

Factors Associated with Subjective Successful Aging Among Iranian Older Adults: A Cross-Sectional Analysis

Abstract

Background: Subjective Successful Aging (SSA) refers to individuals' self-rating of their aging process. Demographics, socioeconomic status, and health conditions of older adults can shape their aging process and their self-evaluation of it. This study aimed to explore the status of SSA and its related factors among a sample of Iranian older adults in 2022. **Materials and Methods:** This cross-sectional study was conducted with 410 older adults in Bojnurd, Iran, who were selected by a multi-stage sampling method. Data were collected through a four-part questionnaire consisting of objective socioeconomic status, subjective socioeconomic status (Subjective Social Status (SSS) and Perceived Income Adequacy (PIA)), health status (Self-Related Health (SRH) and number of chronic diseases), and the SSA six-question scale. The data were analyzed using SPSS (version 22). Bivariable and multiple linear regression analyses were run to identify the factors associated with SSA. **Results:** The mean (standard deviation) age of the participants was 68 (7.33). The mean (standard deviation) of the SSA score was 60.69 (17.85). Only 132 individuals (32.20%) considered themselves successful. According to regression analysis, among the investigated variables, the predictors of SSA were SRH ($\beta = 0.40, p < 0.001$), PIA ($\beta = 0.23, p < 0.001$), SSS ($\beta = 0.18, p < 0.001$), and age ($\beta = -0.11, p = 0.009$), respectively. **Conclusions:** Regarding the low percentage of participants who considered themselves successful seniors, it is necessary to pay more attention to promoting the aspect of successful aging and its related determinants. According to the results, promoting perceived health and reducing financial concerns, especially in older people, could finally increase SSA among Iranian older adults.

Keywords: Aging, health status, socioeconomic status

Introduction

Considering the increase in life expectancy in the world, many people will reach old age. Therefore, according to the World Health Organization (WHO), the number of older people over 60 years of age will increase from 1 billion in 2020 to more than 1.4 billion in 2030. In the same way, by 2050, the number of older people will double to 2.1 billion.^[1] Accordingly, studies on extending life expectancy along with older adults' health and mental-psychological well-being have become significantly important. Successful aging is a concept related to older adults' optimal condition during old age, which covers other mentioned concepts, including healthy aging, positive aging, active aging, and aging well.^[2,3] The history of the concept of successful aging originates from Havighurst's theory of active aging

in 1961.^[4] So far, various descriptions and models have been suggested regarding successful aging. Rowe and Kahn's^[5] (1987) model is one of the most well-known models of successful aging. Based on this model, successful aging has three objective criteria, including the absence of disease or disability, optimal physical and cognitive function, presence in the community, and social interaction. However, recently, some studies have indicated that despite defects in the physical and objective criteria of successful aging, older adults consider themselves members of the group of successful seniors. For instance, a study indicated that although only 11% of the individuals were considered successful seniors according to the objective criteria, more than 77% of them reported that they considered themselves successful seniors.^[6] Thus, successful aging has two objective and subjective dimensions. In the subjective

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dimension, the individual's self-rating of successful aging is analyzed instead of being measured based on predefined criteria. Hence, Strawbridge *et al.*^[7] (2002) defined Subjective Successful Aging (SSA) as the level of satisfaction and positive perception of successful aging status based on the older adult's self-evaluation and judgment. From this perspective, successful aging positively correlates with the objective dimension and is relatively moderate (60%).^[3] Studies revealed that the level of SSA has a significant relationship with the individual's social and personal activities, quality of life and resilience,^[8] absence of depression and lower disability in daily activities,^[9] absence of feeling loneliness, satisfaction about life, and subjective assessment of health,^[6] and can significantly influence the formation of positive emotions, a decrease of negative feelings, and improvement of emotional regulation strategies.^[10] Furthermore, SSA is one of the important factors of mortality in older adults.^[11] Therefore, it has drawn the attention of gerontologists more than before.

In recent years, research on the role of socioeconomic status on well-being, health, and disease has been increasing worldwide.^[12] Demographics and the subjective and objective socioeconomic status of people can shape the wide range of their aging experience.^[13] Previous studies showed that socioeconomic and health status can influence SSA among older adults.^[3,7,8] Strawbridge and colleagues^[7] (2002) showed that SSA is higher among women, younger people, and those with no financial problems. However, in another study, even though women experience more chronic conditions, greater pain, and poorer functional ability than men, there was no significant difference in SSA between women and men. What is more, this study demonstrated that age was associated with the components of objective success aging (functional abilities and number of chronic conditions) but had no significant relationship with the SSA of the participants.^[3] As such, it cannot be assumed that the impact of different socioeconomic status measures and health status will be the same for all outcomes and all groups of older adults in different societies.^[13] Therefore, it is necessary to address the demographics, socioeconomic, and health factors related to SSA separately.

