



VALIDATION OF THE SOCIAL WELL-BEING SCALE IN THE IRANIAN OLD PEOPLE GROUPS

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ABSTRACT

Objectives: Aim of this study was to assess factorial structure of Social Well-being Scale (SWBS) questionnaire.

Material and method: AMOS 18 was used to assess the construct validity of SWBS questionnaire and maximum likelihood method was used to estimate the parameter. Internal consistency was tested to measure the reliability of SWBS questionnaire

Results: The original model displays a poor fit ($\chi^2/df= 4.001$, CFI = 0.88, GFI = 0.86, and RMSEA = 0.87. Six items with low factor loading were removed to improve the fitness of model. The results of confirmatory analysis of SWBS questionnaire revealed acceptable fitness of modified model (CFI = 0.91, GFI = 0.07 and $\chi^2/df= 3.36$). The value of alpha reliability coefficient was 0.64 % for 'social prosperity, 0.33% for 'social adaptation' factor, 71 % for 'social cohesion' factor, 0.70% for 'social acceptance' factor, 0.92 % for 'social participation.

Conclusion: Although three of five subscales had an Alpha less than the criterion value and also six low factor loadings were deleted, this work is meaningful and it can be considered as the first step to estimate the validity and reliability of social well-being questionnaire.

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Introduction

Health is a multidimensional concept and in its definition provided by "World Health Organization", three physical, psychological and social dimensions have been referred [1]. Social Well-being Scale is different from public health scale. Social well-being is associated with the ability to adapt and primarily measure of performance, quality of life and sense of social acceptance [2]. Goldsmith defines social well-being as "assessment of an individual's positive and negative significant behaviors in relation to others" and introduces it as one of the most basic health indicators of any country which will measure an individual's effectiveness in society [3]. Social dimension of health includes the levels of social skills, social functioning and an individual's ability to recognize himself as a member of the larger community. In assessment of social well-being, an individual's relations in social relations network have been paid attention [4]. According to Keyes's theory, social well-being has 5 aspects [1] as follows:

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1. Social cohesion: an individual's evaluation of quality of his relations in the community and social groups is called social cohesion. Person who enjoys social cohesion, feels closer to his community and considers his social group as a source of calm and confidence. In Keyes's social well-being questionnaire, this aspect is evaluated by following questions:
2. Social acceptance: people who enjoy this aspect of the health, understand community as a public and general set formed by different individuals and trust others as kind people with capacity and they believe that people can be effective and industrious. In social acceptance, a person has positive attitude and good feeling to self and previous life and he accepts all aspect of self despite having weaknesses and disabilities.
3. Social adaptation: social adaptation is understanding of quality, organization and performance of an individual's social world. Health people socially tries to know more about the world around himself and is interested in social projects and he feels that he is able to understand the events around himself. Social adaptation is equivalent to the concept of mastery of the environment and totally, to see the world as logical and intelligent and understandable and predictable thing.
4. Social participation: it is a belief that according to it, a person knows himself as critical member of community and thinks that he has valuable things to offer to society. Social participation mean that an individual thinks that community consider his works valuable and effective in public wellbeing.
5. Social prosperity: Social prosperity includes evaluation of potential ability and evolutionary path of community and believing in that the community is evolving gradually and have some potential abilities of positive evolution identified through social institutes and citizens.

Aging as the last period of human life, depending on the type of society in which one lives, is along with many differences in terms of quality and quantity. In Iran, social dimensions of health, particularly vulnerability of the elderly in the social and psychological areas, have been paid less attention than physical aspects [5]. It is expected that up to 2050, 80% of people are old in the developing countries [6]. Iran's population is also undergoing rapid demographic changes and its population age pyramid is being inverted [7]. The problems related to old age and aging not only will lead to higher clinical and economic burden, but also threat the quality of life and social well-being of the elderly [8]. This questionnaire is valid and reliable for assessing social wellbeing but no standard version in Persian was found in order to determine the psychometric properties of this tool so the researchers decided to validate the psychometric properties of this version in the targeted group in Iran in 2015.

