



Is Successful Aging Associated with Attitudes to Aging? A Cross-sectional Study Among Community Dwelling Older Adults Living in Kashan

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Abstract

Background: As the population age structure undergoes significant changes, understanding the factors that contribute to successful aging becomes increasingly important. The attitude towards aging significantly influences health and well-being in older adults.

Objectives: This study aims to investigate the association between attitudes towards aging and successful aging among older adults.

Methods: This cross-sectional study was conducted among community-dwelling older adults aged 60 years and older, registered at the comprehensive health care centers in Kashan city, Iran. Participants were selected using a multistage random sampling method from the integrated health system (SIB). Data collection involved administering a demographic information form, the successful aging instrument (SAI), and the Attitudes to Aging Questionnaire (AAQ). Data analysis was performed using SPSS version 26, employing Spearman's correlation coefficient and multiple logistic regression for statistical evaluation. A significance level of $P < 0.05$ was established for all tests.

Results: A total of 300 older adults participated in the study, with a mean age of 69 ± 7.69 years. Twenty percent of participants were classified as experiencing successful aging. Male gender, younger age, higher education, better economic status, and all dimensions of attitudes towards aging were significantly associated with higher successful aging scores ($P < 0.001$). In the multivariate model, the dimensions of attitude towards aging remained significant: Psychosocial loss [odds ratio (OR) = 0.88, $P = 0.002$], spiritual-psychological growth (OR = 1.16, $P = 0.008$), and physical changes (OR = 1.19, $P = 0.000$).

Conclusions: The findings of this study underscore the crucial role of attitudes in fostering successful aging. Given the multidimensional nature of successful aging and the foundational role of attitudes towards aging, interventions aimed at enhancing public perceptions of aging may be beneficial in promoting successful aging outcomes.

Keywords: Aging, Attitude to Aging, Older Adults, Successful Aging

1. Background

The world is experiencing an unprecedented demographic shift towards an aging population, with no country exempt from this process (1). Between 2015 and 2050, the proportion of individuals over 60 years old is expected to nearly double from 12% to 22% (2). In

Iran, the percentage of people aged 60 and older increased from 5.8% in 1996 to 9.3% in 2016, according to the last consensus of the Statistical Center of Iran, and it is predicted to increase to about 30% by 2050 (3, 4). Today, old age is recognized as a unique developmental stage rather than merely a period of decline, offering opportunities for valuable experiences (5). Advances in

technology and medical science have prompted researchers to explore ways to promote health and happiness in older age (6, 7). Successful aging has emerged as a key strategy for enhancing health among older adults (8).

Research on successful aging dates back to the 1960s (9), with various models and indicators developed over the decades (10). Havighurst defined successful aging as an individual's sense of inner satisfaction and happiness derived from past and present experiences (11). Ryff (1989) expanded this definition to include not only life satisfaction but also positive change and progress throughout the aging process, viewing aging as a developmental journey where growth is still possible. The most recognized definition of successful aging was proposed by Rowe and Kahn in 1987 and 1997, identifying three core characteristics: Adopting a healthy lifestyle to prevent disease, maintaining high cognitive and physical performance, and remaining actively engaged in family and community life (9, 12, 13).

In recent years, aging research has expanded beyond biomedical models to incorporate subjective criteria, such as emotional well-being, personality traits, social participation, life satisfaction, and acceptance of aging (14). As life expectancy increases, there is a growing interest in policies that enhance the quality of life for older adults, linking concepts such as attitudes towards aging and successful aging (15). Attitudes, shaped by personal experiences and observations, are defined as stable judgments that summarize an individual's thoughts and feelings about aging (16). These attitudes can reflect personal satisfaction with aging and adaptation to age-related changes, influenced by cultural and societal contexts (17).

