

# Impact of Social Support on Wellbeing and Health-Related Quality of Life among Elderly Women: Mediating Role of Physical Activity

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## Abstract

**Background:** Living with a better quality is considered as the main challenge for the elderly in new century. Therefore, examining the wellbeing and quality of life of the elderly has become a necessity. The purpose of this study was to test a conceptual model that examines the associations between social support with wellbeing and health-related quality of life in elderly women while considering physical activity as a mediator.

**Methods:** The present study used a structural equation modelling approach. Participants were 384 elderlies (mean age of  $62.22 \pm 10.55$  years) from Golestan province, Iran in 2020. They were over 60 years old without any physical or mental disabilities. The participants fulfilled standard questionnaires (Perceived Social Support Scale, Rapid Assessment of Physical Activity, and Adult Well-Being Assessment). Spearman correlation test and structural equation modelling using Lisrel were employed to analyze data.

**Results:** Findings showed that perceived social support directly affected physical activity ( $\beta=0.409$ ,  $T=6.631$ ), wellbeing ( $\beta=0.429$ ,  $T=7.701$ ), and health-related quality of life ( $\beta=0.473$ ,  $T=7.927$ ). Moreover, physical activity directly affected wellbeing ( $\beta=0.231$ ,  $T=3.217$ ) and health-related quality of life ( $\beta=0.627$ ,  $T=10.649$ ). Finally, physical activity acted as a significant mediator in the associations between perceived social support with wellbeing ( $Z=5.449$ ,  $P<0.001$ ) and health-related quality of life ( $Z=5.930$ ,  $P<0.001$ ).

**Conclusion:** Social support and physical activity are critical concerns for elderly women. Appropriately, it is essential to embrace fitting procedures to increase social support and an active lifestyle among this population.

**Keywords:** Elderly women, Social support, Physical activity, Wellbeing, Quality of life

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## 1. Introduction

Aging is a biological process that involves all living beings, including humans. Increasing life expectancy has been one of the most important human achievements during the 20<sup>th</sup> century. The world's populace is maturing quickly and the top of the age pyramid is widening in most countries. According to the World Health Organization, people aged 60 and over are considered elderly (1). Based on the United Nations, the elderly population's ratio would enhance from 10.5% in 2007 to 21.8% in 2050 (2, 3). The number of elderlies in Iran has increased from 3.9% in 1955 to almost 7.9% in 2007 with a nearly double increase. According to the United Nations, the number of Iranian elderlies will reach 26,393,000 or 26% of the whole residents in 2050 (4). If the main challenge in the 20<sup>th</sup> century was just survival, the main challenge of the new century is to live with a better quality. Therefore,

examining the wellbeing and quality of life (QoL) of the old people has become a necessity. Wellbeing is an individual's capacity to recognize one's own abilities, manage regular life's tensions, work beneficially, and contribute to their community. Wellbeing is not only the non-appearance of illness or sickness, but is a compound mixture of a person's physical, mental, passionate, and social wellbeing components. Wellbeing is unequivocally connected to bliss and life fulfillment. In short, wellbeing can be depicted as how one feels around oneself and one's life (5-8). Thus, wellbeing can be considered as a vital factor in life, especially among elderly. Moreover, QoL refers to the individual's acknowledgment of own victory in terms of the culture and esteem frameworks and in connection to their objectives, desires, benchmarks, and distress. This concept incorporates a person's physical wellbeing, mental status, degree of autonomy, social connections, and convictions (6, 7).

