

Reliability and Validity of the Persian Version of Widow's Lived Experience Inventory, 90-Item among Iranian Divergent Ethnic Groups

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ABSTRACT

Background: Widowhood in the end stage of married life is accompanied by emotional and physical stresses. The lived experiences of widows entail many challenges. The aim of the study was to develop and extract the psychometric properties of the Persian version index of widow's lived experience (IWLE, 90-Items).

Methods: A total of 493 widows were randomly selected from six ethnic groups across Iran. Data collection was then carried out using WRS and demographic questionnaire. The scale structure was evaluated by assessing goodness of fit in confirmatory factor analysis (CFA). Internal consistency was also assessed by Cronbach's alpha and the optimal cut-off points were calculated by calculating the value of the area under the ROC. Data analysis was then carried out using IBM-SPSS Ver. 24 and AMOS Ver.24.

Results: The construct validity of the IWLE was assessed using CFA and the results showed that the six sub-scales explained a total of 74.45% of the variance. IWLE scale exhibited excellent reliability ($\alpha=0.97$) for the whole scale (ICC = 0.96) ($p<0.001$). The researcher extracted five components, including Economic, Social, Intergenerationality, Remarriage, and Health along with 11 subdomains and confirmed by goodness of fit indices.

Conclusions: The results revealed that the Persian version of IWLE is a valid and reliable tool that can be used by other researchers to measure widows' lived experiences in the Iranian and Middle Eastern contexts.

Keywords: Widows, Lived experience, Older and middle-aged women, Widowhood, Psychometrics, Iran, Translation, Factoranalysis.

Introduction

Advances in science and medicine have led to increased human life expectancy and in the elderly population (1, 2). The population aged 60 years or over will double from 11% in 2006 to 22% in 2050 around the globe (3). The number of middle-aged people also increase during the aging process. Middle age is one of the most sensitive stages of life and studies have defined midlife to include between the ages of about 40 and 60 (4). This aging process will be faster in developed countries (5). The elderly population in Iran is predicted to reach more than 26 million by 2050, and more than 2% of the whole population of the country (3). The increase in the elderly population is especially true among women (6). Population aging leads to new difficult and fundamental challenges i.e. structures related to labour, health care, social security, a challenge to keep older people integrated into society and to provide ways of participation, but it is possible to overcome these challenges (7). The lived experiences and challenges of family members vary across the cultural contexts of societies (8-10). One of the most important challenges of old age is the death of a partner and widowhood (11, 12). Although the proportion of widows/widowers is increasing steadily with age, the rate of widow population growth is much higher than that of widowers. Widowhood is recognized as an issue that affects women, and women live longer than men in developed countries and some developing countries, reflecting the high male mortality rate (13). The word widow(er) refers to a person who has lost his/her spouse and has not remarried (14). Widowhood is one of the most stressful transitions facing people (15-17). Allison et al. found that widowhood increased the risk of death by up to 48%. It leads to emotional distress and issues related to adapting to new living conditions (18). Recent studies have also shown that engagement in mental activities moderates the impact of widowhood and suggested further future studies on about other factors such as changes in physical and mental health, and intergenerational support for older children during widowhood (11, 12, 14). Since there has been no study in some societies like Iran on the effects of widowhood on widows despite the development of recent education for women and with a view to cultural differences and different historical contexts, researchers should specifically investigate problems of widowed women during their widowhood (19, 20). Therefore, it is necessary to investigate the problems of middle aged and old women who are experiencing problems during their widowhood in divergent cultures. To recognize the problems of widows or even to protect women who lose their husbands in the face of the problems and challenges, it first needed a valid tool to identify and categorize these problems. Little attention has been paid to the lived experience using a practical tool and questionnaire, and the existing tools focus on the psychological dimensions of widows/widowers (10, 20). After searching published papers in Google Scholar, DOAJ, PubMed, and Scopus from January 2019 to May 2023, there is no tool to accurately assess the complications and challenges of widowhood in a widow's life. Therefore, the aim of the present study was to design and develop a tool for examining the lived experience of middle-aged and elderly widows, entitled psychometric indices and determination of cut-off points of the IWLE, 90-items in widows of divergent ethnicities of Iran.