Studies indicate that positive attitudes towards aging are associated with better health outcomes and greater life satisfaction. For example, Seow et al. found a significant correlation between positive aging attitudes and successful aging outcomes, with negative attitudes linked to higher levels of depression and anxiety (18). Hong and Kwak demonstrated that positive views on aging and active living enhance successful aging (19). Similarly, Kunuroglu and Vural Yuzbasi found that self-compassion and resilience positively relate to life satisfaction and successful aging (6). Other studies confirm that individuals with positive perceptions of aging experience better health and longer lifespans compared to those with negative views (17, 20, 21).

Given the imminent phenomenon of population aging in Iran, promoting successful aging by identifying and enhancing its effective factors is essential. Despite global interest in researching successful aging,

relatively few studies have been conducted in Iran. Most research has used non-specific measures like life satisfaction and quality of life.

2. Objectives

This study utilized a specific successful aging instrument (SAI), locally developed and validated for Iranian older adults (22). The aim of this study is to investigate the situation of successful aging and its association with attitudes towards aging in older adults in Kashan, Iran.

3. Methods

This cross-sectional study was conducted in Kashan city, Iran. The proposal received approval from the Ethics Committee of the School of Public Health and Safety at Shahid Beheshti University of Medical Sciences (ethics code: IR.SBMU.PHNS.REC.1402.019). Based on Song Hong and Kwak's study (19), an effect size of $R = 0.23$ was used with a type I error $\alpha = 5\%$, power = 90%, and 20% expected dropout, resulting in a required sample size of 316, of which 300 participants were enrolled in this study.

To avoid selection bias, a multistage random sampling method was used. The study sample was drawn from fourteen comprehensive health centers. One cluster was randomly selected from each center, covering a total population of 40,899 individuals, and participants aged ≥ 60 years were chosen through systematic random sampling from a membership list. They were invited to attend the centers on a specified date via phone. After providing detailed explanations of the study objectives and obtaining verbal consent, questionnaires were distributed to volunteer participants who had no cognitive impairments or acute illnesses and were able to communicate with the interviewer. The questionnaire took approximately 20 - 30 minutes to complete; if respondents were illiterate, the interviewer patiently and impartially filled it out.

3.1. Instruments

Questionnaires were assessed using the Abbreviated Mental Test Score (AMTS). It was validated in Iran by Foroughan et al. showing a significant correlation with DSM criteria for dementia and MMSE ($P < 0.001$), with a Cronbach's alpha coefficient of 0.90. Participants scoring 7 or higher were included (23). Data collection occurred from June to September 2023 at the selected health centers.

Instruments included a demographic information form, the SAI, and the Attitudes to Aging Questionnaire (AAQ). The SAI, validated by Zanjari et al. showed a

significant correlation with life satisfaction ($P < 0.001$) and had a Cronbach's alpha of 0.93. It consists of 54 items across seven subscales: Mental and physical health, health-related behaviors, functional health, psychological well-being, social support, financial-environmental security, and spirituality, scored on a 5-point Likert scale, with total scores ranging from 0 to 100 (22).

The AAQ, developed by the project on quality of life in collaboration with the World Health Organization, assessed older adults' subjective understanding of aging (24). Validated in Iran, it correlated significantly with SF-36 and WHOQOL scores ($P < 0.01$) and had a Cronbach's alpha of 0.75 (25). This tool measures attitudes across three subscales with 24 items: Physical changes, psychosocial losses, and psychological growth, scored on a 5-point Likert scale. Higher scores in physical changes and psychological growth indicate a more positive attitude, while higher scores in psychosocial losses reflect a more negative view of aging (25).

3.2. Statistical Analysis

Descriptive statistics included frequency, percentage, mean, and variance. The normality of subscale scores was assessed using the Kolmogorov-Smirnov test. For normally distributed data, independent *t*-tests and one-way ANOVA were used; for non-normally distributed data, Mann-Whitney and Kruskal-Wallis tests were applied. Spearman's correlation coefficient evaluated associations between dimensions. Multiple linear regression and logistic regression models assessed the associations of demographic variables with these dimensions.

4. Results

The study included 300 older adults, with a mean age of 69 ± 7.69 years; most participants were aged between 60 and 70, and only 10% were over 80. Approximately 60% were female. Demographic characteristics are detailed in Table 1.

