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Research Article

Psychometric Validation of the Persian Version of Multidimensional Health Locus of Control Scale (MHLC-C) for Menopausal Women

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Background. The Health Locus of Control (HLC) serves as a mediator between an individual's behaviors and health status, influenced by various cultural, environmental, and situational factors. Its measurement reflects health beliefs and attitudes, ultimately leading to healthy behaviors. Menopause is a significant phenomenon in women's lives, often resulting in a wide range of symptoms and health issues. Therefore, the perception of HLC plays a crucial role in promoting healthy behaviors and managing menopausal symptoms. This study aimed to assess the validity and reliability of the Persian version of the short form Multidimensional Health Locus of Control Scale (MHLC) in Iranian menopausal women and explore its interrelationships. *Methods*. A cross-sectional study was conducted with 271 menopausal women from September to November 2023. Psychometric properties such as construct validity (confirmed through confirmatory factor analysis), convergent validity (evaluated using average variance extracted), and internal consistency (assessed by Cronbach's alpha, composite reliability and rho_A factor) were examined. Discriminant validity was determined using the Fornell–Larcker criterion. Reliability was further established through Cronbach's alpha and McDonald's Omega coefficients. The predictive relevance of the model and associations between constructs were analyzed using various statistical measures. Data analysis was conducted using SPSS v.27 and Smart PLS 3.0 software. Limitations of this study include that it was conducted in urban health centers, only women with at least primary education were included, and reliance on self-reported data. *Results*. The initial stage of construct validity involved the Kolmogorov–Smirnov test, with confirmatory factor analysis demonstrating a good model fit. Significant correlations were found between internal health control and factors related to doctors and other people, indicating that internal health control directly influences these factors in managing menopausal symptoms and health problems. Cronbach's alpha and McDonald's Omega coefficients for the 13-item MHLC-C scale were satisfactory (0.81 and 0.72, respectively). *Conclusions*. The Persian version of the 13-item MHLC-C has been validated as a reliable tool for assessing the health locus of control in Iranian menopausal women. Internal health control was found to significantly impact perceptions related to doctors and other people, highlighting its importance in managing menopausal symptoms effectively.

1. Introduction

Today, the majority of countries are grappling with an increase in the population of postmenopausal women [1]. The number of women in the typical age range for menopause has risen by 26.6% in 10 years, and it is estimated that by 2025, there will be 1.1 billion postmenopausal women worldwide [2]. Menopause signifies the end of ovarian function and marks the transition from a reproductive to a nonreproductive phase in a woman's life [3]. This critical stage is characterized by significant changes in physiological and psychosocial aspects [2, 4]. Women often experience various

symptoms such as hot flashes and night sweats (vasomotor symptoms), mood changes (including depression and anxiety), as well as disturbances in sleep, cognition, genitourinary function, and sexual health [5]. These interconnected menopause-related symptoms can impact a woman's self-esteem, health, and quality of life, necessitating effective management to prevent future adverse health outcomes [3, 6].

Current clinical guidelines recommend menopausal hormone therapy for the treatment of menopausal symptoms. While this therapy has benefits, it may not be suitable or desirable for all women, and those undergoing it may experience a range of side effects [4, 5]. Therefore, managing these health issues should emphasize security, value, and satisfaction [7]. It is essential to support women in making personalized, informed decisions regarding managing and controlling their menopausal symptoms [6, 8, 9]. When women believe they have control over their health, they are more likely to engage in healthy behaviors such as a balanced diet and physical activity [10, 11]. In fact, the perception of Health Locus of Control (HLC) among menopausal women is crucial in promoting healthy behaviors and effectively managing menopausal symptoms [10, 12]. In other words, HLC is a key indicator used to assess womens' health beliefs and is associated with self-care and a healthy lifestyle [13]. Additionally, previous studies have indicated a relationship between HLC and factors such as empowerment, quality of life, health, and healthy beliefs and behaviors [14–18].