Materials and Methods

In a psychometric research, the present study extracted psychometric properties of the 82-item questionnaire aimed at identifying the socioeconomic and individual problems of widows and widowers by Saikia (1995) who designed the primary version (21). Initially, the original version of the above questionnaire was prepared and the instrument was translated based on international translation standards. During the translation and localization process, the original version was first translated into Persian by two individuals and the final version was edited by a panel of researchers. To ensure the authenticity of the translation, one of the English language professors has translated the Persian version obtained in the previous steps back into English again (backward translation). The English version was matched with the original English version of the expert panel (22). Considering the overlap of some questions of the questionnaire, Questions 6, 7 and 79, 80 were merged into two questions due to face validity. Then, according to the review of recent published papers on women's health and widowhood (6, 7, 11, 14, 17, 18, 21, 23-29), 12 questions on the health of widows were added to it, and its content validity ratio was confirmed with a content validity index (CVI) greater than 0.86 (2 items were finally removed in the confirmatory factor analysis process). The final version of the 90-item questionnaire was reviewed by the eight members of the expert panel (Fleiss' Kappa ≥ 0.80). The items were answered using a 5-point Likert scale ranging from "Completely disagree" (1) to "Completely agree" (5). Some items were scored reversely. Overall, the possible score range was 90 to 450 and the internal consistency of the whole tool was calculated 0.97 using Cronbach's alpha (split-half, 0.96 and 0.94). Cronbach's alpha scores for the eleven subscales were as follows: 1. Cost (0.74); 2. Subsistence (0.68), 3. Social perception (0.71), 4. Social norm (0.80), 5. Social restriction (0.78), 6. Generational support (0.75), 7. Generational connection (0.69), 8. Social obstacles (0.81), 9. Individual obstacles (0.85), 10. Neglecting one's health (0.75), and 11. Health threats (0.75). The reliability of the whole tool was acceptable (ICC=0.96). Initially, the sample size of the study was calculated as 493 Iranian middle-aged and elderly widows based on cross sectional and psychometric studies with 95% post hoc power (1-beta), difference index of 0.001 between positive and negative groups in the study of Lee et al. (2018) (18) using NCSS-PASS software ver.15 (30). After approval of the research by the ethic committee of Shiraz University of Medical Sciences (NO.: IR.SUMS.REC-97-01-04-19129), the researcher collected the data with the demographic and health index of widows in 2022 on two sample groups of 493 middle-aged (282) and elderly (211) Iranian widows in the nine Iranian provinces with the most ethnic diversity such as Kurds, Turks, Baluchis, Fars, Arabs, and Turkmen at two time periods. Proportional quota sampling was used to select samples from each urban and rural area according to the census of widows aged 50 years and above as well as the latest National Population Data of Iran in 2022 (31). Middle-aged and older widows were selected from comprehensive health centers affiliated to the Ministry of Health using national integrated health system and were invited to complete the information. Participants were given explanations on confidentiality of the personal information, voluntary participation and a written informed consent form was then obtained. Inclusion criteria included willingness to participate in the study, female gender, age over 50, being a widow, and having the

appropriate mental ability to answer the questionnaire upon results of MMSE. Questionnaires were completed through face-to-face interviews by trained people with communication skills. On average, questionnaires were completed between March 15 and September 15, 2023.

Statistical Analysis

Considering the normal distribution of data, initial analysis and exploratory factor analysis (EFA) were performed in SPSS Ver. 25 and then to determine the psychometric indices and cut-off points of the questionnaire, ROC curve, confirmatory factor analysis (CFA), and goodness of fit indices were performed in AMOS software ver.24. The scoring range of each subscale and the total score of the tool were corrected by using the tool in the real environment and performing psychometric analysis, factor analysis, and placing the cut-off points (32-33).

Results

The mean \pm SD of participants' age was 65.77 ± 9.84 years. A total of 42.6% of them were illiterate (211), 93.1% were housewives (459), 93% had children, 79.2% (390) had been widows for over 10 previous years, and 42.1% were currently living alone (208).

Results of Exploratory Factor Analysis

For EFA, Bartlett's test of sphericity and sample adequacy test were performed using Kaiser-Meyer-Olkin (KMO) (KMO = 0.908, Bartlett's Test of Sphericity = 8759.06, df =132, $P \leq 0.000$). The factor analysis was performed using EFA & CFA methods in two separate populations. This means that the questionnaire has subscales and hidden common traits. Factor extraction was performed by principal component analysis (PCA) method with seven Varimax rotations and Kaiser normalization exhibited an eigenvalue higher than 74% (completely optimal), and out of 90 items of the tool, the following five main factors along with eleven subscales were extracted: 1. Cost (mean factor loading of 0.7316), 2. Subsistence (mean factor loading of 0.6510), 3. Social perception subscale (mean factor loading of 0.715), 4. Social norm (mean factor loading of 0.597), 5. Social restriction (mean factor loading of 0.578), 6. Generational support (mean factor loading of 0.734), 7. Generational connection (mean factor loading of 0.727), 8. Social obstacles (mean factor loading of 0.582), 9. Individual obstacles (mean factor loading of 0.688), 10. Neglecting one's Health (mean factor loading of 0.557), 11. Health threats (mean factor loading of 0.546)

(See Supplemental Table).