Table 1. The Demographic Characteristics of the Participants.

| Variables | No. (%) |
|----------------|------------|
| Age group (y) | |
| 60-69 | 186 (62) |
| 70-79 | 82 (27.3) |
| ≥ 80 | 32 (10.7) |
| Gender | |
| Male | 119 (39.7) |
| Female | 181 (60.3) |
| Marital status | |

| Variables | No. (%) |
|--------------------------|------------|
| Married | 218 (72.7) |
| Single | 3 (0.1) |
| Divorced | 3 (0.1) |
| Widowed | 76 (25.3) |
| Education | |
| Illiterate | 55 (18.3) |
| High school | 158 (52.7) |
| Diploma | 59 (19.7) |
| Academic | 28 (9.3) |
| Number of children | |
| None | 4 (1.3) |
| 1-3 | 127 (42.3) |
| 4-6 | 146 (48.7) |
| Living arrangements | |
| Alone | 51 (17) |
| With spouse | 125 (41.7) |
| With spouse and children | 94 (31.3) |
| With children or others | 30 (10) |
| Employment status | |
| House keeper | 155 (51.7) |
| Employed | 14 (4.7) |
| Retired | 104 (34.7) |
| Working after retirement | 21 (0.7) |
| Unemployed | 6 (0.2) |
| Economic status | |
| Low | 22 (7.3) |
| Low-to-moderate | 42 (0.14) |
| Moderate | 178 (59.3) |
| Moderate-to-high | 51 (0.17) |
| High | 7 (2.3) |

The mean score for successful aging was 69.95 ± 12.71 . Among the subscales, spirituality received the highest score, while financial-environmental security received the lowest. Using the 80th percentile to identify successful older adults, adapted from Zanjari and Momtaz (26), 20% of participants were classified as successful. Participants' attitudes toward aging were close to the standard mean in mental-spiritual growth and physical changes but exceeded the mean in psychosocial problems, as shown in Table 2.

Table 3 shows that high economic status significantly predicts successful aging ($OR = 7.25$, $P = 0.233$), while economic factors remained significant in multivariate analysis. However, demographic variables such as gender, education, age, children, living arrangements, and employment lost significance. Psychosocial loss decreased the odds of successful aging by 12% ($OR = 0.88$, $P = 0.002$), while spiritual-psychological growth and physical changes increased the odds by 16% ($OR = 1.16$, $P = 0.008$) and 19% ($OR = 1.19$, $P = 0.000$), respectively.

Table 2. Scores of Dimensions of Attitude Towards Aging and Successful Aging

| Variables | Mean \pm SD | Min-Max |
|----------------------------|-------------------|----------|
| Attitude to aging | | |
| Psycho-social losses | 24.69 \pm 6.11 | 8 - 40 |
| Psychological growth | 29.34 \pm 4.85 | 16 - 40 |
| Physical changes | 27.67 \pm 6.19 | 12 - 40 |
| Successful aging | | |
| Mental and physical health | 56.04 \pm 23.41 | 4 - 100 |
| Health-related behaviors | 75.19 \pm 19.79 | 19 - 100 |
| Psychological well-being | 66.53 \pm 18.86 | 3 - 100 |
| Social support | 81.32 \pm 16.12 | 18 - 100 |
| Financial-environmental | 55.80 \pm 16.57 | 11 - 100 |
| Spirituality | 85.27 \pm 17.72 | 0 - 100 |
| Functional health | 69.45 \pm 19.84 | 5 - 100 |
| Total | 69.95 \pm 12.71 | 24 - 97 |

5. Discussion

In the present study, the association between attitudes towards aging and successful aging was assessed among a random sample of older adults receiving care at comprehensive health centers in Kashan city. Based on the results, 20% of the participants were identified as successful older adults, compared to reported rates of successful aging in Iran of 11.2% by Zanjari and Momtaz (26), 24% by Shafiee et al. (27), and 19.6% by Sasanipour and Shahbazin (28). The findings of the present study corroborate those reported by Shafiee and Sasanipour (28), highlighting the common factors of lifestyle, education level, and income as influential in successful aging.

