

## Research Article

# The Relationship between Healthy Lifestyle, Self-Esteem, and Subjective Vitality in the Older Adults of Sirjan

Somayeh Alizadeh <sup>1</sup>, Vahidreza Borhaninejad <sup>2</sup>, Reza Sadeghi <sup>3</sup>, Narges Khanjani <sup>4</sup>,  
Maryam Saber <sup>1</sup> and Parniya Abolghaseminejad <sup>5,6</sup>

<sup>1</sup>Department of Health Education & Promotion, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran

<sup>2</sup>Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

<sup>3</sup>Department of Public Health, Sirjan School of Medical Sciences, Sirjan, Iran

<sup>4</sup>Department of Medical Education, Paul L. Foster School of Medicine, Health Sciences Center, Texas Tech University, El Paso, TX, USA

<sup>5</sup>Department of Public Health, Sirjan School of Medical Sciences, Sirjan, Iran

<sup>6</sup>Health Education & Promotion, Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

Correspondence should be addressed to Parniya Abolghaseminejad; [parniya.ab.20@gmail.com](mailto:parniya.ab.20@gmail.com)

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Older adults are a vulnerable group and face a series of problems that are preventable by changing their lifestyle, so it is necessary to understand the healthy lifestyle and its related factors in older adults. This study aimed to determine the relationship between healthy lifestyle, self-esteem, and subjective vitality in the older adults of Sirjan. This descriptive-analytical cross-sectional study included 200 older adults referred to community health centers in Sirjan in 2021. Older adults with inclusion criteria were selected by two-stage cluster sampling. Data were collected by demographic information questionnaire, the healthy lifestyle questionnaire for elderly, the Rosenberg self-esteem scale, and the subjective vitality scale. The data were analyzed using SPSS20 and descriptive and inferential statistics (Mann–Whitney *U* test, Kruskal–Wallis, post hoc tests, and Spearman correlation coefficient). A significance level <0.05 was considered. The study results showed that the mean scores of healthy lifestyle, self-esteem, and subjective vitality were  $134.42 \pm 13.78$ ,  $36.34 \pm 4.62$ , and  $21.80 \pm 2.85$ , respectively. We observed a direct and significant relationship between healthy lifestyle, self-esteem, and subjective vitality ( $p < 0.001$ ). Considering the relationship between healthy lifestyle, self-esteem, and subjective vitality in older adults, managers and planners can help older adults to promote their healthy lifestyles.

## 1. Introduction

The global population is aging [1]. Improving living conditions and increasing life expectancy are among the reasons for the aging crisis in societies. With an increase in the population aging, the 21st century has faced economic, social, and health problems [2]. Iran has witnessed a decrease in the birth rate and an increase in life expectancy over the past thirty years, so the older population is increasing rapidly [3], with 8.7% of the total population in Iran

being people aged over 60 years. Iran's population aging rate will reach 11.3% in 2025 and 31% in 2050 [4], so the number of older adults aged over 60 years may cause major problems for the healthcare and social security systems in Iran [5].

Older people are a vulnerable group and face a set of age-specific problems, which are preventable by changing their lifestyle [6] because a healthy lifestyle reduces the risk of disease and premature death [7]. Lifestyle is a combination of choices, opportunities, and resources. A healthy lifestyle reduces the incidence and effects of health problems,

increases recovery, deals with stressors, and improves the quality of life [8]. It is better to follow a healthy lifestyle from the early stages of life, but it is never too late to create good habits and change the lifestyle in old age [9]. Self-esteem is a factor affecting people's lifestyle by creating a positive mental image and responsibility for health and self-care in a person and leads to a healthy lifestyle [10].

Self-esteem shows how much people like themselves, how they perceive themselves, and what they think about themselves, so it leads to a feeling of self-worth and self-acceptance [11–13]. Self-esteem is an important element in adaptation processes and does not depend on age but on the ability of a person to manage challenging life events [14]. A person gains self-esteem as a result of positive and negative experiences in life. The greatest increase in self-esteem occurs during childhood and adulthood, and it reaches its peak at approximately 60–70 years of age and gradually declines with age [15] due to poorer physical and mental functioning, deterioration of social status, financial situation, and loss of loved ones [16]. Positive self-esteem also supports the development and maintenance of mental health [17] and contributes to welfare and feeling of happiness [18].

