

# Structural Model Presentation of Quality of Life for the Elderly Based on Self-Care with the Mediating Role of Social Support

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### ABSTRACT

**Objective:** This study aimed to present a structural model of the quality of life for the elderly based on self-care with the mediating role of social support.

**Methods:** The research employed a correlational design using structural equation modeling. The study population consisted of individuals aged 60 to 75 years living in urban homes in Tehran, with 314 participants selected as the research sample. The data collection tools included the Iranian version of the Phillips Social Support Questionnaire (1986), the World Health Organization's Quality of Life Questionnaire (1989), and the Elderly Self-care Questionnaire by Younesi et al. (2020). The statistical technique used was a full latent variable structural equation model, and the data analysis was performed using SPSS version 26, AMOS version 24, and R software version 4.3.1. Examination of the model fit indices indicated that the model overall is in excellent condition for explaining and fitting the data.

**Findings:** The results showed that both social support and self-care have a significant positive effect on the quality of life variable for the elderly. Moreover, the self-care variable also has a significant positive impact on the social support variable at a 95% confidence level. Additionally, the self-care variable significantly affects the quality of life of the elderly through the mediating variable of social support.

**Conclusion:** According to the findings of this study, the mediating role of social support can play a significant role in examining changes in the quality of life of the elderly. It is recommended that the importance of social support be emphasized and taught in elderly care centers and other counseling and guidance centers.

**Keywords:** *Quality of life, Self-care, Social support, Aging.*

## 1. Introduction

The global rise in the elderly population has accentuated the importance of their living conditions (Cheraghi et al., 2019; Kazemi et al., 2019). The aging population scenario is increasingly concerning due to the rise in recurring illnesses among the elderly (Kruithof et al., 2018). Over the years, changes in health and quality of life among the elderly have highlighted the significance of understanding protective and risk factors affecting these aspects. Quality of life encompasses not only physical health but also mental state, level of independence, social relationships, personal beliefs, and other characteristics involved in an individual's environment, including a system of values that involves goals, expectations, standards, and concerns. Investigating factors that can influence individuals' quality of life, such as self-care and social support, is of high importance. Attention to various aspects of elderly life such as loneliness, resilience, mental health, and quality of life is crucial for policymakers and psychologists (Mosadeghrad, 2021).

Old age is a sensitive period in human life, and addressing the issues and needs of this phase is critical. Considering the unique needs of this period, focusing on the quality of life of the elderly is essential and should be carefully observed (Kazemi et al., 2019). The World Health Organization (2018) defines quality of life as an individual's perception of their life within the cultural context and value systems where they live, in relation to their goals, expectations, standards, and concerns. Quality of life is widely utilized in medical sciences and is examined as health-related quality of life, which is defined as an individual's mental assessment of their current health status, healthcare, and health-promoting activities that allow them to maintain a level of overall activity and pursue valuable life goals (Cheraghi et al., 2019). The quality of life of the elderly is particularly significant due to the nature of the aging period that involves ongoing physical and mental illnesses (Najafi et al., 2022). Many factors influence the quality of life of the elderly. Research on this topic indicates that numerous variables and causes are effective in influencing the quality of life of the elderly. Age, gender, physical and health status, cultural factors, social support, personality and behavioral characteristics, economic factors, social support, and societal attitudes toward aging are all factors considered in adjusting the quality of life in old age (Mostafavi et al., 2023). Examination of research findings related to the topic indicates that some factors are more significant and play a

substantial role in the quality of life of the elderly, with the focus of this article being on such crucial causes, namely self-care and social support.

Self-care is another variable that plays an important role in the quality of life of the elderly. Self-care is particularly important in old age for maintaining health and preventing disease. The World Health Organization (2018) defines self-care as activities performed by individuals, families, and communities aimed at enhancing health, preventing disease, limiting illness, and restoring health (Hajigadirzadeh et al., 2023; Sidi et al., 2022). Self-care activities can play a very significant role in helping patients adapt to the disease process, improving quality of life, reducing hospital stays and mortality (Khoshkhoo et al., 2021). Self-care can reduce a high percentage of complications from physical and mental illnesses and enhance capabilities, improving daily activities and achieving independence in the elderly (Ahmadi & Valizadeh, 2021; Behzadi et al., 2021; Borhaninejad et al., 2017).