The HLC concept revolves around an individual's perception of their ability to influence their health, divided into internal or external categories. Individuals with an internal HLC believe that health outcomes are dependent on their behavior or personal characteristics. Conversely, those with an external HLC attribute wellness outcomes to forces beyond their control, such as other people or chance [19, 20]. Women with an internal HLC tend to be more vigilant about oral hygiene, less likely to smoke, more diligent in self-examining their breasts, use contraception more consistently, exhibit lower levels of depressive symptoms, actively seek health information, have greater knowledge about their diseases, appreciate social support more, are less prone to stress, have stronger self-assessments of health, and are more likely to adhere to diet and physical activity recommendations compared to women with an external HLC [21, 22]. Thus, internal HLC can predict behavior across various situations affecting health outcomes, especially in women [22–24]. Additionally, HLC acts as a mediator between individual, social, and health status, with its measurement revealing health beliefs and attitudes that lead to healthy behaviors [25].

The Multidimensional Health Locus of Control scales (MHLCs) are among the oldest and most common tools used for this purpose. These scales, developed from Rotter's social learning theory, are divided into three forms: A, B, and C. They assess an individual's health perception as dependent on their actions (internal HLC), on the influence of authoritative figures like doctors (powerful others HLC), or as a result of chance (chance HLC) [26, 27]. The MHLC scales forms A and B (MHLC-A and MHLC-B) are considered general and may not be appropriate for all medical or health-related conditions, such as menopause. However, MHLC form C (MHLC-C) can be customized to address specific health conditions that are relevant to the outcomes [28]. This instrument operates on the premise that HLC is influenced by the social environment and an individual's unique circumstances within different women's health conditions [29]. Despite the widespread study of MHLC-A and MHLC-B in clinical and nonclinical populations, there is a notable gap in research on the psychometric properties of MHLC-C in clinical groups, indicating a significant area for further study [28].

Given that (1) HLC can be influenced by a variety of cultural, environmental, and situational factors. In menopausal women, religion and education level are two key factors that can impact HLC. These factors can shape attitudes towards health control and ultimately affect how individuals perceive their ability to manage their own health [8, 23], (2) there appears to be a lack of studies evaluating the psychometric properties of MHLC scales specifically for menopausal women, and (3) only a limited number of studies have validated the psychometric properties of the MHLC-C, including studies among pregnant women, type 2 diabetic patients, and individuals with various pain conditions [28, 30, 31]. As a result, there is currently a lack of a dedicated tool to evaluate menopausal women's perceptions of HLC. In this regard, the primary goal of this study was to assess the psychometric properties of the MHLC-C in Iranian menopausal women and explore the effect of its subscales on each other. Also, we aimed at evaluating the relationship between background demographic factors and 18-item MHLC-C subscales.

2. Materials and Methods

2.1. Study Design and Population. This cross-sectional study was conducted from September to November 2023, involving 271 menopausal women selected through convenience sampling from three urban health service centers in Shiraz, Iran. These centers were randomly chosen using PASS 15 software (NCSS, LLC., USA) [32] from a pool of 30 centers.

The sample size was determined based on the mean $\pm$ SD of the internal HLC score (23.15 ± 3.83) from a previous study [33]. Utilizing PASS 15 software (NCSS, LLC., USA) [32], the sample size was calculated to be 271 participants. This calculation accounted for a type I error rate of 0.05%, a test power of 95%, and a 20% attrition rate.

Eligible menopausal women, aged between 45 and 65 years and at least one-year postmenopause, with a minimum literacy level of elementary education, were invited to participate. They were required to sign an informed consent form to be included in the study. The exclusion criteria for the study were reluctance to participate and failure to answer more than 20% of the questions in the questionnaire.

2.2. Data Collection. The study required participants to complete two questionnaires: the Persian version of the MHLC scales Form C (MHLC-C) [28] and a demographic information questionnaire. The MHLC-C comprises 18 items across four subscales: internal HLC (six items), chance HLC (six items), doctors HLC (three items), and other people HLC

(three items). Respondents rated each item on a six-point Likert scale ranging from "strongly disagree" to "strongly agree." Scores for the internal and chance subscales can range from 6 to 36, while those for the doctors and other people subscales range from 3 to 18. Higher scores indicate a stronger belief that the corresponding factor influences health. The Persian translation of this scale, completed in 2019, demonstrated reliability with Cronbach's alpha coefficients of 0.90 for chance, 0.82 for internal, 0.75 for other people, and 0.62 for doctors [28]. In the current study involving menopausal women, the Persian MHLC-C achieved a Cronbach's alpha of 0.84 and a McDonald's Omega of 0.75. The Cronbach's alpha–McDonald's Omega for the chance, internal, other people, and doctors subscales were 0.87–0.87, 0.82–0.83, 0.85–0.85, and 0.79–0.80, respectively.