Vitality is another variable affecting the health and quality of life of older men and women [19]. Vitality refers to feeling positive, energetic, and cheerful, and it originates from an internal force in a person [20]. All these states are positive and pleasant concepts and are related to a person's emotions and positive mood [20]. Vitality is low when frustration and fatigue cause inability to perform appropriate tasks and activities, while high vitality increases energy and ability to perform activities [21]. Lara et al. indicated that older adults would benefit from optimism and social support through their self-efficacy and mental health, which in turn reduced discomfort and anxiety, strengthened the feeling of self-worth, and improved self-esteem and satisfaction with life [22]. Meira et al. reported that older adults with a positive attitude and self-esteem should have good physical and mental health to enjoy a happy and independent life [23]. Another study indicated that if older adults had a pleasant image and feeling towards themselves, as well as self-esteem, they would use the necessary skills to have a healthy lifestyle, which led to hope for the future, vitality, and peace. For example, physical activities reduce boredom and depression and increases vitality among older adults [24].

A healthy lifestyle is an important factor of active aging, but its relationship with psychological variables has attracted less attention. We found no research on the relationship between healthy lifestyle, self-esteem, and vitality in older adults, so this study aimed to determine the relationship between healthy lifestyle, self-esteem, and subjective vitality in the older adults of Sirjan. Better perception of the lifestyle and factors related to it can be useful in designing and prioritizing interventions related to improving the health of older adults.

## 2. Materials and Methods

This descriptive-analytical and cross-sectional study was conducted on the older adults of Sirjan in 2021. The eligibility criteria for participating in the study were as follows:

being 60 years old or older, possessing verbal communication abilities, not having a speech disorder, not having any mental illnesses, not being diagnosed with Alzheimer's disease, and demonstrating a willingness to cooperate and actively participate in the study. On the other hand, individuals who expressed unwillingness to participate or failed to complete the questionnaire were considered as exclusion criteria. The sample size was calculated according to a similar study conducted by Barghi Irani et al. [25], so the correlation coefficient between lifestyle variables, psychological capital, and self-care behaviors in the older adults ranged from 0.3 to 0.5. Since no similar study was found during the search, it was assumed that the correlation coefficient between a healthy lifestyle and self-esteem, as well as mental vitality, would be similar to the aforementioned source, with a minimum value of 0.3, so the following formula was used to determine the sample size:

$$n = \left( \frac{Z_{\alpha/2} + Z_{1-\beta}}{|Z_{r_0} + Z_r|} \right) + 3. \quad (1)$$

$Z(\alpha/2)$  represents the  $Z$  statistic corresponding to half of the significance level  $\alpha$ , which is associated with the probability of committing a Type I error.

$Z(1 - \beta)$  represents the  $Z$  statistic corresponding to the power of the test  $(1 - \beta)$ , where  $\beta$  is the probability of committing a Type II error.

$Z'$  was calculated using the following formula:

$$Z' = \frac{1}{2} \ln \left( \frac{1+r}{1-r} \right). \quad (2)$$

$Z'0$  represents the  $Z$  statistic for the null hypothesis, where the assumed correlation coefficient is zero. On the other hand,  $Z'1$  represents the  $Z$  statistic for the assumed correlation coefficient of 1.

Assuming a type I error of 0.01 and a type II error of 0.1, 159 participants were calculated, but 200 participants were included in the study for a better estimate. A two-stage cluster sampling was used for sampling. Four in 12 community health centers in Sirjan were randomly selected, a list of eligible older adults was prepared from each of the centers, and then 50 participants from each of the lists were included in the study by a simple random method.

The demographic information questionnaire, the healthy lifestyle questionnaire for elderly, the Rosenberg self-esteem scale, and the subjective vitality scale were used to collect data.

The demographic information questionnaire included age, sex, education level, marital status, and employment status.

The healthy lifestyle questionnaire for elderly included 46 questions that was psychometrically designed by Eshaghi et al.: 15 questions were about prevention, 5 questions were about sport and entertainment, 14 questions were about healthy nutrition, 5 questions were about stress management, and 7 questions were about social and personal relationships. The questions were rated on a 5-point Likert scale (very low, low, moderate, high, and very high); the lowest score was 42, while the highest score was 211. The

scores of 42–98 were considered unfavorable, 99–155 were considered moderately favorable, and 156–211 were considered favorable lifestyles. Eshaghi et al. confirmed the face and content validity of this questionnaire and reported Cronbach's alpha coefficient of 0.76 [26]. We used the content validity method to measure the validity of this questionnaire, as well as Cronbach's alpha coefficient (0.85) to evaluate the reliability of this questionnaire. The reliability of prevention, healthy nutrition, sport and entertainment, stress management, social and personal relationships, and the whole questionnaire was 0.75, 0.83, 0.78, 0.91, 0.75, and 0.83, respectively.