Or go to:

www.me-jaa.com/December 2023/Supplemental Table.pdf

Results of Confirmatory Factor Analyses

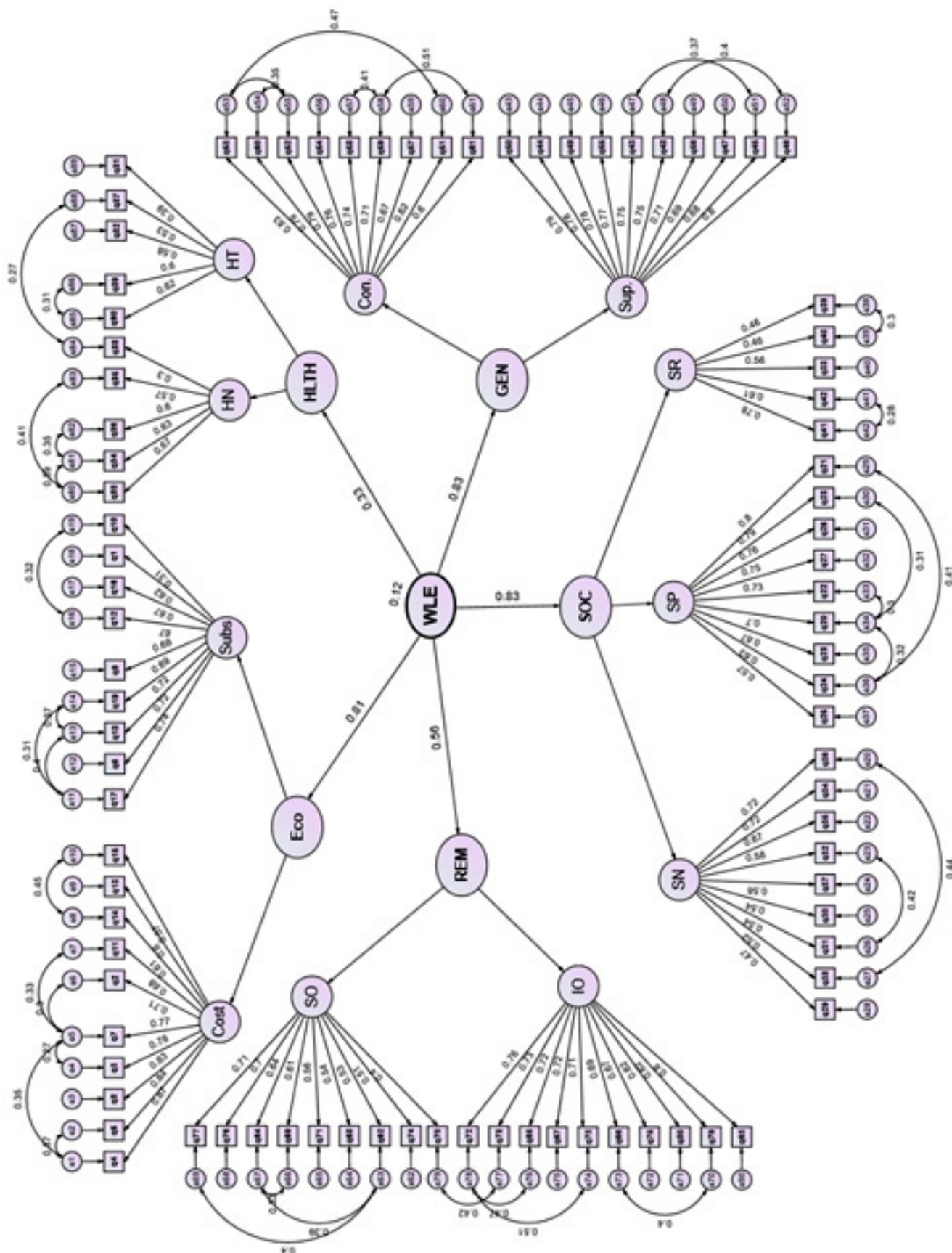
After accepting the factor loadings (≥ 0.20) and distributing factors in the EFA, confirmatory factor analysis (CFA) was performed using generalized least squares (GLS), which confirmed the model ($\geq 90\%$). Also, the most important goodness-of-fit indices of the model are listed in Table 1 (34, 35).