Demographic data collected included age, education, marital status, occupation, religion, adequacy of family income for living expenses, living arrangement, and housing situation. These factors as cultural, economic, and situational factors can affect HLC [8, 23].

2.3. Procedure. The first step involved obtaining permission from Dr. Moshki M., the developer of the Persian version of the questionnaire [28], affiliated with the School of Health, Gonabad University of Medical Sciences, Iran. The researchers followed the guidelines of Beaton et al. [34] for the translation and cross-cultural adaptation process. A qualitative method was then used to assess face validity by gathering opinions from five experts on the difficulty, irrelevancy, and ambiguity of the items. Any necessary corrections were made to ensure final approval [28]. Following the guidelines of Wallston KA [26], the term "menopause symptoms" was used to replace "condition" in each item.

This research focused on evaluating the tool's psychometric properties to examine its construct validity and reliability. To assess construct validity, the first step with 271 participants involved determining data normality using the Kolmogorov–Smirnov test in SPSS version 27 [35, 36], which indicated a lack of data normality ($p < 0.001$).

In addition, Spearman's correlation and Kruskal–Wallis test were conducted to evaluate the relationship between background demographic factors and 18-item MHLC-C subscales. The significance level was set at <0.05.

The next phase entailed construct validity, which was assessed through confirmatory factor analysis (CFA), based on the results of the Spearman's rho correlation test in SPSS version 27; this software is compatible with numerous data management programs [36]. Data analysis was performed using PLS-path modeling in SmartPLS version 3.2.8, as it is considered one of the top software options for small sample sizes and non-normal data [37, 38]. Consequently, the model underwent modifications (items with factor loading <0.55 were removed), and metrics such as construct reliability and validity, convergent validity, discriminant validity, fit indices, and path coefficients were reported. The convergent validity of the reflective structure was confirmed by examining the external load and average variance extracted (AVE). Internal consistency was verified using Cronbach's alpha, composite reliability (CR), and rho_A factor. Diagonal elements needed to be significantly greater for adequate identification validity than the off-diagonal elements in their respective rows and columns [39].

Following this, the inner structural model outcomes were measured, focusing on the model's predictive relevance and the relationships between constructs. The evaluation of the inner structural model was based on several key metrics: the coefficient of determination (R^2), path coefficient (b value), T-statistic value, effect size (F^2), and predictive relevance of the model (Q^2) [40].

Finally, reliability was assessed using Cronbach's alpha coefficient and McDonald's Omega which was acceptable above 0.70 [37].

2.4. Timeline of Study. Approved by the ethics committee 25 June 2023; obtained permission and taken Persian version of MHLC-C from Dr. Moshki M. July 2023; selected centers and taken letters of introduction August 2023; conducted 1 September– 4 November 2023; analyzed data 10–29 November 2023.

3. Result

3.1. Participants. In the study, 271 menopausal women participated. The participants had a mean age and mean menopause age of 55.19 ± 6.53 and 48.88 ± 4.34 years, ranging from 45 to 65 and 34 to 61 years, respectively. A large proportion of them were married (216; 79.7%), held a high school diploma or less (214; 79.0%), and were homemakers (198; 73.1%). Additionally, the majority identified as Muslim (265; 97.8%), reported a family income lower than their monthly expenses (147; 54.2%), lived with their husband and children (182; 67.2%) and owned a personal house (225; 83.0%). These demographic details are summarized in Table 1.

Normality of MHLC-C subscales was tested by applying Kolmogorov–Smirnov test, which indicated a lack of data normality ($p < 0.001$). The results of the Kruskal–Wallis test revealed significant relationships between marital status and the internal subscale score. The highest mean rank was found in the singles group, while the lowest mean rank was observed in the separated-divorced-widow group ($H\ (2) = 9.11$, $p = 0.01$).

Furthermore, education level was found to be related to the doctor subscale score, with a higher mean rank associated with academic education ($H\ (1) = 6.18$, $p = 0.01$). Education level also had an impact on the chance subscale score, with a higher mean rank seen in individuals with a diploma or less education ($H\ (1) = 3.66$, $p = 0.04$). No significant relationships were found between other background demographic factors and the 18-item MHLC-C subscales.