The Rosenberg self-esteem scale measures a person's attitude towards him/herself with 10 items and is rated on a Likert scale (strongly agree, agree, disagree, and strongly disagree). The lowest score is 10, while the highest score is 40 [27]. As defined by Guttman, this scale has a coefficient of reproducibility of 0.92, indicating excellent internal consistency. Test-retest reliability over a 2-week period shows correlations of 0.85 and 0.88. This questionnaire has a good correlation with other self-esteem measures, including the Coopersmith self-esteem questionnaire [28]. Greenberger et al. confirmed the questionnaire validity using its construct validity [29]. Hojjati et al. also reported its reliability with Cronbach's alpha coefficient of 0.78 [30].

The subjective vitality scale was developed by Ryan and Frederick, who determined its internal consistency of 0.96. This scale includes 7 items rated on a 7-point Likert scale. The lowest score is 7, while the highest score is 35. Arabzadeh determined the reliability of this tool using Cronbach's alpha coefficient of 0.79 [21]. The content validity method was used to determine the validity of this questionnaire in the present study. The reliability of the questionnaire was obtained with Cronbach's alpha coefficient of 0.73. The test-retest method was also used, and the within group correlation was 0.75.

The researcher started sampling after receiving the code of ethics and an official letter of introduction from Kerman University of Medical Sciences and coordinating with the Vice Chancellor for Health of the School of Medical Sciences of Sirjan. Four community health centers of Sirjan were randomly selected. The researcher talked with the heads of the centers and experts of family health units and prepared a list of 200 older people who met the inclusion criteria, and their information was registered in Sib system (integrated health system). The researcher received a list containing the first and last names and mobile phone numbers of the older adults in the form of an Excel file. This process was done for each of the selected centers, and a four-part list containing the characteristics of 800 older people was printed. Then, 50 older people covered by each center were selected using a simple random method and lottery. The researcher contacted them, introduced herself, explained the research objectives and method, and assured them that their information would be confidential. Those who were willing to participate in the study gave their consent verbally, and then the researcher contacted each older adult in the morning and in the afternoon for fifteen minutes, read each question and explained how to answer

it, and recorded the answers in the questionnaire. The interviews lasted from April to May 2021.

Descriptive statistics (absolute frequency, frequency distribution table, mean, and standard deviation) were used for data analysis. Considering that the distribution of the studied variables was not normal, nonparametric tests of Mann–Whitney *U*, Kruskal–Wallis, post hoc tests, and Spearman correlation coefficient were used. SPSS20 was used for data analysis, and the significance level  $<0.05$  was considered.

After receiving the code of ethics (IR.K-MU.REC.1399.598) from the Ethics Committee of Kerman University of Medical Sciences and an official introduction letter from Kerman University of Medical Sciences, the researchers proceeded to sampling. The objectives of the study were explained to the elderly, and the confidentiality of the information was emphasized. Then, if they wanted to participate in the study, informed verbal consent was obtained from them, which was approved by the Ethics Committee of Kerman University of Medical Sciences. Also, all methods were performed according to the relevant guidelines and regulations contained in the Declaration of Helsinki.

### 3. Results

The study results indicated that the mean age of the older adults was  $65.66 \pm 3.9$  years. Most of the participants were male (56.5%), married (63%), retired (38.5%), and had academic education (25%) (Table 1).

Table 2 shows that the mean scores of healthy lifestyle, self-esteem, and subjective vitality were  $134.42 \pm 13.78$ ,  $36.34 \pm 4.62$ , and  $21.80 \pm 2.85$ , respectively. Among the areas of healthy lifestyle, the highest mean score belonged to prevention ( $45.40 \pm 5.28$ ), while the lowest score belonged to the sport and entertainment ( $15.82 \pm 2.67$ ).

Based on the findings, there was no statistically significant association found between age and healthy lifestyle, self-esteem, and mental vitality ( $P > 0.05$ ). However, a statistically significant difference was observed between gender and mental vitality ( $P = 0.047$ ), with men exhibiting higher levels compared to women. Additionally, a significant difference was found between education and healthy lifestyle ( $P = 0.014$ ), indicating that individuals with higher levels of education tend to have healthier lifestyles. Furthermore, the results revealed a statistically significant relationship between marital status and employment status with healthy lifestyle and mental vitality ( $P < 0.05$ ). Married individuals and retirees scored higher in terms of healthy lifestyle and mental vitality compared to other groups (Table 3).