The Iranian census shows that the population of individuals aged 60 increased from 3.5% in 1956 to 9.3% in 2016. Predictions suggest that this demographic will constitute 21.7% of the Iranian population by 2050.^[14] Thus, considering the recent increase in life expectancy in Iran and the expected increase in the percentage of the older adult population in the future, it is necessary to pay more attention to the factors related to successful aging. There have been multiple studies on successful aging in the context of Iran. For instance, Zanjari and Momtaz studied successful aging using a multi-dimensional tool comprising 54 questions (regarding psychological

well-being, social support, financial-environmental security, spirituality, functional health, mental-physical health, and health-related behavior). The results revealed that 11.2% of the older adults studied met the successful aging criteria.^[15] However, since the measurement criteria included several physical and objective (mental and physical health) aspects, a portion of the older adults who considered themselves successful seniors may not have entered the successful older adults' group, and the percentage of people who considered themselves successful probably aged more than this. Reviewing the pertinent literature indicates that there has been no study on successful aging in Iran relying on older adults' subjective dimensions and self-ratings on whether they consider their aging successful or not; also, the relationships between demographic, socioeconomic, and health factors related to SSA among Iranian people have not been identified yet. However, subjectively rated successful aging takes into account respondents' perceptions, judgments, and reflexivity of SA, which is therefore sensitive to cultural specificities and variations in social norms.^[16] With the above-mentioned points in mind, it can be realized that there is a necessity to assess it in different societies. Therefore, this study aimed to explore the status of SSA and its related factors among a sample of Iranian older adults.

Materials and Methods

This community-based cross-sectional study was conducted with 410 individuals aged 60 and older in Bojnourd, Iran, during the spring and summer of 2022. The sample size was calculated using the prevalence of SSA among older adults in a similar study^[7] (50.3%) and a 5% (d) margin of error. After adding the 5% non-response rate, the total sample size for this study was 410.

Considering Bojnourd City's segmentation into seven districts, the participants were recruited using a multistage cluster sampling method. Each city district was considered a cluster, and the sample size in each cluster was determined by the quota sampling method. Next, two neighborhoods were randomly selected from each district. Then, the interviewers (two men and five women with bachelor's degrees in social sciences or psychology) entered the selected districts and completed the questionnaires with community-dwelling older adults in the form of face-to-face interviews. Thus, there was no missing data in the completed questionnaires. The interviewers described the purpose of the study for the older adults. Afterward, those individuals who could speak and adequately communicate with the interviewers and agreed to participate in the study constituted the total sample of the study. The exclusion criteria were dissatisfaction with participating in the research and incomplete completion of the questionnaire.

The data collection tool was a questionnaire consisting of four parts. The first section was devoted to demographic information and objective socioeconomic status^[17]

including age, sex (male/female), marital status (single/married), number of children (0–4/5 and more), education level (illiterate/primary school/middle school/diploma, and college), job situation (housewife/retired/employed/unemployed), and living arrangement (with spouse or children/alone/with others). The second section related to the subjective socioeconomic status of the participants, including Subjective Social Status (SSS) and Perceived Income Adequacy (PIA). As for the evaluation of SSS, we used the MacArthur Scale of Subjective Social Status.^[18] This scale had a single question by which the individuals estimated their social status in society based on a picture of a ten-step ladder. Higher levels selected by the older adults indicated higher SSS scores. Scores of one to three indicated a low social status, four to seven indicated a moderate social status, and eight to ten indicated a good social status. Also, PIA was investigated by asking the participants whether they had enough money to meet their needs, with a five-point Likert scale ranging from *completely* to *not at all*. A binary variable was then created to categorize the participants as either income insecure (rating of income meeting their needs “*not at all*,” “*a little*,” or “*moderately*”) or income secure (rating of income meeting their needs “*completely*” or “*mostly*”).^[19] The third section is related to health status. Health status was investigated using two variables: first, the number of chronic diseases that the older adults were experiencing when completing the questionnaire, and second, self-rated health (SRH). The SRH assessment was conducted using a single-question scale, asking, “*How would you assess your general status of health?*” Response options were *very good*, *good*, *fair*, *poor*, and *very poor*. The first two response options were regarded as good, and the last two as poor SRH.^[20] The fourth section investigated SSA. So far, various criteria, including the single-question scale of success level with the sentence “*I am aging successfully (or aging well)*,”^[8-10] the three-question scale prepared by Pruchno *et al.*,^[21] and the six-question scale of Fowler *et al.*^[22] were used to investigate SSA. In this study, we used the six-question scale.^[22] This scale included six items; three were based on Pruchno *et al.*'s study (2010),^[21] and the other three were prepared by Fowler *et al.*^[22] The reliability of this scale was reported as 0.84. Due to the lack of validity of this scale in Iran, the study first investigated the structure validity of the SSA scale.