Alongside elucidating the role of self-care in improving conditions in old age, the role of social support provided to the elderly is also of great importance. Relatives, including family members, friends, and acquaintances, play a very significant role in the quality of life and mental health of elderly individuals (Alavi et al., 2021; Sodagar & Sobhi, 2018; Yousefi et al., 2023). Cobb (1976) initially defined social support as an awareness through which an individual believes in themselves, is loved by others, and connects with other community members (Cobb, 1976). Social support as an affective coping mechanism has the potential to impact quality of life significantly (Hosseini et al., 2020). Social support involves feelings of belonging, being accepted, and being loved. Social support emphasizes the availability and quality of relationships with individuals who provide support resources when needed. Friends, acquaintances, and family provide tangible services and information that make an individual feel cared for, loved, esteemed, and valuable, and consider themselves part of a communication network (Alavi, 2020). The role of social support provided to the elderly is of great importance. Relatives, including family members, friends, and acquaintances, play a very significant role in the quality of life and mental health of elderly individuals (Faghfouriazar, 2023; Kazemi et al., 2019). The variable of social support is effective both directly and indirectly through its effectiveness on variables such as self-care on the quality of life of the elderly, and this article attempts to explore social support from both aspects. As stated, a precise understanding of this issue and the

mechanism of influence of each of the predictive variables as well as the mediating role of social support can be effective in improving the quality of life of the elderly. In this research, the researcher intends to examine the model of quality of life of the elderly based on variables of self-care and social support.

## 2. Methods

### 2.1. Study design and Participant

The current study is applied in nature and employs a correlational research design using structural equation modeling to concurrently examine predictor, criterion, and mediator variables. Additionally, data collection was conducted cross-sectionally. The study population included elderly individuals aged 60 to 75 years residing in urban homes within Tehran, and the sample size was determined using thumb rules suggested by structural equation modeling experts.

### 2.2. Measures

#### 2.2.1. Quality of Life

This questionnaire is used to assess an individual's quality of life over the past two weeks. Developed by the World Health Organization in collaboration with 15 international centers in 1989, it contains 28 questions across four domains. The first two questions, which do not belong to any specific domain, assess general health and quality of life. The domains are: a) Physical Health, b) Psychological, c) Social Relationships, and d) Environment. Scoring of this test ranges from 1 to 5, corresponding to responses such as "not at all", "a little", "moderate", "a lot", "completely", or similar sentiments such as "very dissatisfied" to "completely satisfied". This scale has been validated across many countries and cultures by various researchers (Cheraghi et al., 2019; Kazemi et al., 2019).

#### 2.2.2. Social Support

This social support questionnaire was developed by Wax, Phillips, Holly, Thompson, Williams, and Stewart in 1986 based on Cobb's definition of social support. The questionnaire comprises 23 items. In his thesis supervised by Delavar, Ebrahimi Gavam (1992) modified the scoring system of this questionnaire from a scale to binary (0 and 1),

citing the use of Cronbach's alpha for this change (Hemmati Rad & Sepah Mansour, 2008). The Cronbach's alpha coefficient obtained for this instrument in this study was 0.80, indicating that the collected data are reliably valid (Pouresmaeel Niyazi et al., 2022; Zal et al., 2022).

#### 2.2.3. Elderly Self-Care

This questionnaire was designed and developed by Younesi Borojeni and colleagues (2020) to assess self-care in the elderly. It includes 29 questions and four self-care components: spiritual, social, physical, and during illness, assessed using a six-point Likert scale with items like "I check my weight every week". The validity of this questionnaire was confirmed using construct validity through exploratory and confirmatory factor analysis, identifying four distinct factors. All four components had reliability values above 0.7, confirming the questionnaire's validity. The reliability of the data collected through the self-care questionnaire in this study using Cronbach's alpha method in the four self-care components was 0.93, 0.89, 0.92, and 0.80, respectively, showing that the data are reliable and the results can be trusted (Khoshkhoo et al., 2021).