The Spearman correlation coefficient test indicated a direct and significant relationship between healthy lifestyle, self-esteem, and subjective vitality ( $P < 0.001$ ) (Table 4).

### 4. Discussion

The present study aimed to investigate the relationship between healthy lifestyle, self-esteem, and subjective vitality in the older adults of Sirjan. The results showed that the

TABLE 1: Demographic characteristics of the older adults.

Variable	Mean	SD	
Age	65.66	3.9	
Variable	Frequency	Percentage	
Sex	Male	113	56.5
	Female	87	43.5
Marital status	Married	126	63
	Divorced	53	26.5
	Widow/er	21	10.5
Education level	Uneducated	9	4.5
	Reading and writing	49	24.5
	Lower secondary	34	17
	Upper secondary	58	29
	Academic	50	25
Employment status	Self-employed	44	22
	Housewife	56	28
	Retired	77	38.5
	Others	23	11.5

TABLE 2: Mean and standard deviation of the healthy lifestyle, self-esteem, and subjective vitality.

Variables	Mean	SD	Minimum	Maximum
Prevention	45.40	5.28	29	54
Healthy nutrition	40.68	5.05	27	50
Sport	15.82	2.67	9	20
Stress management	16.13	2.41	9	20
Social relationships	16.40	2.22	9	20
Healthy life style	134.42	13.78	92	159
Self-esteem	36.34	4.62	16	40
Subjective vitality	21.80	2.85	10	25

healthy lifestyle score of the older adults was at an average level. Rababa et al. in Jordan, Korkmaz Aslan et al. in Turkey, Li et al. in China, Fallah Mehrabadi et al. in Tehran, and Ershadi Sarabi et al. in Sirjan found similar result in their studies [7, 31–34], but Shamsadini Lori et al. in Shiraz, Rezaeipandari et al. in Yazd, Alaei et al. in Qom, Rashidi and Bahrami in Isfahan, and Cheng et al. in China did not support this result and reported the healthy lifestyle score of the older adults at unfavorable and poor levels [35–39]. The use of a different tool (health-promoting lifestyle questionnaire) and cultural difference were the reasons for different results. These authors also examined certain groups of older people (for example, hospitalized or disabled older adults), but the present study had no limitation in this regard and all older adults participated in the research.

The study results indicated a high level of self-esteem among the older adults. Ryszewska-Łabędzka et al., de Oliveira et al., Zhang et al., Tian, and Mesa-Fernández et al., as well as some Iranian authors, supported this result and indicated good self-esteem among older adults [40–47].

The study results showed that the older adults had high subjective vitality. Chang in Taiwan [48] confirmed this result, but Mohammadi et al. and Poordad et al. in Tehran, Ahmadi et al. in Qazvin, Khalili and Ahmadian in Sanandaj, Arabzadeh, and Ju in South Korea did not support this result and indicated poor subjective vitality in the older adults

[19–21, 49–51]. Cultural differences and different sample sizes and tools were the reasons for different results. Various factors such as economic status, income level, and job [19, 52] can also affect subjective vitality of the older adults in different cities and countries.

We found a direct and significant relationship between healthy lifestyle and self-esteem, so the higher the healthy lifestyle score, the higher the self-esteem score. Caamaño-Navarrete et al., Chen et al., Abd El-Kader and Al-Jiffri, Lee et al., Vandenberg et al., Knox et al., Abdi et al., and Rogh et al. supported this result [53–60]. Although the target populations were different in these studies or they did not directly investigate healthy lifestyle, the authors dealt with its areas such as nutrition and sport.

The type of lifestyle and related behaviors not only play a fundamental role in people’s health but also has consequences that can affect their performance, well-being, and physical, mental, and social health. We showed that self-esteem played an important role in predicting people’s choices in the type of lifestyle because people with high self-esteem feel worthy of happiness and success that are dependent on good body and mind, and this belief in turn makes them choose the best way and the most desirable way in all aspects of life.