So, after obtaining permission from the designers of the scale,^[22] it was translated into Persian following the proposed method by the WHO.^[23] Then, a panel of specialists (including three gerontologists, two psychologists, and two social sciences specialists) analyzed the content validity of the questionnaire using the Content Validity Index (CVI). The obtained CVI index for every item of the SSA scale was 1, which was a suitable value.^[24] Finally, a cognitive interview was conducted using the verbal probing method with 10 older adults (six females, mean age =

66.2 years), and the necessary changes were made to the translated version. Moreover, the one-factor construct of the SSA-6 has been supported by both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The CFA fit indices were satisfactory (CMIN/DF = 2.49, RMSEA = 0.062, CFI = 0.995, GFI = 0.997). Also, the internal consistency of the questionnaire was calculated using Cronbach's alpha. The overall consistency of the scale (0.871) indicated an acceptable level of reliability. Therefore, the six-question scale of SSA had acceptable reliability and validity in Iran. Afterward, the participants answered it using a Likert scale (for questions 1-3: *poor* = 0, *fair* = 1, *good* = 2, *very good* = 3, and *excellent* = 4; and for questions 4-6: *strongly disagree* = 0, *disagree* = 1, *neutral* = 2, *agree* = 3, and *strongly agree* = 4). Higher scores indicated higher levels of SSA. After obtaining the SSA scores (minimum = 0, maximum = 24), the data were normalized, and each data value was converted to a value between 0 and 100. Considering a similar study, gaining a minimum of 70% of the scores was determined as the successful aging criterion.^[8] Therefore, after normalizing the score, the participants who achieved 70 or higher were classified as successful seniors.

The gathered data were analyzed using SPSS software (version 22). To compare the differences between the two groups, a *t*-test was run. Also, a one-way ANOVA was used for comparing differences among multiple groups. We conducted multiple linear regression analyses to explain variations in our target variable (SSA). In this process, only the variables that had shown significant differences in SSA were included in the linear regression model. Any $p < 0.05$ was considered statistically significant.

Ethical considerations

The present study was part of a PhD dissertation and was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (IR.USWR.REC.1400.003). Written informed consent was obtained from the participants who agreed to participate in the study according to the provisions of the Declaration of Helsinki. The participants were allowed to leave the study at will.

Results

The mean (standard deviation) age of the participants in this study was 68 (7.33), and the maximum was 92 years. Of the participants, 174 were male (42.43%), and 284 were married (69.23%). Table 1 presents other demographic information. The mean (standard deviation) of the SSA score was 60.69 (17.85). A total of 307 (74.90%) participants had scores higher than 50, but only 132 (32.20%) participants achieved a minimum score (≤ 70) and considered themselves successful seniors.

According to the *t*-test and ANOVA results shown in Table 1, there was a significant difference in the SSA score among the factors of age, number of children, education

Table 1: The relationship between the independent variables with subjective successful aging