Method

Participants: this research is the first study performed to examine the psychometric properties of the social well-being questionnaire among the elderly in Iran. The first part of this study was published in the Journal of Isfahan Medical School [5]. This questionnaire was examined on two groups of the elderly (home residents and residents of nursing home). The study population included all people over 60 years who were living at homes and in nursing homes in Tehran in 2015. Sample size is 400 (200 old people who lived at homes and 200 old people who lived in Kahrizak and private nursing homes). Inclusion criteria were being older than 60 years, experiencing at least two years residence in the center, having mental health, lack of Alzheimer's disease and having willingness to participate in this study. The samples were selected by cluster random sampling method. Tehran city was divided into 5 northern, southern, eastern, western and center areas and some points were selected in each area. Several municipality districts were selected from each area and then several streets and alleys were selected in each districts, then researchers referred to houses where an old person lived at and he/she was interested to participate in the study and finally the researchers explained some notes and the questionnaires were filled out. In order to observe moral considerations in the elderly, the consent was obtained from them. The data was analyzed using SPSS V.19 software and Amos software.

Reliability

Internal consistency was tested to measure the reliability of SWBS questionnaire. Cronbach's alpha was applied to assess internal consistency. Cronbach's alpha of 0.7 was considered as fair; 0.7-0.8 as acceptable and 0.9 as excellent [1].

Sample size:

Since this was a secondary analysis, the sample size was not determined, but according to rule of thumb, 10 subjects per item were assumed to be adequate to assess the relationship [11]. A total of 400 subjects were higher than the optimal value proposed by Nunnally.

Statistics

We used AMOS 18 to assess the construct validity of SWBS questionnaire and maximum likelihood method was used to estimate the parameter. The comparative fit index (CFI), Tucker-Lewis Index (TLI), and the root mean square error of approximation (RMSEA) were applied to determine whether the 6-factor model was fitted to the data or not. A value of 0.90 or greater was recommended for CFI and TLI indices and value less than Byrne *BM. 2013. Structural equation modeling with AMOS: Basic concepts, applications, and programming, Routledge p:263*.0.08 was considered to RMSEA [12]. We also

considered a cut-off of 0.4 for the factor loading as used by (Hagger and Orbell 2005). Marsh and Hocevar [13] showed that chi-square to degrees of freedom ratio (χ^2/df) less than 5 is acceptable.

The measurement tools

Social well-being questionnaire: it includes 20 questions measuring 5 components of social well-being (social cohesion, social prosperity, social acceptance, social participation and social adaptation). The validity and reliability values estimated in different studies imply that this tool can be effectively used in the studies on social well-being in the targeted population [1].

1. Social cohesion: this dimension is measured in the Keyes's social well-being questionnaire with following questions:

- I do not have a sense of belonging to something that I called society. (-)
- I feel close to other people in the community. (+)
- My community is a source of comfort. (+)

2. Social acceptance: this dimension is measured in the Keyes's social well-being questionnaire with following questions:

- Those who oblige, will not expect anybody to compensate. (+)
- People are indifferent to the problems of others. (-)
- I believe that the people are kind. (+)

3. Social adaptation: : this dimension is measured in the Keyes's social well-being questionnaire with following questions:

- The universe is very complicated for me. (-)
- I cannot understand what is happening in the world. (-)

4. Social participation:

- I have valuable things to offer the world. (+)
- My daily activities create no valuable achievement for my community. (-)
- I have no valuable thing to work with the community. (-)

5. Social prosperity:

- The universe becomes a better place to live for anyone. (+)
- Growth society is stopped. (-)
- For people like me, the society does not improve. (-)

Sharbatian, in a study on the students of Mashhad Payam Noor University, examined the reliability and validity of this questionnaire using Cronbach's alpha and estimated it 0.9. This is high value that shows the effectiveness of this tool in the study on social well-being in the community [9].

Results

In the present study, 400 old people (the old people were living in nursing homes and the old people were living at home) who lived in Tehran were studied. Their demographic information of each group was listed in **[table 1]**.

Table 1: Frequency distribution of demographic information of the both old people groups

Variable		The old people were living at homes (frequency)	The old people were living at homes (%)	The old people were living in nursing homes (frequency)	The old people were living in nursing homes
gender	Male	98	49	118	59
	female	102	51	82	41
Work	Employed	30	15	0	0
	Retired	114	57	79	39.5
	Unemployed	56	28	121	60.5
Education	High school diploma	112	56.5	132	66
	Diploma	46	23	38	19
	Associate degree and higher	41	20.5	30	15
Age	60-69	120	60	90	45
	70-80	70	35	85	42.5
	Older than 80	10	5	25	12.5

To test whether the original five-factor structure of social well-being could be replicated in Iranian old people groups, the Factor loading and reliability are listed in [table 2].