### 2.3. Data Analysis

The statistical technique used in this research was a full latent variable structural equation model, considering the nature of the research and the hypotheses involved. This model examines measurement relationships between latent variables and observed variables, as well as structural relationships among the latent variables themselves. Initially, an analysis was conducted to respond to the primary research question regarding the fit of the proposed model with the data, and model fit indices were presented. Subsequently, research questions were examined. Before performing the statistical analysis, the assumptions of using this method were reviewed. For statistical analysis of the data, SPSS version 26, AMOS version 24, and R software (packages lavaan and mvnormtest) were used.

## 3. Findings and Results

A summary of the descriptive results (mean, standard deviation, skewness, and kurtosis) of the participants' scores in the study variables is presented in Table 1.

**Table 1**

*Descriptive Statistics of Study Variables*

Variable	Dimension	Mean	Standard Deviation	Skewness	Kurtosis
Quality of Life	Physical Health	20.11	4.2	0.14	0.04
	Psychological Health	18.5	3.89	-0.17	0.07
	Social Relationships	10.66	2.54	0.24	0.01
Self-Care	Environmental	24.28	5.13	-0.10	-0.05
	Spiritual	20.31	5.24	0.44	0.14
	Social	23.16	5.17	-0.02	-0.12
	Physical	31.0	6.12	-0.21	-0.09
Social Support	During Illness	22.84	5.06	0.02	0.21
	-	90.63	12.45	0.1	-0.05

One of the main assumptions for selecting an appropriate statistical method is knowing the distribution shape of the data. The choice between normal or non-normal data models in structural equation modeling depends on this. The multivariate energy test was used to examine deviations from normality in the dependent variables of the study, with test statistics and significance indicating this assumption holds ( $MVE = 1.39, p = 0.82$ ). Consequently, there is no obstacle to using covariance-based structural equation modeling methods.

In continuation, the adequacy of the research model titled "Structural Model Presentation of Quality of Life for the Elderly Based on Self-Care with the Mediating Role of Social Support" was examined. Several statistical indices exist for assessing model fit. The fit of the model is

determined by the degree to which the sample's variance-covariance data support the structural equation model. One important index is the chi-square to degrees of freedom ratio, which is often considered acceptable within a range of 1 to 3. The Root Mean Square Error of Approximation (RMSEA) is another index used to check the model's appropriateness, with values between 0 and 0.08 indicating a good fit in the strictest sense. Other important indices include the Comparative Fit Index (CFI), the Normed Fit Index (NFI), the Incremental Fit Index (IFI), the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), and the Non-Normed Fit Index (NNFI), all of which should exceed 0.9 for the final model to be accepted. The structural model ..., after data examination, presented the best fit model with the fit indices specified in Table 2.

**Table 2**

*Fit Indices for Structural Model*

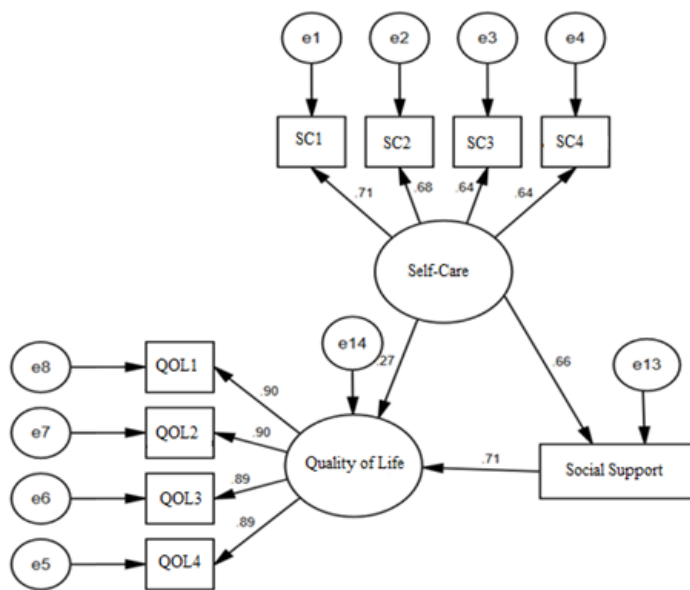
Index	Fit Index	Acceptable Limit
X <sup>2</sup> /df	0.91	Less than 3
RMSEA	0.02	Less than 0.08
CFI	0.99	Greater than 0.9
NFI	0.98	Greater than 0.9
TLI	0.99	Greater than 0.9
IFI	0.98	Greater than 0.9

Each index alone does not conclusively indicate the model's fitness or lack thereof; these indices must be interpreted collectively. The obtained values indicate that, overall, the model is in a very favorable state for explaining

and fitting, and thus testing the research sub-questions is unimpeded. The standardized model is also presented in Figure 1.