The association between successful aging and demographic variables indicated that individuals with higher education and younger ages achieved higher mean scores in successful aging. This finding aligns with studies conducted by Zanjari and Momtaz (26), Shafiee et al. (27), and Kunuroglu and Vural Yuzbasi (6). This can be attributed to the fact that individuals with higher education and economic status typically have better access to resources that aid in addressing life challenges, including those associated with aging. Notably, despite only 9% of participants having academic education, statistical analyses confirmed the significant impact of education on all dimensions of successful aging and attitudes toward aging. In essence, higher education levels facilitate better job opportunities and greater financial security, which enhance older adults' awareness, cognitive performance, and health-oriented behaviors, thereby increasing the likelihood of successful aging.

Economic status and education are personal and social characteristics that indirectly affect successful aging through attitudes. Additionally, living with a spouse or children emerged as another significant factor influencing successful aging, showing a strong association with all dimensions of attitudes toward aging. This finding is consistent with results reported by Javadi Pashaki et al. (21) and Bosnes et al. (29). Given the distinctive cultural, religious, and traditional characteristics of Kashan city – such as religiosity, familial bonds, and a sense of contentment – there remains a strong emphasis on honoring and respecting older adults, granting them a special status and dignity within families.

In exploring the association between successful aging and attitudes towards aging, the impact of attitudes was significantly confirmed across three dimensions, enhancing the odds of successful aging. This finding is in agreement with studies conducted by Hong and Kwak, Low et al., Konoroglu and Vural Yuzbasi, and Ozcan Tozoglu and Gurbuzer (6, 19, 20, 30). Also, in Bratt and Fagerstrom's study, a positive attitude with self-compassion is significantly associated with quality of life and mental health (31). Therefore, flexibility, acceptance, and a positive outlook on age-related changes can be considered foundational for successful aging, contributing to the mental and physical health of seniors.

In summary, as attitudes towards aging were identified as the primary predictor of successful aging, it is essential to enhance this fundamental predictor to promote successful aging within the community.

5.1. Conclusions

Table 3. The Multivariable and Multiple Logistic Regression Model to Investigate the Relationship of Successful Aging with Attitudes Towards Aging and Other Variables