3.2. Construct Validity. The relationships between the four factors—chance, internal, other people, and doctors-were assessed using the Spearman's rho correlation test, with the results presented in Table 2.

CFA was used with 271 participants. The CFA model, constructed based on the Spearman's rho correlation test,

Table 1: Demographic characteristics of the menopausal women ($n = 271$).

Characteristics	Categories	N	%
Marital status	Single	10	3.7
	Married	216	79.7
	Separated/divorced/widow	45	16.6
Education	High school grade (diploma) or less	214	79.0
	Academic education	57	21.0
Job	Homemaker	198	73.1
	Employed/retired	73	26.9
Religion	Muslim	265	97.8
	Other	6	2.2
Family income adequacy for living expenses	Less than monthly expenses	147	54.2
	Equal to monthly expenses	91	33.6
	More than monthly expenses	33	12.2
Living arrangement	Living alone	17	6.3
	With husband and children	182	67.2
	With husband/children	61	22.5
	With parent/siblings/relatives	11	4.0
Housing situation	Personal house	225	83.0
	Rental/relatives house	46	17.60

Table 2: The relationship between subscales of MHLC-C for menopausal women.

Subscales-scale	Mean ± SD	Internal	Chance	Other people	Doctors	MHLC-C
Internal	20.83 ± 5.81	1	—	—	—	—
Chance	17.63 ± 7.44	0.08	1	—	—	—
Other people	10.32 ± 4.25	0.39**	0.23**	1	—	—
Doctors	13.17 ± 3.81	0.32**	< 0.01	0.19**	1	—
MHLC-C	61.97 ± 14.00	0.61**	0.65**	0.66**	0.43**	1

**$p < 0.001$.

was developed and refined using the SmartPLS software's suggested corrections. This process resulted in satisfactory fit indices. Five items were removed (item 2 related to chance and items 6, 8, 13, and 17 related to internal) because their factor loading were <0.55 [39], leaving 13 items in the final model. The fit indices, including the standardized root mean sSquared residual (SRMR) and the normed-fit index (NFI), were calculated to be 0.06 and 0.78, respectively. These values indicate a good fit, as SRMR values <0.10 or 0.08 and NFI values between 0 and 1 are generally considered acceptable [39].

A bootstrap method was also used to confirm the relationships between independent and dependent factors. According to the model, internal control influences the other people and doctors factors, and the other people factor affects the chance factor ($p < 0.001$). Predictive validity was assessed using the blindfolding technique, and Q^2 values were found to be 0.11, 0.08, and 0.03 for the doctors, other people, and chance factors, respectively. Values >0 confirm the predictive relevance of the path model for the endogenous constructs. Figure 1 illustrates the path analysis of the modified model.

To determine the predictive accuracy of the model, R^2 values were estimated. These findings suggest that internal factor can explain 12% of the variation in other people factors and 17% of the variation in doctors factors. Additionally, 6% of the variation in chance factors can be explained by other people factors. These results indicate a weak explanatory power for these factors and suggest that the model only partially predicts the outcome, as depicted in Figure 1.

Effect size (F^2) was calculated to assess the impact of the path coefficients between independent and dependent factors. The F^2 between the internal control and the other people and doctors factors was 0.13 and 0.21, respectively, considered small and medium effects. Additionally, the F^2 between the other people and chance factors was 0.07, which is regarded as a small effect, as shown in Figure 1.

The study assessed discriminant validity using the Fornell–Larcker criterion, which indicated satisfactory differentiation among constructs at their respective levels. This assessment is detailed in Table 3.

The study also evaluated construct reliability and validity using Cronbach's alpha, rho_A, and CR. The values for Cronbach's alpha and rho_A were above 0.70, surpassing the acceptable cutoff value, indicating that these measurements are reliable. Similarly, the CR values for all variables

