



Validity and reliability of the Persian version of the Adapted Social Capital Assessment Tool: A sample of Iranian older people

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Abstract

Background: Social capital and social participation (SP) have a significant role in improving the health of older adults. The current study aimed to examine the psychometric properties of the Persian short version of the Adapted Social Capital Assessment Tool (SASCAT) in older adults.

Methods: A total of 414 community-dwelling older people (aged 60 years or older) in Aran and Bidgol city were selected using a multistage cluster sampling method. Construct validity was evaluated by exploratory and confirmatory factor analyses. The tool's reliability was assessed using Cronbach's alpha and interclass correlation coefficient. The Pearson correlation coefficient test was used to evaluate the convergent validity of the instrument between WHO-5 and SASCAT. SPSS 24 and AMOS 24 software were used for statistical analysis.

Results: The three factors of received social support (RSS), SP, and social trust (ST) were extracted from exploratory factor analysis (EPA), explaining 66.33% of the total variance. The CFA revealed that the SASCAT structure model was valid (CMIN/DF=2.36, GFI=0.957, CFI=0.931, RMSEA=0.081). According to the convergent validity evaluation, there was a significant positive relationship between social capital and psychological well-being ($r=0.28$, $P<0.01$). Moreover, the Persian version of the social capital tool had acceptable internal consistency and test-retest reliability.

Conclusion: The 8-item social capital tool is a valid and reliable measurement tool that can be used in future studies to examine this concept's status among older Iranian people.

Keywords: Older adults, Social capital, Validity, Reliability, Iran

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Introduction

Aging as an important global phenomenon (1) is not just getting old; it is a natural human growth and development process, bringing about physiological, psychological, and social changes (2). These changes can affect human health (3). Social capital is a social factor that can predict the health of older people (4). Social capital is the network and social relationships a person forms with others (5). Social relations, especially with family members, neighbors, and other members of the community, have a significant positive impact on the lives of older adults (6). More social relations and cohesion in a society can help its members cope better with their social roles (7).

Studies conducted on social capital in older adults indicate the positive impact of social capital on reducing loneliness and depressive symptoms (8), improving

health and well-being (9), and receiving more social and instrumental support (10). Therefore, social network support can help older people deal with their illnesses, dependence, and loneliness more efficiently and stay happy and optimistic about the rest of their lives (11).

Considering the role of social capital in the health and quality of life of older adults (12), it is necessary to investigate the status of social capital among older adults with a valid tool (11, 13).

The literature shows a gap between the concept of social capital and its measurements (5). In addition, most of the social capital measurements have been validated among young people and are less specific to older adults (5,14). Most of these tools are also related to developed and Western countries (15). The accurate evaluation of social capital among older people (16) needs a short, suitable, and



valid tool; therefore, we attempted to assess the cultural adaptation of the short version of the Adapted Social Capital Assessment Tool (SASCAT) developed by the World Bank (17) and piloted in Peru and Vietnam (18). The items of this instrument are about participation in different types of social organizations and informal networks. The framework of social capital in this tool includes two general dimensions of structural and cognitive social capital. These two dimensions measure membership in groups and social networks, neighborhood connections, social support, trust, and voluntary participation in the community. The structural dimension includes the social interactions that lead to access to resources while the values and norms are known as the cognitive dimension. In other words, the structural dimension refers to the extent and intensity of ties or social activities, while the cognitive dimension includes the perception of support, reciprocity, sharing, and trust (19). However, this explanation does not clearly state the difference between the cognitive and structural dimensions, and the concepts in these two dimensions are interchangeable. It can be said that individuals who have relationships and trust each other can be considered a social structure. Therefore, in conceptualizing and measuring social capital, actions are not necessarily pure structures; also structural dimensions are not pure individual qualities (20). Thus, it is necessary to conduct a factor analysis to investigate the dimensions of social capital in any culture.

Although this tool has been translated into Farsi and its translated version has been used in several studies in Iran (21,22), no references have mentioned the validity and reliability of the translated tool. Therefore, this study investigates the validity and reliability of the SASCAT among older adults living in Aran and Bidgol city in Esfahan, Iran.

Methods

This cross-sectional study was conducted in 2020 among a sample of 414 older adults (aged 60 years and older) in Aran and Bidgol, Iran. The minimum sufficient sample size for an exploratory factor analysis (EFA) is 200 people, and the required sample size for a confirmatory factor analysis (CFA) is more than 200 people (23). Therefore, we aimed at 400 samples, and finally, 414 samples were collected.

After obtaining informed consent, a structured questionnaire (SASCAT) was used by trained interviewers, each interview lasting for about 30 minutes. The inclusion criteria were being 60 years old and above, being a resident of Aran and Bidgol city, and being able to communicate.