Table 2: Factor loading and reliability

Construct	Items		Factor Loading	Cronbach Alpha
social prosperity	1	Society is constantly changing.	0.48	0.64%
	2	Society is a useful place for people.	0.69	
	3	Social progress is meaningless	0.52	
	4	Today the world is a better place for the life of every person	0.69	
'social adaptation'	5	Understanding what happens in the world is difficult for me	0.58	%33
	6	Social organizations such as law and government is ineffective in my life	-0.22	
			α	

	7	It is difficult to predict what will happen in the future	0.66	
'social cohesion	8	I am belonging to a set called community	0.5	%0.71
	9	I am an important part of our community.	0.75	
	10	People valorize me as a person	0.73	
'social acceptance'	11	People are trustworthy.	0.60	%0.70
	12	I think people are kind.	0.81	
	13	Most of culture are so strange and alien that I never understood.	0.20 α	
	14	I think people are self-centered.	0.16 α	
	15	Nowadays, people have become dishonest.	0.32 α	
'social participation	16	I can resented valuable works to the world.	0.40 α	0.92
	17	Just researchers can understand what is happening around them/	-0.22 α	
	18	My daily activities have no valuable results for the community.	-0.85	
	19	I have no valuable product to share in the community.	-0.92	
	20	I have no required time and ability to provide valuable product to the community.	-0.91	

The original model displays a poor fit ($\chi^2/df = 4.001$, CFI = 0.88, GFI = 0.86, and RMSEA = 0.87), as shown in [table 3]. Six items with low factor loading were removed to improve the fitness of model [table 3].

Table 3: Fit indices and invariance analysis

	Model details	χ^2/df	RMSEA	CFI	GFI
Referent Model (Miller)	Four-factors model	4.001	0.87	0.88	0.864
Modified Model, female	6 item removed to improve the model	3.36	0.07	0.9	0.91

The results of confirmatory analysis of SWBS questionnaire revealed acceptable fitness of modified model (CFI = 0.91, GFI = 0.07 and $\chi^2/df = 3.36$). The kurtosis and skewness ranged from -0.82 to 1.76 and -1.20 to 0.778 for all 45 items, respectively. The value of alpha reliability coefficient was 0.64 % for 'social prosperity', 0.33% for 'social adaptation' factor, 71 % for 'social cohesion' factor, 0.70% for 'social acceptance' factor, 0.92 % for 'social participation in [table 4].

Table 4: Factors and factor correlation

		1	2	3	4
1	social prosperity	-0.007 0.888			
2	'social adaptation'	0.328 0.001	-0.12 0.810		
3	social cohesion	0.411 0.001	-0.46 0.363	0.395 0.001	
4	'social acceptance'	0.242 0.001	0.037 0.465	0.369 0.001	0.131 0.009
5	social participation				

Discussion

To the best of author's knowledge, no prior study has assessed the factorial structure of Keyes's 20-item social well-being questionnaire. Overall, a good fit was obtained after deleting six items with low loading (CFI = 0.91, GFI = 0.95, RMSEA = 0.07 and $\chi^2/df = 3.36$). Cronbach's alpha coefficients of subscales ranged from 0.33 to 0.92. Whole questionnaire Alpha Value was 0.78 that is acceptable.

Hashemi et al. (2014) [14] conducted a principal components analysis and a varimax rotation on a sample of university student. Their aim was to determine the factor structure of Keyes's short-form social well-being questionnaire. A four-factor structure emerged, explaining 62% of total variance. Then they conducted a confirmatory factor analysis to test four factor model and showed an acceptable fit (RMSEA = 0.06, AIC = 279.94, CFI = 0.91, AGF I = 0.90, GFI = 0.93, $\chi^2/df = 3.49$). They also tested original model (five structure factor) using confirmatory factor analysis. The original model was to have satisfactory fitness (RMSEA = 0.05, AIC = 250, CFI = 0.91, AGF I = 0.91, GFI = 0.94, $\chi^2/df = 2.12$). A five-factor structure is superior to the four factor analysis. Cronbach's alpha ranged from 0.34 to 0.63. Whole questionnaire Alpha Value was 0.81 that is acceptable. Another study by Miaoyun in Chinese [15] conducted confirmatory factor analysis and showed an adequate fit (RMSEA = 0.058, AIC = 328.92, CFI = 0.94, $\chi^2/df = 3.11$). The strengths of the present study is that it is the first study assessing Keyes's 20-item social well-being questionnaire on sample of Older People Living at home and those Living in Nursing Home.

Conclusion

Although three of five subscale had an Alpha less than the criterion value and also six low factor loadings were deleted, this work is meaningful and it can be considered as the first step to estimate the validity and reliability of social well-being questionnaire.

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