Diabetes			0.04^b
Yes	54 (10.5)	116 (14.5)	
No	459 (89.5)	685 (85.5)	
Hypertension			0.82 ^b
Yes	142 (27.7)	217 (27.1)	
No	371 (72.3)	584 (72.9)	
Blood lipids			0.60 ^b
Yes	98 (19.1)	164 (20.5)	
No	415 (80.9)	637 (79.5)	
Thyroid			0.11 ^b
Yes	28 (5.5)	62 (7.7)	
No	458 (94.5)	739 (92.3)	
Back pain			0.30 ^b
Yes	180 (35.1)	259 (32.3)	
No	333 (64.9)	542 (67.7)	
Foot pain			0.62 ^b
Yes	219 (42.7)	331 (41.3)	
No	294 (57.3)	470 (58.7)	
Heart diseases			0.06 ^b
Yes	46 (9.0)	98 (12.2)	
No	467 (91.0)	703 (87.8)	
Renal diseases			0.50 ^b
Yes	25 (4.9)	46 (5.7)	
No	488 (95.1)	755 (94.3)	
Depression			0.47 ^b
Yes	39 (7.6)	70 (8.7)	
No	474 (92.4)	731 (91.3)	
Other mental disorders			0.13 ^b
Yes	26 (5.1)	27 (3.4)	
No	487 (94.9)	774 (96.6)	

Bold values denote statistical significance at the $P < 0.05$ level.
 CFA, confirmatory factor analysis; EFA, exploratory factor analysis.
^aMann-Whitney U test.
^b χ^2 Test.

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TABLE 2. CVI, CVR, and factor loading of the Persian ATM questionnaire (n = 513)

Item	Item content	Content validity		Factor loading						
		CVI	CVR	F1	F2	F3	F4	F5	F6	F7
1	Menopause is an unpleasant experience for women.	0.95	1.00	0.58						
4	Menopause is a disturbing thing which most women naturally dread.	0.94	0.82	0.80						
5	It is no wonder women feel “down in the dumps” at the time of the menopause.	0.87	0.82	0.84						
6	In truth, just about every woman is depressed about the change of life.	0.97	0.45	0.76						
7	Women generally feel better after the menopause than they have for years.	0.78	0.73		0.76					
8	A woman has a broader outlook on life after the change of life.	0.85	0.55							
9	A woman gets more confidence in herself after the change of life.	0.96	0.73		0.89					
10	Women are generally calmer and happier after the change of life than before.	0.84	0.82		0.88					
11	Life is more interesting for a woman after the menopause.	0.92	0.45							
12	After the change of life, a woman feels freer to do things for herself.	0.84	0.73							
13	After the change of life, a woman has a better relationship with her husband.	0.92	0.91		0.72					
14	Many women think menopause is the best thing that ever happened to them.	0.94	0.73							
15	After the change of life, a woman gets more interested in community affairs than before.	0.90	0.73							
17	The only difference between a woman who has not been through the menopause and one who has, is that one menstruates and the other doesn't.	0.87	0.73							0.52
18	Going through the menopause really does not change a woman in any important way.	0.94	0.82							
20	Women who have trouble in the menopause are those who are expecting it.	0.94	0.64			0.85				
21	The things that cause women all their trouble at menopause is something they cannot control changes inside their body.	0.85	0.73			0.81				
22	Women often get self-centered at the time of the menopause.	0.75	0.55						0.71	
23	After the change of life, women do not consider themselves “real women” anymore.	0.75	0.91						0.75	
24	Women often use the change of life as an excuse for getting attention.	0.92	0.64						0.83	
25	Women worry about losing their minds during the menopause.	0.88	0.64						0.71	
26	A woman is concerned about how her husband will feel towards her after the menopause.	0.92	1.00						0.54	
29	If the truth were really known most women would like to have themselves a finding at this time in their lives.	0.94	0.45				0.79			
30	After the menopause a woman is more interested in sex than she was before.	0.92	0.73			0.78				
31	Unmarried women have a harder time than married women do at the time of the menopause.	0.94	0.73							
32	A woman should see a doctor at the menopause.	0.90	0.64							0.74
33	A good thing about the menopause is that a woman can quit worrying about getting pregnant.	0.89	1.00							0.76
34	Menopause is one of the biggest changes that happens in a woman's life.	1.00	1.00							
35	Women think of menopause as the beginning of the end.	0.98	0.91						0.68	
36	Women feel uncomfortable, if others know that they are in menopause.	1.00	1.00						0.81	
37	Most women tend to postpone menopause in any way they can.	1.00	1.00						0.67	
38	Women are happy to get rid of the bleeding and menstrual periods after menopause.	1.00	1.00							0.75
39	Most women are happy that after menopause they have more freedom in performing religious duties (such as prayer, fasting, etc).	1.00	1.00							0.87
40	Most women welcome menopause due to greater convenience in religious journeys (such as Hajj and Atbat pilgrimage).	1.00	1.00							0.85