Demographic Variables	n (%)	Mean (SD)	Results of Test	
Age*				
60–74	335 (81.70)	61.77 (17.33)	<i>t</i> =2.15	<i>p</i> =0.034
75 and older	75 (18.30)	55.12 (23.68)		
Number of children*				
0–4	198 (48.29)	63.40 (17.86)	<i>t</i> =2.98	<i>p</i> =0.003
5 and more	212 (51.71)	58.01 (19.33)		
Marital status*				
Married	284 (69.23)	61.97 (18.67)	<i>t</i> = -2.15	<i>p</i> =0.030
Single	126 (30.73)	57.45 (23.53)		
Gender*				
Male	174 (42.43)	62.04 (18.40)	<i>t</i> =1.33	<i>p</i> =0.083
Female	236 (57.56)	59.60 (19.07)		
Education**				
Illiterate	134 (32.68)	55.33 (19.34)	<i>F</i> (3)=6.65	<i>p</i> <0.001
Primary school	124 (30.24)	62.70 (18.65)		
Middle school	55 (13.41)	57.17 (15.71)		
Diploma and college	97 (23.67)	67.12 (17.46)		
Job Situation**				
Housewife	168 (41)	59.91 (18.42)	<i>F</i> (3)=5.02	<i>p</i> =0.020
Retired	100 (24.40)	66.40 (18.60)		
Employed	72 (17.60)	65.18 (17.06)		
Unemployed	70 (17)	53.42 (20.25)		
Living arrangement*				
With spouse/children	315 (76.82)	61.01 (17.30)	<i>t</i> =-0.89	<i>p</i> =0.440
Alone or with others	95 (23.17)	59.21 (21.70)		
Number of chronic diseases**				
Without disease	87 (21.21)	67.02 (16.30)	<i>F</i> (3)=8.65	<i>p</i> <0.001
One disease	109 (26.58)	60.20 (17.91)		
Two disease	127 (31)	58.15 (19.32)		
More than two	87 (21.21)	57.77 (19.33)		
Perceived income adequacy*				
Secure	149 (36.34)	70.33 (14.10)	<i>t</i> =3.41	<i>p</i> <0.001
Insecure	261 (63.65)	56.41 (19.13)		
Subjective social status**				
Low	124 (30.24)	53.7 (19.82)	<i>F</i> (2)=21.04	<i>p</i> <0.001
Middle	244 (59.51)	61.2 (17.15)		
High	42 (10.24)	76.7 (13.27)		
Self-Rated Health**				
Good	176 (42.92)	70.12 (14.11)	<i>F</i> (2)=46.90	<i>p</i> <0.001
Fair	214 (52.20)	54 (17.50)		
Poor	20 (4.88)	45.20 (21.73)		

*An independent *t*-test was used for comparing differences between the two groups. **A one-way ANOVA was used for comparing differences among multiple groups

level, job situation, number of chronic diseases, marital status, PAI, SRH, and SSS. ($p < 0.05$).

To determine the influencing factors for SSA in older adults, multiple linear regression analysis was performed. Table 2 presents the results of the linear regression model, indicating the determinants of the SSA. Here is the regression model indicating that SRH ($\beta = 0.40, p < 0.001$), PIA ($\beta = 0.23, p < 0.001$), SSS ($\beta = 0.18, p < 0.001$), and age ($\beta = -0.11, p = 0.009$) could help to explain the variability of the SSA. So, people who considered

themselves to have a better health, social, and income status, as well as younger people, had a higher SSA. In this regression analysis, the adjusted R squared (R^2) value shows that the model with these four indicators explained 41% of all variability. As a result, the generated model was acceptable.

Discussion

This study aimed to investigate the level of successful aging according to the self-assessment of Iranian older

Table 2: Parameter testing results for linear regression for predicting subjective successful aging (n=410)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	p	Adjusted R ²
	B	Std. Error	β			
Job	-0.27	0.19	-0.06	-1.40	0.161	0.41
Subjective social status	1.28	0.31	0.18	4.17	<0.001	
Number of children	-0.50	0.37	-0.05	-1.36	0.176	
self-rated health	2.95	0.30	0.40	9.71	<0.001	
Marital status	0.22	0.38	0.02	0.59	0.551	
Number of diseases	-0.13	0.16	-0.03	0.83	0.492	
Education	0.01	0.17	0.01	0.06	0.625	
Perceived income adequacy	1.49	0.28	0.23	5.30	<0.001	
Age	-1.20	-0.46	-0.11	-2.63	0.009	

Subjective successful aging = $0.40 \times \text{Self-rated health} + 0.23 \times \text{Perceived income adequacy} + 0.18 \times \text{Subjective social status} + -0.11 \times \text{age}$

adults and the predictor factors among them. The results indicated that the predictors of SSA among the sample of Iranian older adults were SRH, PIA, SSS, and age.

Most of the participants considered their level of successful aging more than moderate; however, only 32.20% considered themselves successful seniors. Although there is no identical study in Iran to be compared with this result, it is less compared to other studies in another country.^[7-9] One of the reasons for this difference could be that the scales were not identical. However, this problem in Iranian older adults requires further research and more attention, especially considering the predictor factors of the current study.