Our study reported a direct and significant relationship between healthy lifestyle and subjective vitality, so the higher the healthy lifestyle score, the higher the subjective vitality score. Hartman et al. confirmed this result and showed a positive and significant relationship between healthy lifestyle and vitality in adults [61]. Söderbacka et al. reported that following factors were effective in increasing subjective vitality among older adults: the ability to do daily tasks, health, healthy diet, physical activity and sports such as fishing and boating, nature tour and travel, interest in work and activities, and friends and family members [62]. Ju indicated a significant relationship between physical activity and subjective vitality and found that older adults with active lifestyle and regular physical activity had energy and enthusiasm and gave meaning to their lives [20]. According to Mohammadi-Mehr et al., Isfahani older adults increased their positivity, happiness, hope for the future, and life satisfaction after choosing a healthy lifestyle [24]. These results are in line with our results and emphasize the importance of lifestyle modification to increase vitality in the older adults.

Vitality is an important source of health for older people because it affects people’s passion for life, love, and meaning. The lively older adults have more life expectancy and try to improve their quality of life. A healthy lifestyle plays an important role in their well-being and vitality because it causes the older adults to improve their living conditions and suffer from physical and mental illnesses less. Isolated older adults usually do not have a healthy lifestyle because they are inactive, consume less fruit and vegetable, and experience more depression and lower mental health due to excessive consumption of alcohol and cigarettes [63].

The study results indicated that marital status, level of education, and employment status had a significant relationship with healthy lifestyle. Married people had

TABLE 3: The relationship between demographic characteristics and healthy lifestyle, self-esteem, and subjective vitality.

Variable	Healthy lifestyle ( <i>P</i> value)	Self-esteem ( <i>P</i> value)	Subjective vitality ( <i>P</i> value)
Age*	0.927	0.867	0.896
Sex**	0.775	0.380	0.047
Marital status**	<0.001	0.147	0.046
Education level**	0.014	0.292	0.080
Employment status**	0.003	0.098	<0.001

\*Spearman correlation test; \*\*post hoc.

TABLE 4: The relationship between healthy lifestyle, self-esteem, and subjective vitality in the older adults.

	Self-esteem		Subjective vitality	
	Spearman's correlation coefficient	Significance level	Spearman's correlation coefficient	Significance level
Healthy lifestyle	0.351	<0.001	0.476	<0.001

a healthier lifestyle. Fallah Mehrabadi et al. [34], Alaei et al. [37], Movahedi et al. [64], and Abbasi et al. [65] showed similar results. According to the results, the older people with higher education had a healthier lifestyle. Ershadi Sarabi et al. [7], Zarei et al. [66], Fallah Mehrabadi et al. [34], Alaei et al. [37] Rezaei-pandari and Morowatisarifabad [36] confirmed this result. The healthy lifestyle score in the retired group was higher than that in other groups. Rezaei-pandari and Morowatisarifabad [36] and Khodabakhshi-Kolaei [67] indicated similar results. Employment and social participation led to the exchange of information and diverse topics, which were effective in promoting health literacy and adopting a healthy lifestyle.

This study also had limitations. Data were collected through telephone interviews with older adults due to the COVID-19 outbreak in Sirjan, which slowed down the questioning process, and the researcher was not able to recognize the reaction of people while answering the questions. The statistical population consisted of the older adults of Sirjan; therefore, the generalization of the results to other older people should be done with caution. It was impossible to determine cause and effect relationships due to the cross-sectional nature of the study and lack of knowledge of the lead-lag relationship between variables. In this study, all older people were living at home; therefore, the generalization of results to the older people living in nursing homes should be done with caution. Most of the quantitative research studies conducted on the older group reported their situation with numbers and did not mention the relationship between the variables. Studies similar to the present research were rare, so further comparison and analysis were impossible.

### 5. Conclusions

The study results showed a direct and significant relationship between healthy lifestyle, self-esteem, and subjective vitality among older adults. If older adults choose a healthy lifestyle, they will benefit from a sense of self-esteem and vitality. Nurses and other healthcare providers should promote the self-esteem and vitality of the older adults and try to

minimize and limit what negatively affects these two components. With the support of managers and planners, we can help older adults to promote a healthy lifestyle. We suggest geriatric experts to focus more on these two components and their relationship with healthy lifestyle.

### Data Availability

All data generated or analyzed during this study are included in this published article.

### Disclosure

This article is a part of the master's thesis of Mrs. Parniya Abolghaseminejad, which was implemented at Kerman University of Medical Sciences (A). A preprint has previously been published (Abolghaseminejad P., Borhaninejad V., Khanjani N., Saber M., and Alizadeh D., 2022) [68].

### Conflicts of Interest

The authors declare that they have no conflicts of interest.

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