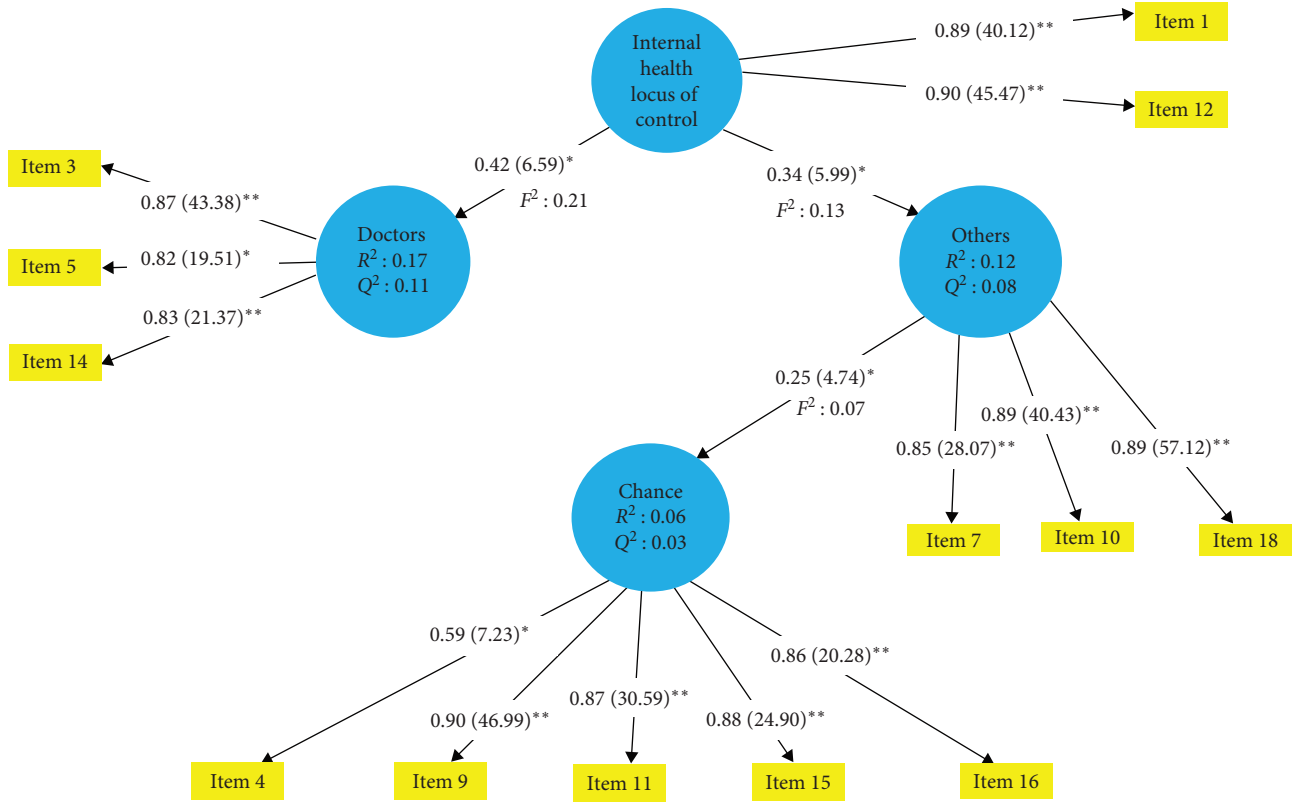

Figure 1: PLS estimates for measurement model and structural model. On each arrow, the first number indicates b-value and the number in parentheses indicates T-value. $^{*}p<0.001$, $^{**}p<0.01$.

Table 3: Convergent validity, construct validity, and reliability of MHLC-C for menopausal women.

Factors	Cronbach's alpha	rho_A	Composite reliability	AVE
Chance	0.88	0.93	0.91	0.69
Doctors	0.79	0.81	0.88	0.71
Other people	0.85	0.86	0.91	0.77
Internal	0.76	0.76	0.89	0.80

AVE: average variance extracted.

Table 4: Discriminant validity coefficients of MHLC-C for menopausal women.

	Fornell–Larcker criterion			
Factors	Chance	Doctors	Other people	Internal
Chance	0.83	—	—	—
Doctors	0.01	0.84	—	—
Other people	0.25	0.24	0.88	—
Internal	0.10	0.42	0.34	0.89

exceeded the acceptable cutoff of 0.60. Convergent validity was assessed using the AVE, with all variables exceeding the recommended cutoff value of 0.50, further confirming the reliability of the measurements used in the research. These results are presented in Table 4.

