

# Investigate the Effect of Social Support on Marital Satisfaction with Mediating Role of Emotional Loneliness and Physical Activity

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## Abstract

**Objective:** One of the most important social factors that have been consistently identified as a predictor of healthy aging is marriage satisfaction. Therefore, the purpose of the present study was to investigate the effect of social support on marital satisfaction with mediating role of emotional loneliness and physical activity.

**Method:** This study was descriptive and correlational based on structural equations. The statistical population consisted of all the elderly in the care centers of Shahrekord and Farsan in 2019, among whom 180 individuals were selected randomly. The participants filled out research instruments including Relationship Assessment scale (Hendrick, 1998), Perceived Social Support scale (Zimet, et al., 1988), Adult's Social and Emotional Loneliness scale (DiTommaso, et al., 2004), and Leisure-time Activities scale (Godin, 1985). Structural equation modeling (SEM) was used through SPSS (version 23) and AMOS (version 23) software to analyze the data.

**Results:** The results demonstrated direct effect of social support, emotional loneliness and physical activity on marital satisfaction ( $p < 0.001$ ), and indirect effect of perceived social support on marital satisfaction through emotional loneliness and physical activity ( $p < .05$ ).

**Conclusion:** The SEM results of the current study support the proposed model which explains the interrelationships between perceived social support, loneliness, physical activity, and marital satisfaction. According to the findings of the present study, it is suggested to pay more attention to the variables of social support, emotional loneliness and physical activity in order to improve the marital relationships of the elderly. The findings of this study can help psychologists and other caretakers create more effective family matter programs for the older generations to enhance their marital satisfaction.

**Keywords:** healthy aging, marital satisfaction, physical activity, emotional loneliness, perceived social support.

## Introduction

According to statistics, in Iran, the population of old people over 60 years old has increased from 5.3 to 8.1 percent since 1966 to 2011, and it is predicted that by 2005, the population of people over 60 and 65 years old reaches 12.3% and 8.1% of total population, respectively (Nations, 2017).

Therefore, many studies have been conducted on

various topics related to the elderly every year in Iran and other countries all around the world. One of the topics of interest to many researchers is healthy aging.

Healthy aging is a lifelong process of optimizing opportunities to improve and preserve physical, social and mental well-being, independence and quality of life, as well as to enhance successful life-course transitions. This definition includes the physical, psychological, social, and spiritual health of the elderly and shows a positive perspective on

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their health and well-being (Han et al., 2015). In a longitudinal study on healthy aging, Baltimore (2010) stated that healthy aging is more than a disease; it can include physical factors such as drug abuse (Vaillant & Mukamal, 2001), body mass index between 21 and 29 (Depp & Jeste, 2006), psychological factors (e.g., factors decreasing depression and factors increasing resiliency) (Depp & Jeste, 2006; Jeste et al., 2013; Vaillant & Mukamal, 2001), and social factors. Although physical and psychological factors may be indicative of aging more than social factors, one of the most important social variables which have been consistently identified as a predictor of healthy aging is marriage satisfaction (Meng & D'arcy, 2014; Pietrzak, Tsai, Kirwin, & Southwick, 2014). Individuals with more social support and more social interactions are more likely to live longer (Depp & Jeste, 2006). Midlife is a good time for people to evaluate the quality of their relationships. Therefore, in this study, we focused on marital satisfaction and the factors which can be associated with this variable among the elderly.

In research, and also, in everyday life, sustainable and long-term marriage is considered as a key goal of life, an indicator and a protective factor for physical health and well-being as well as a sign of progress and success in the old age (Carr & Springer, 2010; Walker & Luszcz, 2009). Therefore, high quality marriage, especially for the elderly (Umberson, Williams, Powers, Liu, & Needham, 2006), has many benefits, including higher physical and mental health (Holt-Lunstad, Birmingham, & Jones, 2008), effective protection against stress (Schmitt, Kliegel, & Shapiro, 2007), more happiness, higher quality of life and more family well-being (Lawrence, Rogers, Zajacova, & Wadsworth, 2019), and ultimately, less physical and verbal aggression and higher family interactions and communication (Yucel & Koydemir, 2015). What is important in marriage is the feeling of marital satisfaction. It is important to examine marital satisfaction among the elderly since as the global population grows older, the number of

old couples will increase (Weishaus & Field, 1988). Marital satisfaction is defined as an individual's overall assessment of happiness or satisfaction with his marital relationship (Schoen, Astone, Kim, Rothert, & Standish, 2002). Various factors affect marital satisfaction in old age. The current study mostly focuses on factors such as perceived social support, feeling of loneliness and physical activity, which are investigated in detail in this article.