This instrument is a short form of the Adapted Social Capital Questionnaire, which was taken from an instrument developed by a team from the World Bank (17). The 11-question form includes two dimensions, cognitive and structural, which were used in Harpham's study (24) and then modified in the Young Lives (YL)

research project (<https://younglives.younglife.org/>). In a study in Vietnam and Peru, De Silva et al emphasized the content and construct validity of the modified form with nine questions (18). The 9-question form has been translated into Farsi and used in the study of Khajedadi et al (21), but the validity was not reported in that study. To conduct factor analysis, we used the SASCAT items recommended by De Silva et al to obtain factors and items suitable for the conditions of older people.

The WHO-5 Index is a short self-report measure with five questions assessed on a 6-point Likert scale. It assesses a person's perception of their mental well-being during the past two weeks and can be used in all age groups. The reliability of this tool in the current study was good (Cronbach's alpha = 0.88).

To examine construct validity, exploratory factor analysis (EFA) and principal component analysis (PCA) were conducted on two separate samples (each sample included 207 individuals, with a total sample size of 414) using IBM SPSS version-24 and IBM SPSS AMOS version-24, respectively. The EFA determined the number of SASCAT tool factors. Factors with an eigenvalue greater than 1 were maintained, and the varimax rotation method was used. In the CFA analysis, the fit indices of the SASCAT model were assessed, including minimum discrepancy function by degrees of freedom (CMIN/DF), goodness of fit index (GFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA).

Some studies report a significant relationship between social capital and psychological well-being (25,26). Thus, to understand the convergent validity of the instrument, the Pearson correlation coefficient test was used to evaluate the relationship between WHO-5 and SASCAT.

The reliability of the tool was measured by internal consistency and stability. Internal consistency was evaluated by Cronbach's alpha coefficient using the IBM SPSS version-24 software. The values above 0.7 were acceptable. Stability was assessed by the test-retest technique. Twenty older people completed the questionnaire twice at a two-week interval, and then the intraclass correlation coefficient (ICC) was computed.

Results

Participants' mean age was 70.43 ± 8.84 . About half of the participants were women (48.6%). Most of the participants lived only with their spouses (44.2%), and 16.7% were alone. Also, 98.1% were satisfied with their neighborhood.

The Kaiser-Meyer-Olkin test ($KMO = 0.578$) indicated that implementing factor analysis in the studied sample was appropriate and acceptable. The results of Bartlett's test also showed the dimensionality of the social capital tool in older people ($\chi^2 (28) = 362.783$, $P < 0.001$). In the implementation of factor analysis, the items that had a factor load less than 0.4, had a high factor load on several factors, or were placed on a conceptually unrelated

factor were eliminated. Accordingly, one item (item 9) was removed, and as a result, eight items remained (Supplementary file 1). The items yielded three factors as follows:

- First factor: Received social support (RSS) from the total scores of questions 2 and 3.
- Second factor: Social participation (SP) from the total scores of questions 1, 4 and 5.
- Third factor: Social trust (ST) from the total scores of questions 6, 7, and 8 (Table 1).

According to the final results, the percentage of the total explained variance was 66.33. The first factor explained 25.50%, the second factor 21.83%, and the third factor 18.99% of the total variance.

CFA and Amos Graphics software version 24 were used to assess the construct validity of the three dimensions of

SASCAT extracted from EFA.

CFA revealed that the three-factor structure model was valid (CMIN/DF=2.36, GFI=0.957, CFI=0.931, RMSEA=0.081) (Table 2, Figure 1).

The Pearson correlation coefficient test results showed a significant positive relationship between social capital and psychological well-being ($r=0.28$, $P<0.01$).

The ICC for the dimensions of RSS, SP, and ST was 0.800 ($P<0.001$), 0.700 ($P<0.01$), and 0.300 ($P>0.5$), respectively. Based on Cronbach's alpha coefficient, the reliability of the social capital tool was acceptable. Cronbach's alpha coefficients were reported as $\alpha=0.6$ for RSS, $\alpha=0.6$ for SP, $\alpha=0.648$ for ST, and $\alpha=0.627$ for total social capital.

Discussion

Table 1. Summary of items and factor loadings for principal component analysis (n=207)

Numbers	Items	Component		
		1	2	3
Item 4	In the last 12 months, have you joined other community members to address a problem or common issue? 0=no, 1=yes	0.902		
Item 5	In the last 12 months, have you talked to a local authority or governmental organization about problems in this community? 0=no, 1=yes	0.881		
Item 1	In the last 12 months, have you been an active member of any of the following types of groups in your community? – Work related/trade union – Community association/co-op – Women's group – Political group – Religious group – Charity association – Sports group – Other: specify Score between 0 and 8	0.636		
Item 7	Do the majority of people in this community generally get along with each other? 0=no, 1=yes		0.838	
Item 6	In general, can the majority of people in this community be trusted? 0=no, 1=yes		0.774	
Item 8	Do you feel you are really a part of this community? 0=no, 1=yes		0.652	
Item 2	In the last 12 months, did you receive any emotional help, economic help, or assistance in helping you know or do things from the group? – Work related/trade union – Community association/co-op – Women's group – Political group – Religious group – Charity association – Sports group – Other: specify Score between 0 and 8			0.821
Item 3	In the last 12 months, have you received any help or support from the following? This can be emotional help, economic help, or assistance in helping you know or do things. – Family – Neighbors – Friends who are not neighbors – Community leaders – Religious leaders – Politicians – Government officials/civil service – Charitable organizations/NGO – Other: specify Score between 0 and 9			0.787