Evidence has revealed that an important component for enhancing wellbeing and QoL of the old people is social support (SS) (9-15). SS could be a subjective develop that reflects one perspective of the substance or quality of social connections. Critically, recognitions of support from others have been found to be more prescient of results than are more objective measures of support (11). According to social cognition theory, receiving appropriate SS from others increases people's self-efficacy in overcoming barriers to engage in various activities. Furthermore, based on the theory of socialization, SS increases individual's competence, causing them to engage in a specific behavior which might consequently increase the wellbeing and QoL (16). Thus, in this research, the influence of SS on wellbeing and QoL of the old people was investigated. Finally, we designed a conceptual model to add physical activity (PA) as a mediator in the associations between SS with wellbeing and health-related quality of life (HRQoL) in elderly women. Research has demonstrated that regular PA has many health benefits, such as preventing chronic illnesses and premature deaths, improving physical and mental wellbeing, and increasing QoL among various age categories, including ageing (17-19). Hence, the present research aimed to investigate a model that examines the associations between SS with wellbeing and HRQoL among elderly women considering PA as a mediator.

## 2. Methods

### 2.1 Participants

The present research applied a cross-sectional descriptive-correlation approach. All the participants submitted written consent to participate and the method of the current study was checked on and affirmed by the University Ethics Committee with the code of IR.IAU.AK.REC.1398.002. The statistical sample of this study consisted of 384 elderlies with mean age of 62.22 years, chosen through a convenience sampling procedure. The participants could participate in this study if they were above 60 years old without any physical or mental disabilities. Those with any physical or mental disabilities were prohibited from the research.

The desired sample was chosen based on the Cochran's Sample Size Equation (20) as the following where  $n$ =sample size,  $Z=1.96$  for 95% of confidence,  $P=0.05$ ,  $q=1-p$ ,  $d=0.05$ , and  $N$ =over 100000.

### 2.2 Instruments

**2.2.1 Social Support:** To evaluate SS, Perceived

$$n = \frac{\frac{Z^2 pq}{d^2}}{1 + \frac{1}{N} \left( \frac{Z^2 pq}{d^2} - 1 \right)} = \frac{\frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}}{1 + \frac{1}{100000} \left( \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} - 1 \right)} = \frac{384.16}{1.00038416} = 384.012 \approx 384$$

Social Support Scale (21) was applied, which has been positively validated in Iran (22). The scale consists of 12 questions and the options are assessed by a 7-point Likert scale extending from 1 for incompletely contradict to 7 for completely concur. In the current research, eight experts were requested to measure the validity of the scale consisted of Item-level Face Validity Index (I-FVI), Content Validity Index (CVI), and Content Validity Ratio (CVR). Results were as follows: I-FVI=0.92, CVI=1.00, and CVR=0.88, indicating a good validity of this tool. Moreover, here, Cronbach's alpha of the scale with  $\alpha=0.79$ .

**2.2.2 Physical activity:** PA was measured using the Rapid Assessment of Physical Activity (RAPA) scale (23). RAPA has seven items with a 'Yes' or 'No' option, where the total score is out of 7. RAPA provides a tool for quickly assessing the level of PA of older adults. In this scale, the individual PA performed during the last week is evaluated. Herein, eight experts confirmed the validity of this scale, where the results were as follows: I-FVI=1.00, CVI=1.00, and CVR=0.92. In addition, we measured the Cronbach's alpha of the RAPA with  $\alpha=0.85$ .

**2.2.3 Wellbeing:** Wellbeing was assessed with The Adult Well-Being Assessment (AWA), a validated self-reported survey with eight questions asking individuals to rate their overall wellbeing (24). The questions are assessed with a Likert scale extending from 0 to 10. In the current study, eight experts confirmed the validity of this scale with the following results: I-FVI=0.92, CVI=1.00, and CVR=1.00. In this paper, Cronbach's alpha of the AWA was  $\alpha=0.91$ .

**2.2.4 Health-Related Quality of Life:** To assess the HRQoL, the SF-36 Quality of Life Questionnaire was

utilized (25), which is also standardized in Iran (26). This questionnaire contains 36 questions assessing different areas of personal health. In general, the eight domains (physical function, physical role limitation, physical pain, general health, vitality, social function, mental role limitation, and mental health) can be placed in two general dimensions of QoL, namely mental and physical dimensions. In each area, the person gets a score between 0 and 100. A score closer to 100 represents a higher QoL. In the current study, eight experts confirmed the validity of this scale with the following results: I-FVI=0.82, CVI=0.90, and CVR=0.92. In this study, Cronbach’s alpha of the SF-36 was  $\alpha=0.95$ .