Living arrangement and gender had no significant relationship with SSA, but other demographic variables, including age, number of children, education level, job situation, number of chronic diseases, and marital status, had a significant relationship with SSA. However, except for age, none of them predicted the SSA of older adults. Other studies also indicated that subjectively rated successful aging was not related to demographic variables such as gender,^[3,8] marital status, living arrangement,^[8] and individuals' education level.^[7,8] Older people viewed success as a process of adaptation rather than a state of being,^[25] which has more relationships with subjective assessment, including resilience, happiness, and optimism.^[26] In the current study, contrary to some studies,^[3,8] age had a significant negative relationship with SSA and could predict it. Previous studies indicated that increasing age is associated with some limitations for Iranian older adults, such as loneliness^[27] and a decrease in social participation and cognitive function,^[28] which can have an effect on SSA. Therefore, it is necessary to pay more attention to the SSA of Iranian older people with higher ages. The number of older adults' diseases was not a predictor of SSA. Accordingly, Montross *et al.*^[8] revealed that most older adults were of the opinion that suffering from physical diseases and disabilities were not significant factors influencing their perceptions of successful aging. Strawbridge *et al.*^[7] indicated that despite suffering from

chronic diseases, individuals could consider themselves successful older adults. Previous studies revealed that functional and physical health were not among the primary criteria for the successful aging of older Iranian adults. Other factors, including social and subjective well-being, such as a positive perception of aging and satisfaction with life, were among the significant factors of successful aging.^[29] Nevertheless, SRH was a related factor and predictor of SSA, indicating that perceived health status is more significant than actual health status. This finding is consistent with Ferri *et al.*^[30] Determinants of SRH in older adults include individual and cultural beliefs and health behaviors.^[31] In Iran, previous studies have shown that in addition to physical condition, other factors such as mental condition, spirituality, social relations, social class, and also the way of comparing oneself with peers can affect the SRH of older people.^[32] Among the other factors studied, PIA and perceived good social status were related to the perception of SSA and were its predictors. Another study on older adults from six countries with different income levels indicated that income adequacy was a significant factor in older adults' perceived well-being.^[19] Similar studies reported that income adequacy has a significant relationship with self-rated successful aging, as individuals with higher incomes reported more successful aging.^[7,9,30] According to Iranian older adults, income adequacy can reduce their concerns about living and healthcare costs,^[29] which in turn improves their sense of aging. Also, according to a study on older adults from five different countries, income adequacy directly correlates with other indicators, including SRH, life satisfaction, and quality of life.^[33] Accordingly, the perception of income adequacy to provide for their essential needs in old age is a significant factor contributing to their feeling of success in aging and other aspects of their lives. Studies have revealed that SSS is related to the income, education, and financial status of older adults and is also associated with their health and functional status, medical condition, mental health, and health-related behaviors. Individuals who report having lower social status are those with a weaker financial condition than others who also have health issues.^[34,35]

Mohaqeqi Kamal and Basakha's^[36] study in Iran indicated that older adults with better socioeconomic status have better health conditions. Based on theories of health behavior (including the transtheoretical model and social learning theory), individuals' social and financial status can influence their health behaviors and eventually affect their health.^[37] Accordingly, these factors can affect older adults' perceptions of successful aging. However, this study conducted the first assessment of the rate of SSA and its associated factors in Iran. Furthermore, it examined the credibility of the six-question SSA scale among older individuals in Iran. This scale is suitable for conducting additional studies in Iran. Nevertheless, this study is subject to some constraints. Initially, a cross-sectional approach was employed, which failed to show a causal association between SSA and independent factors. Furthermore, the study solely focused on older individuals residing in metropolitan areas while excluding older adults with severe illnesses and those living in rural regions, nursing homes, or hospitalized in medical facilities. Consequently, it does not apply to all older persons in Iran.

Conclusion

Regarding the low percentage of participants who considered themselves successful seniors, it is necessary to pay more attention to promoting the aspect of successful aging and its related determinants. Policymakers should focus more on the main predictors of SSA, including health and financial security. Promotion of perceived health and reduction of financial concerns could finally increase SSA among older people. However, this problem in Iranian older adults requires further research and more attention, especially considering the predictor factors of the current study.

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Conflicts of interest

Nothing to declare.

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