ATM, Attitude Towards Menopause; CVI, content validity index; CVR, content validity ratio.

rid of the bleeding and menstrual periods after menopause,” (3) “Most women are willing to delay menopause in any way they can,” (4) “Most women are happy that after menopause they have more freedom in performing religious duties (such as prayer, fasting, etc),” and (5) “Most women welcome menopause due to greater convenience in religious journeys (such as Hajj and Atbat pilgrimage).”

We changed the format and font size of some items based on the feedbacks of the participants in the pilot study. The wording and structure of the items remained the same.

Participants' characteristics

Table 1 provides a list of the participant characteristics. There was no significant difference between the two EFA and CFA samples except for diabetes.

Construct validity

The KMO value was 0.78, and the sphericity Bartlett test was significant ($\chi^2 = 5817.39$; $df = 325$; $P < 0.001$). The EFA found seven components with eigenvalues higher than 1, accounting for 66.18% of the total variance of the ATM (Table 2). After their

identification and evaluation, the following names were given to the seven factors: negative affect (F1), postmenopausal recovery (F2), control of symptoms (F3), sexuality (F4), psychological losses (F5), unpleasant confrontation (F6), and menstrual freedom (F7) (Table 2).

Model fit indices of CFA are presented in Table 3. Based on six model fit indices, the model had an acceptable fit to the data. Therefore, the CFA results confirmed the model structure suggested by the EFA.

TABLE 3. Model fit indices of CFA

Index	Value	Good fit	Acceptable fit	Reference	Result
χ^2/df	4.56	0-2	2-5	²²	Acceptable fit
RMSEA	0.07	≤ 0.05	0.05-0.08	²³	Acceptable fit
GFI	0.90	0.95-1.00	0.90-0.95	²⁴	Acceptable fit
AGFI	0.86	0.90-1.00	0.85-0.90	²⁵	Acceptable fit
CFI	0.90	0.95-1.00	0.90-0.95	²⁶	Acceptable fit
TLI	0.88	0.90-1.00	0.80-0.90	^{27,28}	Acceptable fit

AGFI, Adjusted Goodness-of-Fit-Index; CFA, confirmatory factor analysis; CFI, Comparative Fit Index; GFI, Goodness-of-Fit Index; RMSEA, Root Mean Square Error of Approximation; TLI, Tucker-Lewis Index.

TABLE 4. AVE and CR, Cronbach α , and ICC of Persian ATM subscales

Factors	AVE	CR	Cronbach α	ICC
1. Negative affect	0.51	0.80	0.70	0.87
2. Postmenopausal recovery	0.59	0.85	0.87	0.79
3. Control of symptoms	0.74	0.85	0.82	0.88
4. Sexuality	0.99	0.76	0.51	0.82
5. Psychological losses	0.54	0.69	0.79	0.65
6. Unpleasant confrontation	0.48	0.73	0.78	0.79
7. Menstrual freedom	0.68	0.88	0.69	0.81

ATM, Attitude Towards Menopause; AVE, average variance extracted; CR, construct reliability; ICC, intraclass coefficient correlation.

Convergent and discriminant validity

Except for psychological losses, all subscales had CR values more than or equal to 0.7, showing good discriminating validity. The subscales' AVEs, which ranged from 0.48 to 0.99, adequately showed convergent validity (Table 4).