3.3. Reliability Analysis. For the reliability analysis, the reliability of both the original 18-item MHLC-C scale and the final 13-item scale used in the study for menopausal women was estimated. The Cronbach's alpha coefficients for these scales were 0.84 and 0.81, respectively, indicating high reliability. Additionally, the McDonald's Omega values for the overall scale were 0.75 and 0.72, respectively. For the ratings of chance, other people, and doctors, McDonald's Omega values were 0.87 and 0.89; 0.85 and 0.85; and 0.80 and 0.80, respectively, demonstrating strong reliability.

4. Discussion

This study aimed to assess the validity and reliability of the MHLC-C as a suitable tool for Iranian menopausal women and to understand the interplay of various factors. In addition, we evaluated the relationship between background demographic factors and 18-item MHLC-C subscales.

In this study, marital status was found to be related to the "Internal" subscale, while education level was related to the "Doctors" and "Chance" subscales. Single women and widowed, separated, or divorced women had the highest and lowest scores in "Internal" HLC, respectively. This could be attributed to the fact that single women may experience menopause at an earlier age and have fewer social relationships and family supports compared to married or divorced women, leading them to rely more on themselves and their abilities [41]. Women with higher academic education had higher scores in the "Doctors" HLC subscale, whereas women with a diploma or less education

had higher scores in the "Chance" HLC subscale. This could be due to the fact that women with lower education levels may experience more severe menopausal symptoms, while those with higher education levels are more aware of menopausal symptoms and strategies for managing them. They are also more likely to seek treatment for their symptoms and make informed decisions about their health [41]. To improve the "Internal" HLC of menopausal women, it is important to focus on empowering them by increasing their knowledge and skills related to healthy lifestyle choices and menopausal health. This can help women better cope with their symptoms and make informed decisions about their healthcare [1, 2].

Regarding the main goal of this study, four factors comprising 18 items were used confirmed in CFA with 13 items, after the exclusion of one item related to "Chance" and four items related to "Internal". Other research has verified various item numbers in CFA: 18 items among pregnant women [28], 18 items among patients with rheumatoid arthritis [42], 18 items across three factors, combining the "Doctors" and "Others People" subscales into one among patients with various health conditions [43], 18 items across three factors, combining the "Doctors" and "Others People" subscales into "Powerful Other People" among early pregnancy women [44], 17 items (omitted I18 related to the "Internal" factor) among both genders and focused on type 2 diabetes patients [30], and 16 items, with two pertaining to "Chance" [31]. These discrepancies could stem from cultural, environmental, situational, and demographic differences [23]. Culture, socioeconomic status, gender, religion, and moral value all influence how individuals perceive and respond to their health and illnesses. These factors can shape one's understanding of health and impact their behaviors related to healthcare [45]. Additionally, variations in research findings may be due to differences in statistical methodologies used by researchers. For example, Konkolÿ Thege et al. [43] and Jafari et al. [30] utilized different statistical software for their analyses, which can lead to varying results. The choice of software can affect the type of analysis conducted (covariance-based vs. variance-based), the focus of the analysis (covariance matrix vs. maximizing explained variance), the purpose of the analysis (confirmatory factor analysis only vs. both exploratory and confirmatory analysis), and the intended audience (model fit and replication of covariance patterns vs. predictive power and effect sizes). These differences in statistical methodologies can contribute to discrepancies in research findings within the field of health and illness studies [37, 38].

This study's results demonstrate the satisfactory validity and reliability of the 13-item MHLC-C scale for menopausal women, with Cronbach's alpha at 0.81 and McDonald's Omega at 0.72. These metrics for all subscales ranged from 0.76 to 0.88 for Cronbach's alpha and from 0.80 to 0.89 for McDonald's Omega. CR and AVE for all subscales varied from 0.88 to 0.91 and from 0.69 to 0.80, respectively. Comparatively, Jafari et al. [30] reported McDonald's Omega and the MHLC-C alpha as 0.86, with Cronbach's alpha for all subscales between 0.65 and 0.87. Bonafé et al. [31] found Cronbach's alpha for all subscales ranging from 0.66 to 0.84, with CR and AVE between 0.67–0.84 and 0.35–0.57, respectively. Wallston et al.'s [26] study also indicated suitable Cronbach's alpha coefficients for all subscales, ranging from 0.66 to 0.83, aligning with other studies showing ranges from 0.62 to 0.90 [28], from 0.61 to 0.82 [42], from 0.71 to 0.79 [43], and from 0.34 to 0.83 [44]. The similarity of the result is due to the use of the same tool and statistical tests.