Table 1: The goodness of fit indices of extracted model for the IWLE 90-Items (n = 493)

Fit Indices	χ^2	df	$\chi^2/df \leq 3$	RMSEA	AGFI	GFI	TLI	CFI	NFI
Values	21.374	10	2.137	0.048	0.90	0.90	0.91	0.91	0.90
<i>Goodness of Fit Indices: Adjusted Goodness of Fit Index (AGFI), Goodness of Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), Lewis Index (TLI), Confirmatory Fit Index (CFI), Bentler & Bonnet's Normed Fit Index (NFI),.</i>									

The results of the above table indicate the good fit of the factor distribution in the internal distribution model of the questionnaire and good quality of its factor structure. Therefore, the results of the above tool could be trusted for measuring the widows' lived experience. However, CFA led to identification of 11 hidden variables including cost, subsistence, social perception, social norms, social restriction, generational support, generational connections, social obstacles, individual obstacles, and health threats (Figure 1), which were considered as subsets of the main indicators of Economic, Social, Intergenerationality, Remarriage, and Health.

Figure 1: Path Diagram for the Confirmatory Factor Analysis of Five Domains of the IWLE, 90-Items



Chi2 = 21.374, df = 10, n = 493, chi2/df = 2.137, RMSEA = 0.048, GFI = 0.90, TLI = 0.91, AGFI = 0.90, NFI = 0.90, CFI = 0.91.

Results of ROC analysis for determination of cut-off points

Table 3 shows AUC under the ROC curve, sensitivity, specificity, and cut-off points of IWLE and its five subscales. As the above table shows, the cut-off point that best differentiates among the widows was 188.5. The sensitivity, specificity, and AUC of the above point were 100%, 77.8%, 0.72.3, respectively (95% CI: 0.683-0.763 (P= 0.000). Similarly, the resulting cut-off point was equal to 16.5 for agency, 10.5 for social support, 11.5 for living in the present, 10.50 for helping others, 12.5 for integration, and 10.5 for the outlook (P≤ 0.001).

Table 3. AUC, Sensitivity, Specificity, and Youden’s Index for Possible Cut-off Points of IWLE & its Domains

Test Result Variables	Subdomain	AUC	95% CI		Mean (SD)	P *	Cut-off Point (z)	Sensitivity	Specificity	Youden's J	D Value	DIFF
			Lower Bound	Upper Bound								
Economic	Cost	.682	.538	.727	26.68±11.106	.000	25.50	1.000	.606	.760	.058	.240
	Subsistence	.627	.578	.776	20.05±8.890	.000	16.50	1.000	.620	.564	.190	.436
	Total	.647	.603	.691	47.15±18.466	.001	41.50	1.000	.664	.760	.058	.240
Social	Norms	.755	.713	.797	23.17±8.293	.000	17.50	1.000	.760	.662	.114	.338
	Perception	.630	.584	.676	18.68±7.951	.000	19.50	1.000	.564	.695	.093	.305
	Restriction	.670	.496	.745	10.57±4.046	.000	10.50	1.000	.760	.704	.088	.296
	Total	.653	.608	.699	52.83±17.323	.000	47.50	1.000	.662	.629	.138	.371
Intergenerationality	Connection	.665	.613	.716	20.51±8.634	.000	16.50	1.000	.695	.710	.084	.290
	Support	.647	.584	.711	23.58±9.890	.000	20.50	1.000	.704	.770	.063	.230
	Total	.691	.644	.738	47.67±18.469	.000	38.50	1.000	.629	.615	.148	.385
Remarriage	Social Obstacles	.652	.603	.702	21.71±8.091	.000	18.50	1.000	.710	.613	.150	.387
	Individual Obstacles	.740	.680	.800	24.51±7.085	.000	20.50	1.000	.770	.650	.123	.350
	Total	.700	.656	.745	46.13±14.080	.001	38.50	1.000	.615	.674	.106	.326
Health	Neglect	.671	.568	.774	11.32±3.241	.000	11.50	1.000	.613	.778	.049	.222
	Threats	.717	.632	.803	13.58±3.045	.000	12.50	1.000	.650	.760	.123	.240
	Total	.573	.504	.642	25.13±5.069	.001	24.50	1.000	.674	.564	.190	.436
IWLE		.723	.683	.763	218.91±55.056	.000	188.50	1.000	.778	.778	.049	.222

a. Two-sided Chi-squared test, P ≤ .05. Abbreviations: AUC= area under curve; CI = confidence interval; DIFF = abs (sensitivity– specificity); D Value or K-Index = Sqrt ((1-Sensitivity) ² + (1-Specificity) ²) (35-36).