2.3 Data Analysis

Medians were used as descriptive indicators. Data normality was measured via Kolmogorov-Smirnov test. Spearman correlation test was employed to measure bidirectional associations between the variables. Finally, structural equation modelling was used to test conceptual model. Significant level was set at  $P<0.05$ .

3. Results

3.1 Demographic Data

Demographic results showed that 55% of the elderlies were married, 25% were divorced, and 20% were widows. Moreover, 65% of our sample were illiterate, 20% had elementary school, 5% secondary school, 5% high-school, and 5% college education. Lastly, 80% were officially unemployed and 20% were rented. Descriptive findings are presented in Table 1.

3.2 Bidirectional Associations

Kolmogorov-Smirnov tests demonstrated that our data did not have a normal distribution (all  $P<0.05$ ). Spearman correlation tests found significant direct associations between: 1) SS and PA ( $r=0.428, P<0.001$ ), 2) SS and wellbeing ( $r=0.527, P<0.001$ ), 3) SS and HRQoL ( $r=0.619, P<0.001$ ), 4) PA and wellbeing ( $r=0.349, P<0.001$ ), 5) PA and HRQoL ( $r=0.729, P<0.001$ ), and 6) wellbeing and HRQoL ( $r=0.605, P<0.001$ ).

3.3 Structural Equation Modelling

Findings of the structural equation modelling are presented in Table 2 and Figure 1. The results revealed that: 1) SS had a direct effect on PA ( $\beta=0.409, T=6.631$ ), 2) SS directly affected wellbeing ( $\beta=0.429, T=7.701$ ), 3) SS directly affected HRQoL ( $\beta=0.473, T=7.927$ ), 4) PA directly affected wellbeing ( $\beta=0.231, T=3.217$ ), 5) PA directly affected HRQoL ( $\beta=0.627, T=10.649$ ), 6) wellbeing directly affected HRQoL ( $\beta=0.510, T=8.337$ ), 7) PA significantly mediated the relationships between SS and wellbeing ( $Z=5.449, P<0.001$ ), and 8)

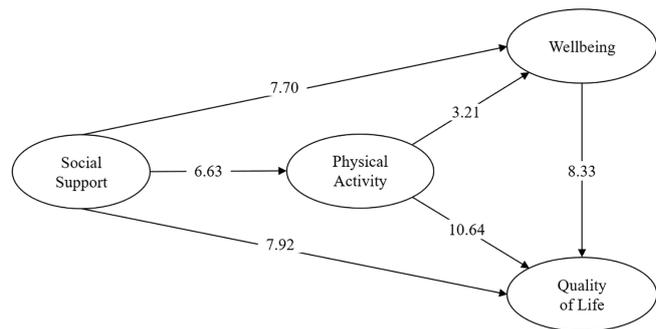


Figure 1: The figure shows the conceptual model in the form of T-value.

Table 1: Median (IQR) of research variables

Variable	Social Support	Physical Activity	Wellbeing	Quality of Life
Median (IQR)	47.00(16:00)	2.00(0:50)	3.50(2:00)	45:50(12:25)

IQR: Interquartile Range

Table 2: Findings of path analysis

Path	$\beta$	T value
1 Social Support=>Physical Activity	0.409	6.631
2 Social Support=>Wellbeing	0.429	7.701
3 Social Support=>Quality of Life	0.473	7.927
4 Physical Activity=>Wellbeing	0.231	3.217
5 Physical Activity=>Quality of Life	0.627	10.649
6 Wellbeing=>Quality of Life	0.510	8.337
	Z	P value
7 Social Support=> Physical Activity=>Wellbeing	5.449	$P<0.001$
8 Social Support=>Physical Activity=>Quality of Life	5.930	$P<0.001$

PA significantly mediated the relationships between SS and HRQoL ( $Z=5.930$ ,  $P<0.001$ ). Findings of model fit exhibited a good fit for the model (RMSEA=0.05;  $X^2/df=2.16$ ; RMR=0.02; NFI=0.93; CFI=0.95).