| Variables | Unadjusted OR (95%CI); Uni-variable | P-Value | Adjusted OR (95%CI); Multi-variable | P-Value |
|-----------------------------|-------------------------------------|---------|-------------------------------------|---------|
| Gender (male) | 1.29 (0.64 - 2.61) | 0.468 | 1.11 (0.27 - 4.48) | 0.887 |
| Education | | | | |
| Academic | 1 | 0.645 | 1 | 0.972 |
| Illiterate | 0.65 (1.31 - 3.26) | 0.605 | 0.8 (0.11 - 5.75) | 0.826 |
| High school | 0.56 (0.19 - 1.61) | 0.286 | 0.86 (0.24 - 3.06) | 0.812 |
| Diploma | 0.89 (0.28 - 2.81) | 0.845 | 1.09 (0.3 - 3.96) | 0.893 |
| Age groups (y) | | | | |
| 60 - 69 | 1 | 0.318 | 1 | 0.174 |
| 70 - 79 | 1.03 (0.44 - 2.42) | 0.943 | 1.36 (0.51 - 3.58) | 0.540 |
| ≥ 80 | 2.51 (0.74 - 8.43) | 0.136 | 4.56 (0.93 - 22.35) | 0.061 |
| Number of children | | | | |
| 1 - 3 | 1 | - | 1 | 0.895 |
| No | 2.04 (0.14 - 29.41) | 0.599 | 1.07 (0.05 - 21.04) | 0.962 |
| 4 - 6 | 0.69 (0.32 - 1.48) | 0.350 | 0.7 (0.28 - 1.78) | 0.454 |
| 7 and more | 0.68 (0.13 - 3.62) | 0.657 | 0.63 (0.09 - 4.46) | 0.645 |
| Living arrangements | | | | |
| With spouse and children | 1 | 0.735 | 1 | 0.663 |
| Alone | 1.04 (0.27 - 3.99) | 0.952 | 0.68 (0.319 - 8.87) | 0.539 |
| With spouse | 1.39 (0.63 - 3.02) | 0.406 | 1.64 (0.67 - 4.08) | 0.28 |
| With children or others | 1.94 (0.47 - 7.93) | 0.352 | 2.7 (0.503 - 14.56) | 0.246 |
| Employment status | | | | |
| Retired | 1 | 0.840 | 1 | 0.964 |
| Employed | 0.70 (0.11 - 4.39) | 0.710 | 0.61 (0.08 - 4.36) | 0.620 |
| House keeper | 0.63 (0.29 - 1.35) | 0.236 | 0.73 (0.18 - 2.89) | 0.650 |
| Working after retirement | 0.81 (0.23 - 2.85) | 0.749 | 0.7 (0.16 - 2.99) | 0.631 |
| Economic status | | | | |
| Low | 1 | 0.601 | 1 | 0.602 |
| Low-to-moderate | 1.42 (0.13 - 15.55) | 0.722 | 2.28 (0.16 - 33.28) | 0.547 |
| Moderate | 2.37 (0.27 - 20.20) | 0.428 | 3.33 (0.31 - 35.63) | 0.320 |
| Moderate-to-high | 3.36 (0.36 - 30.98) | 0.284 | 4.95 (0.44 - 55.62) | 0.195 |
| High | 5.07 (0.24 - 104.63) | 0.293 | 7.25 (0.28 - 187.58) | 0.233 |
| Psycho-social losses | 0.87 (0.81 - 0.93) | < 0.001 | 0.88 (0.81 - 0.95) | 0.002 |
| Psychological growth | 1.11 (1.01 - 1.22) | 0.021 | 1.16 (1.04 - 1.29) | 0.008 |
| Physical changes | 1.19 (1.09 - 1.3) | < 0.001 | 1.19 (1.08 - 1.32) | 0.000 |

Abbreviations: OR, odds ratio; CI, confidence interval.

Given the significant role of attitudes towards aging in shaping and fostering successful aging within society, comprehensive cultural initiatives should be implemented across all age groups to enhance their perceptions of aging. To achieve this, it is crucial to raise awareness through public education and mass media campaigns. As a result, older adults can shift their perspectives toward creativity, dynamism, and self-reliance, enabling them to fully leverage the positive and sustainable aspects of aging. Furthermore, in future research, scholars can investigate the impact of attitudes toward aging on successful aging outcomes,

providing valuable insights for further development in this area.

5.2. Limitations

Although we used random sampling in this study, the requirement for participants to attend in person may have limited the participation of older adults with certain levels of disability, which may limit the generalizability. In addition, the relatively high number of questionnaire items might have made participants feel tired, which could have reduced the accuracy of their responses. We aimed to select appropriate timing

and conditions for posing questions to the older adults. Finally, given the small community context of Kashan, some participants may have felt hesitant to share their true opinions out of concern about being judged, which may have introduced some response bias.

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Footnotes

Authors' Contribution: All authors significantly contributed to this research. The conception and design of the study were collectively developed by all authors. Data collection and analysis were performed collaboratively, ensuring accuracy and validity throughout each stage. Each author played a key role in interpreting the results and shaping the overall discussion. Drafting and revising the manuscript was a joint effort, with all authors providing valuable feedback and critical revisions that enhanced the quality and clarity of the work. All authors reviewed and approved the final manuscript and take full responsibility for the content of this research.

Conflict of Interests Statement: The authors declare no conflict of interest.

Data Availability: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical Approval: This study received approval from the Ethics Committee of the School of Public Health and Safety at Shahid Beheshti University of Medical Sciences (ethics code: [IR.SBMU.PHNS.REC.1402.019](#)).

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Informed Consent: Oral informed consent was obtained from all participants, ensuring they clearly understood their role in the research.

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