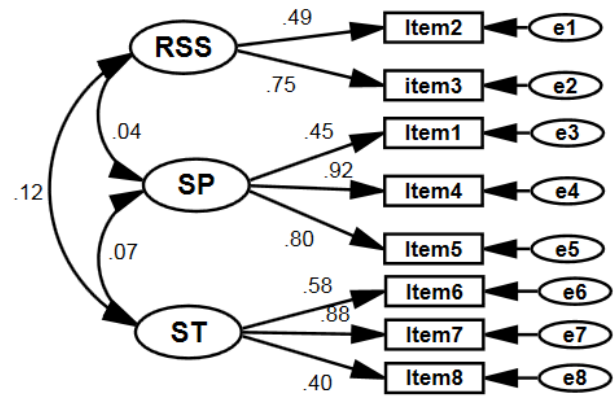
Table 2. Dimensions and factor loading related to each item in the measurement model

Item	Components	SE	CR	Beta	P
Item 2	RSS	0.175	5.940	0.489	0.001
Item 3				0.749	0.001
Item1	SP	0.222	5.656	0.448	0.001
Item 4				0.921	0.001
Item 5				0.802	0.001
Item 6	ST	0.176	6.205	0.577	0.001
Item 7				0.879	0.001
Item 8				0.397	0.001

Abbreviations: RSS, received social support; SP, social participation; ST, social trust; CR, critical ratios; SE, standard error.

This study aimed to evaluate the psychometric properties of the social capital tool in Iranian older adults. The eight questions of the social capital tool yielded three main factors: RSS, SP, and ST. The validation results of the SASCAT questionnaire were not in line with those achieved in other countries (18,27), and the item about perceived fairness was removed because it did not load on any extracted factors. The results showed that the social capital among older adults tool had good psychometric properties, including high internal consistency (reliability) and acceptable construct validity. Like other studies (25), a significant positive correlation was found between social capital and psychological well-being, confirming its convergent validity.

One of the dimensions of social capital extracted from factor analysis in this study was RSS. This factor included emotional, economic, and informational assistance from individuals and groups, including family, neighbors, friends, community, political, religious, sports, etc. groups. Also, in an instrument developed by Koosheshi et al and inspired by the theory of Patnam and Coleman, social support was extracted as one of the main dimensions (28). The changes made during old age sometimes lead to severe physical and mental deficiencies and take away the power to deal with difficulties; so, at this time, the expectation of social support is a legitimate expectation based on social justice (7). The other factor was SP, which included joining social groups and having active membership. The results showed that most of the participants were members of more than one social group and participated in them. The study of De Silva et al achieved similar results (18). Establishing social relations with family members, relatives, and friends is essential in old age, positively affecting older people's health (29). The last factor was ST, which covered concepts such as getting along, trusting group members, and trying to solve the community's problems. In the study of Eftekharian et al, which investigated the validity and reliability of the Onyx scale, SP and trust were identified as the two main

**Figure 1.** The results of confirmatory factor analysis of the 8 questions of social capital instrument. Abbreviations: RSS, received social support; SP, social participation; ST, social trust

dimensions (11). People tend to trust those with longer social relationships more. This is seen more strongly in older people, and the various experiences in life cause them to trust with more investigation and accuracy.

This study was conducted in 2020 during the outbreak of COVID-19. The conditions of this pandemic could have changed the SP and social support received by older persons and affected the reliability of the social capital tool. Consequently, more assessment is necessary under normal circumstances.

Conclusion

Social capital does not have the same form in all societies and all age groups. In this research, the researchers attempted to determine the validity and reliability of the Persian version of the SASCAT social capital tool in the elderly age group in Iranian culture. This tool is a short and easy measurement tool for older people, considering their physical and mental limitations, and it can be used by researchers in future studies.

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Authors' Contribution

Conceptualization: Nasibeh Zanjari, Zahra Aliakbarzadeh Arani.

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Competing Interests

The authors have no conflict of interest to disclose.

Ethical Approval

The study protocol was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences, Tehran, Iran (code: IR.USWR.REC.1399.125). First, the aim of the study was explained to the participants. Then, they were ensured that their information would remain confidential. They were also informed that participation was voluntary and they could leave whenever they wanted. Finally, each participant signed the informed consent form.

Funding

University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Supplementary Files

Supplementary file 1. Persian version of the social capital tool

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