Reliability

The four components' Cronbach α values were between 0.6 and 0.7, indicating acceptable reliability. A high reliability was seen for two subscales (α values > 0.8). For one subscale, with only two items, Cronbach α value was low ($\alpha = 0.51$), but the mean interitem correlation was 0.35, indicating adequate reliability. The whole scale's Cronbach α was 0.70. The estimated ICC for test-retest reliability was 0.89 (95% confidence interval, 0.73-0.86; $P < 0.001$), showing that the scale had high stability over time. The values of ICC for subscales were also between 0.65 and 0.88 (Table 4).

DISCUSSION

Because of the different sociocultural contexts, women's attitudes about menopause vary across countries. This study aimed to translate, cross-culturally adapt, and validate the ATM scale in Persian.

In the present study, a standard algorithm was used for translation and cross-cultural adaptation, and all experts' recommendations were taken into consideration and applied. Six items were removed because of lower CVR values than the allowed range during the phase of the quantitative content validity. Moreover, according to the experts' recommendations, five items were added to the scale to better reflect the Iranian women's culture. Because various psychological and physiological changes that occur during the menopausal period, including depression, anxiety, mood swings, lack of confidence, low self-esteem, and hormonal changes,¹⁴ women frequently are reluctant to recognize their menopause and/or may be unaware of its arrival. Fear of social stigmas such as being elderly, sexless, unproductive, unstable psychologically, and hormonally insufficient may also be to blame.^{15,17} Therefore, the items "Women feel uncomfortable if others know that they are in menopause" and "Most women tend to postpone menopause in any way they can" were added as new items.

The vast majority (99%) of the population in Iran is Muslim.²⁰ In Islam, menstruating women are not allowed to touch the Quran, enter the mosque, pray, fast, or have intercourse with their

husbands.^{18,19} They also cannot do the Tawaf during the Hajj pilgrimage if they are in menstruation (Muslim men and women travel to Saudi Arabia once in the life to conduct the hajj pilgrimage at Mecca and Medina if they can afford the trip). The Muslim pilgrims must perform the Tawaf as one of the required rites, which involves seven counterclockwise laps around the Kaabah. Women are barred from participating in the aforementioned activities to give them a break. Religion and culture always exist in close relation.¹⁰ Menopause may bring about feelings of comfort and respite from period cramps and bleeding and be an opportunity for religious commitment for Muslim women.^{30,31} We added three other items to reflect religious and cultural context of Iranian women. The values of I-CVI and S-CVI for the final items indicated that the instrument might be a good one to measure Iranian women's attitudes regarding menopause.

In the psychometric analysis, based on the results of EFA and CFA, a revised version of the ATM scale with seven-factor structure, including 26 items, was obtained. The items of five factors were most consistent with the original ATM scale, and they were named with the same names as in the original scale, including negative affect, postmenopausal recovery, control of symptoms, sexuality, and psychological losses. The other two factors consisted of the new added items to the original ATM scale and were interpreted as "unpleasant confrontation" and "menstrual freedom."

The results of the present study were in line with the study of Ucanok and Bayraktar,³² and Choi,³³ which led to a modified version of the ATM scale. The Turkish versions of the ATM scale proposed by Ucanok et al and Choi included 20 items within seven factors that were interpreted as the same as the original scale, except for ungrouped items.

Convergent and discriminant validity of the Persian ATM scale was confirmed through the values of AVE and CR, respectively. In the phase of reliability assessment, this study obtained an acceptable reliability based on the value of Cronbach α for internal consistency and the ICC value for stability through the test-retest method.

To the best of our knowledge, this was the first study that investigated the psychometric properties of the ATM scale among Iranian women. Because the validity and reliability of the ATM scale were only evaluated in women from northeast Iran, other research on the psychometric features of the ATM scale could usefully include women from various regions of Iran.

CONCLUSIONS

The Persian version of the ATM scale is a reliable and valid tool to evaluate the attitudes of Iranian women toward menopause. Therefore, we suggest that this reliable questionnaire be used in clinical fields and in research projects.

Acknowledgments: We are grateful to the Gonabad University of Medical Sciences for funding the project, as well the participants for their contribution.

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