Discussion

The results of the present study showed that the questionnaire used in the study has satisfactory validity and reliability for measuring the lived experiences of middle-aged and elderly Iranian widows. The present study was conducted on 493 middle-aged and elderly Iranian widows in 2023. The tool was highly reliable in terms of CVI, Fleiss' kappa index, Cronbach's alpha, and ICC value. Factor distributions were extracted using PCA and Varimax rotation during EFA. Five main subscales and eleven sub-subscales were identified from the main variable, lived experience of widowhood and named using the Amos software ver. 11. The lived experience of widowhood tool can be divided into five main indicators of health, subsistence, social, generational connects, and remarriage and then subdivided into the following 11 subscales: cost, subsistence, social perception, social norm, social restriction, generational support, generational communication, social obstacles, individual obstacles, neglecting one's health, and health threats. Widowhood experience may be different for men and women in all fields due to differences in gender norms and marriage traditions (37). One notable difference is that widows are less likely to remarry than widowers (38). As shown by the present study, reduced chance of remarriage in widows may be due to individual and social barriers. Therefore, widowhood is often recognized as an issue affecting women. As women become widows, they undergo a lot of responsibilities and their vulnerability is elevated (26). Such changes are likely to be particularly challenging for widows who undergo traditional marriage ceremonies where men and women are assigned special tasks by gender and have little knowledge of the duties and responsibilities of their spouses (19). For example, family can experience poverty following the husband's death in societies where he is the sole breadwinner (39). As a result, a widow not only loses some of her economic or social support after the death of her husband, but also can experience considerable loneliness and hardship in her daily life (5, 6, 12). Post-widowhood financial security and social security were considered as the most important causes of anxiety after their spouse's death (40). Widows may face these problems partly due to social and cultural issues. The present study questionnaire appropriately classified the social and cultural dimensions, which may involve a widow, into three subscales of social perception, social norms, and social restriction. Recent studies have shown that support of older child makes a significant difference to the economic and social well-being status of widows. Overall, boys have been recognized as a major source of support, however, Mahindra et al. have found that girls help improve the lives of their mothers in other ways (26). Therefore, generational support and generational connections during widowhood was another dimension measured in the present study. On the other hand, economic, social, and psychological benefits of marriage affect people's health. Widowhood poses significant stresses when resources are suddenly changed and may have negative effects on one's health (37). In the present study, widowhood-related health problems were divided into two dimensions: neglecting one's health and health threats. Considering the importance of the challenges during widowhood and the need to identify them, the present study analyzed an appropriate tool that can accurately measure widowhood-related problems. Considering the high level of validity of the instrument of the present study, and also the fact that the participants of the present study were collected from several prov-

inces of Iran with different cultures and lifestyles, the results of the present study can be generalized to the population of middle-aged and elderly Iranian widows. Therefore, the present questionnaire can be generally effective in health screenings and psychological diagnoses, social work assessments in elderly clinics, healthcare centers and welfare organizations across the country. The present study had limitations such as inaccessibility to specific elderly groups such as the elderly residing in nursing homes. Furthermore, given the large number of questions, examiners needed more precision and time to complete the questionnaire. Another limitation of the present study was the lack of studies that use different tools to measure the complications of widowhood in different groups, especially the elderly, so, the researcher faced limited scientific and valid resources.

Conclusion

The results of the present study showed that 90-item IWLE has satisfactory validity and reliability and the questionnaire can illustrate Iranian middle-aged and older widows' challenges. I also recommend to standardize this tool in other countries considering cross-cultural differences.

Authors' Contributions

NP & LFS has contributed to the design, performed the interviews, and written the Introduction section; AAs and AAb has supervised the program and written the sections of Methods, Results, also, has written Discussion & Conclusion parts. All authors have approved the final manuscript as well.

Ethical Considerations

Ethical matters e.g. plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been totally observed by the authors. All the participants received verbal explanation about the study objectives and procedures and then signed written informed consents for taking part in the study. The participants were also reassured about the anonymity and confidentiality of their information. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments including informed consent and confidentiality of all personal information.

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Patient Consent

Written and verbal consent of patients was obtained before participating the study.

Conflict of Interests

The authors declare that they have no competing interests.

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