Our model revealed that the "Internal" control had a small to medium effect size on the "Other People " and "Doctors" factors, respectively. Additionally, the "Other People" factor exerted a small effect size on the "Chance" factor. In simpler terms, the influence of "Internal" control on the "Other People" factor was weak, while its impact on the "Doctors" factor was moderate. The "Other People" factor had a weak effect on the "Chance" factor (SRMR: 0.06; NFI: 0.78, $p < 0.001$). These values suggest a good fit for the model, as SRMR values below 0.10 or 0.08 and NFI values between 0 and 1 are typically considered acceptable [39]. Contrastingly, three studies did not observe an appropriate model fit [30, 43, 44], and one study noted a weak correlation between the "Other People" and 'Doctors' factors (R: 0.36, X2/df: 5.337, CFI: 0.96, GFI: 0.98, RMSEA: 0.06) [31]. Given the limitations in applying the MHLC-C and analyzing its constructs' interrelations, future research should focus on conducting CFA with this instrument on diverse patient groups and samples [28].

5. Conclusion

In the Iranian context, the abbreviated 13-item version of the MHLC-C has demonstrated satisfactory psychometric properties and a strong factor structure, making it a valuable tool for assessing health beliefs and locus of control in menopausal women. This tool is particularly useful for measuring control beliefs in individuals with various medical or health-related conditions due to its efficiency in completion. The significance of HLC in women's health emphasizes the necessity for an accurate assessment tool to evaluate their beliefs regarding health control. The study findings suggest that marital status and education level are two background factors that are associated with perceptions of HLC. Additionally, internal health control has a direct impact on beliefs related to doctors and other individuals, while indirectly influencing beliefs related to chance factors. This paper aims to facilitate more comprehensive and insightful cross-cultural studies on the relationship between general and health-related control beliefs.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Additional Points

Strengths and Limitations. The strengths of this study are manifold. Firstly, it successfully adapted and validated the Persian version of the 13-item MHLC-C scale specifically for menopausal women. The brevity of the questionnaire is highlighted as a beneficial attribute for research purposes, ensuring quicker and more precise completion [46]. Another significant strength was the utilization of partial least squares structural equation modeling (PLS-SEM) for CFA and

predictive modeling which included construct, discriminant, and convergent validity evaluations. PLS-SEM is one of the best software for small sample and non-normal data [37, 38]. Reliability was comprehensively evaluated using McDonald's Omega coefficient, Cronbach's alpha coefficient, and CR. Additionally, the study benefited from an adequately sized sample for the CFA processes. However, the study is not without limitations. One primary limitation of the study is that it was conducted in urban health centers, focusing solely on urban women. Rural women may have different cultural backgrounds and socioeconomic statuses that can influence how they perceive and react to their health [45]. This geographic and demographic limitation highlights the need for future research to be conducted in rural health centers, with a focus on rural women, in order to compare results with those from urban studies. Another constraint of the study is that only women with at least a primary education were included as participants. This limits the generalizability of the findings to illiterate women, who may have different perspectives on health control. Education level is known to impact HLC and can shape attitudes towards health management [8, 23]. Future research should consider designing study procedures that are tailored to collect data from this specific group of women. Additionally, the reliance on self-reported data introduces potential biases. Such data are susceptible to errors and can be influenced by the participants' emotional states at the time of completing the questionnaire, a common issue in self-report studies. Finally, since the study data had a non-normal distribution, nonparametric tests and PLS-SEM were used for accurate analysis of the data [36, 37].

Ethical Approval

This study was approved by the Ethics Committee of Shiraz University of Medical Sciences (IR.SUMS.REC.1402.049).

Consent

All the participants were required to complete a written informed consent form.

Conflicts of Interest

The authors declare that they have no competing interests.

Authors' Contributions

Kaveh Mohammad conceptualized the study project, supervised the implementation process, and edited the manuscript. Khademi Khadijeh participated in study development, data collection, data analysis, and wrote the manuscript. Nazari Mahin was the advisors and edited the manuscript. Asadollahi Abdolrahim helped in data analysis and edited the manuscript. All authors read and approved the final manuscript.

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