**Figure 1**

Model with Beta Coefficients



**Table 3**

Coefficients and Significance of Direct and Indirect Effects

Criterion Variable	Predictor Variable	Mediator Variable	Effect	Estimation Error	Z-Statistic	P-Value
Quality of Life	Social Support	-	0.71	0.01	15.44	0.01
	Self-Care	-	0.27	0.05	5.27	0.01
Social Support	Self-Care	-	0.66	0.22	9.82	0.01
Quality of Life	Social Support	Self-Care	0.47	0.05	8.88	0.01

The results presented in Table 3, considering the test statistics and significance obtained ( $P < 0.05$ ,  $Z > 1.96$ ), indicate that both social support (0.71) and self-care (0.27) have a significant positive effect on the quality of life of the elderly. Additionally, the self-care variable (0.77) also has a significant positive effect on the social support variable at a 95% confidence level. Furthermore, the self-care variable through the mediating variable of social support, with an effect size of 0.47 and a test statistic of 7.88, significantly impacts the quality of life of the elderly.

**4. Discussion and Conclusion**

The objective of this research was to investigate whether the quality of life of the elderly could be modeled based on two variables, self-care and social support, both directly and by considering the mediating role of social support. The findings regarding the role of the self-care variable in the quality of life of the elderly demonstrate that self-care plays a significant role in influencing this quality. Specifically, the

relationship between self-care and the criterion variable was found to be positively significant. In brief, an increase in self-care can enhance the quality of life of the elderly and vice versa. These research findings align with prior findings (Ahmadi & Valizadeh, 2021; Khoshkhoo et al., 2021; Mahdi et al., 2016; Salimi et al., 2015)

Regarding the existence of a relationship between the social support variable and the criterion variable (quality of life of the elderly), it can be stated that the influence of social support on the quality of life is significantly positive. This means that improving social support in the elderly can enhance their quality of life and conversely, a reduction in social support can lead to a decrease in their quality of life. This relationship between social support and the criterion variable is supported by prior research (Ahmadi & Valizadeh, 2021; Faghfouriazar, 2023; Kazemi et al., 2019).

The self-care variable affects the criterion variable both directly and indirectly. Its indirect role occurs through increasing social support, which in turn enhances the quality of life of the elderly. In short, self-care significantly



influences changes in the social support variable and increases it, ultimately leading to an improvement in the quality of life of the elderly. This conclusion is corroborated by other related prior research (Ahmadi & Valizadeh, 2021; Ardouin et al., 2023; Badpar et al., 2019; El-Jawahri et al., 2023; Ferrari et al., 2017; Fung et al., 2021; Lindsay et al., 2011; Maddi, 2015; Moulaei et al., 2022; Park et al., 2021; Saeidi et al., 2021; Zal et al., 2022), which validate and confirm the findings of this research.

## 5. Suggestions and Limitations

In summary, it can be stated that both self-care and social support variables impact the quality of life of the elderly, and the existence of direct relationships between these variables with the criterion variable has been proven in this paper. It is worth noting that this study not only examined and analyzed the direct impact of the self-care and social support variables on the criterion variable but also explored the role of self-care and its relationship on the criterion variable indirectly through its effectiveness on the mediating variable (social support). It was demonstrated that self-care, besides its direct impact on the criterion variable, also indirectly affects the quality of life of the elderly through its impact on the mediating variable.

Therefore, considering that all hypotheses of the research were precisely and empirically investigated and scrutinized scientifically, and also that the results of the research have been compared and analyzed with similar studies which have confirmed the findings of this research, confidence can be placed in these results. The findings of this research emphasize the importance of the topic and the role of the self-care variable both directly and indirectly with the mediating role of social support. Thus, attention to the components of self-care and social support can be effective in improving the quality of life of the elderly.

## Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

## Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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