#### 4. Discussion

In the current research, we aimed to investigate a model examining the associations between SS with wellbeing and HRQoL among elderly women considering PA as a mediator. Our descriptive findings demonstrated that SS of the participants was not very high, indicating that our community was poorly supported from others. In addition, PA, wellbeing, and HRQoL were almost low. These findings implied that our sample of elderly women has a relatively low level of psychophysical conditions. This can be due to the living conditions of these people along with the opportunities available to them for PA.

Concerning SS, our findings revealed that SS directly affected wellbeing and HRQoL among elderly women. Our results are in line with past findings (10-13). Our sample did not perceive high SS; however, people perceiving higher SS reported higher scores on wellbeing and HRQoL. These findings affirm that SS plays a critical part in the mental wellbeing of elderly women. SS in old people consists of the acknowledgments of support from wife, children, acquisitions, and friends. Hence, getting support from companions or neighbors is vital for elderly since it is adaptable and gives a stronger opportunity to be caught on and share encounters (9-10). Individual social systems may give social friendship, significant help, and passionate consolation to the old people, which makes a difference to decrease weight, decrease depressive sentiments, and direct the sick impacts of unpleasant life occasions on wellbeing (12-14). Moreover, community cooperation and engagement in social exercises offer assistance to elderly individuals to stay associated to society. In this regard, it should be noted that SS alone is not enough for improving mental health in the elderly, but the use of support ought to be considered since individuals may not utilize their bolster successfully even being given with imperative back assets (13-15).

Additionally, an interesting finding of the current research was that PA plays a critical intervening part in the associations among SS with wellbeing and HRQoL among elderly women. Our results are in accordance with previous findings representing positive impact of PA on mental health of the elderly (17, 18). Hence, it is critical to empower the elderly to perform PA and

embrace a dynamic way of life to anticipate the decrease of psychophysical capacities. A dynamic way of life can lead to a delay within the aging process (18). Moreover, participating in efficient PA within the years driving up to maturing can have a more noteworthy affect than performing PA in the past for a long time to delay the aging process (17-19). In this manner, public health arrangements can concentrate on enhancing physical movements in old people, particularly within the years before the onset of maturing. This will contribute to the wellbeing and HRQoL among the old people.

##### 4.1. Limitations

This research has a few confinements that ought to be taken under consideration when explaining the findings. First, the cross-sectional design of the preset study can be assumed as a limitation. This kind of research design may prevent assessing causal impact of SS on the wellbeing and HRQoL among elderly women. Second, measuring PA using a questionnaire might be related to biases in the accuracy of PA data. The application of modern devices to measure PA can provide more accurate data on the level of participation of the elderly in PA. Finally, a high percentage of the statistical sample of the present study (65%) was illiterate, which limits the generalizability of the results of current research to the whole population, specifically the literate old people.

#### 5. Conclusions

Based on our findings, we conclude that SS can be assumed as a critical determinant for enhancing the wellbeing and HRQoL among elderly women. In addition, PA plays a significant mediating part in the associations among SS with wellbeing and HRQoL among elderly women. Accordingly, enhancing social connections and improving supports from important persons might be suggested as an essential policy for enhancing the wellbeing and HRQoL of the elderly women. Moreover, engaging in higher amount of PA can be recommended as an effective intervention for increasing the wellbeing and HRQoL of the elderly women. Finally, our findings might have practical implications for geriatricians, exercise psychologists, physical-therapists, and occupational therapists.

#### Ethical Approval

The Ethics Review Board of the university approved the present study with the code of IR.IAU.AK.REC.1398.002. Also, written informed consent was obtained from the participants.

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**Conflict of Interest:** None declared.

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