Fincham and Bradbury (1990) hypothesized that social support plays an important role in couples' evaluation of marital satisfaction. Therefore, if this assumption is correct, there can be a relationship between the perception of social support on the part of the husband and marital satisfaction (Acitelli & Antonucci, 1994). Perceived social support is defined as the perception of a person as a member of a social network in which she/he offers and receives help, affection, and commitment (Farahbakhshbeh, Mehri Nejad, & Moazedian, 2019). Social support can be achieved by family members, friends, and specific individuals (e.g., spouse) (Y.-h. Wang et al., 2015). Therefore, since old age is associated with changes in roles, financial conditions, and health status, older couples who have enjoyed high social support from their spouses, family, children, and friends have greater marital satisfaction due to the availability of financial and emotional supports (Polenick et al., 2017; Silverstein & Giarrusso, 2010). Experimental studies also showed that social support and lasting relationships with spouse, family members, relatives, friends and community can improve the elderly's feelings of belonging and connection, reduce the feeling of loneliness, and ultimately bring happiness and satisfaction to life (Kong & You, 2013; Shen & Yeatts, 2013). Other studies also showed a positive relationship between social support and marital satisfaction among older adults (Roh, 2010; Yoon & Lee, 2006).

Perceived social support can play very important role in the physical activities of the elderly and their ability to live independently (Chogahara, Cousins,

& Wankel, 1998). According to World Health Organization (WHO), physical activities refer to any movement which is created by the movement of a skeletal muscle and consumes energy. These include sports, games, and the activities which are part of daily life, work, and leisure (WHO, 2010). In this regard, Chogahra, et al. (1998) examined 29 studies on the impact of social factors on physical activities. They concluded that social support has a positive relationship with commitment and intention to do physical activities (Chogahara et al., 1998). Kouvonon, et al. (2012) reported that older individuals with high emotional and social support and those close to them were familiar with the guidelines for physical activities; even five years following the guidelines, they (i.e., the elderly) were still conducting physical activities (Kouvonon et al., 2012). Eyler, et al. (1999) found that high social support from friends and family was significantly associated with the increased levels of physical activities in women (Eyler et al., 1999).

With regard to the relationship between physical activities and marital satisfaction, the results of a study showed that married people exercise more than their single counterparts (Satariano, Haight, & Tager, 2002). Physical activities benefit physical health, especially for the elderly (Sargent-Cox, Cherbuin, Morris, Butterworth, & Anstey, 2014). Brown, McGuire and Voelkl (2008) reported that older people who had a strong attachment to physical activities improved their life satisfaction and their physical performance. In addition to personal benefits (i.e., physical health), physical activities may provide unique benefits for couples (Brown, McGuire, & Voelkl, 2008). In this regard, the results of some research showed a very strong relationship between marital satisfaction and physical activities - such as some sports in which both couples involved. The reason for this relationship may be the fact that couples have more time to talk to each other, do more joint activities, and face fewer negative marital occasions in their life, which eventually

leads to increased marital satisfaction (Van Vleet & Feeney, 2015). Other studies on intimacy in marital relationships also showed that couples who had joint physical activities had more self-esteem and expressed their emotions to their spouses. Thus, their marital satisfaction increased (Laurenceau, Barrett, & Rovine, 2005)

Loneliness is also another factor affecting marital satisfaction in the elderly. Loneliness is an unpleasant emotional experience (Saffarinia, Zare, Alipour, & Moghtaderi, 2019), which increases with age (Dykstra, Van Tilburg, & Gierveld, 2005). Broese van Groenou (2016) showed that one out of six older men and women reported severe to moderate loneliness, indicating that loneliness is normal in the elderly. However, one of the strongest protective factors against loneliness for the elderly is marital satisfaction (de Jong Gierveld & Broese van Groenou, 2016). Marital satisfaction plays much more important role than other factors leading to loneliness in the married life of the elderly (Fokkema, De Jong Gierveld, & Dykstra, 2012; Sundström, Fransson, Malmberg, & Davey, 2009). In other words, it is the marital satisfaction which determines whether the relationships would protect the elderly from loneliness or actually strengthen and enhance loneliness among them (Ayalon, Shiovitz-Ezra, & Palgi, 2013). For instance, the results of some studies have shown that disturbing and irritating behaviors from spouse can increase the partner's loneliness, while high support, low pressure, and low marital conflict can lead to the decreased loneliness (Chen & Feeley, 2014; Shiovitz-Ezra, & Leitsch, 2010).

Moreover, the results of another study indicated a negative correlation between loneliness and perceived social support (Kuhirunyaratn, Pongpanich, Somrongthong, Love, & Chapman, 2007). The elderly who received more social support reported lower levels of loneliness (D. Wang, Dong, Zhou, & Shen, 2004). For instance, a study on the importance of family members' support reported that older people who had high support from their

family members felt less lonely and had greater well-being and mental health (Dean, Kolody, Wood, & Matt, 1992), which shows the importance of family support for the elderly.

Based on these findings, variables such as social support, emotional loneliness and physical activity are related to marital satisfaction. Marital satisfaction is one of the most important variables in the health psychology and the literature related to marital satisfaction emphasize the relation between marital satisfaction and mental wellbeing, especially in late-life couples (Whisman & Uebelacker, 2009). For example, various studies have reported that low marital satisfaction is related to the increased risk of depression (Proulx, Helms, & Buehler, 2007; Whisman & Uebelacker, 2009). So many studies have identified high marital satisfaction as a predictor for mental well-being and positive psychology (Proulx et al., 2007). In this regard, many studies have investigated this variable and its important effects on mental and physical health of

married couples.

However, although some studies have been conducted on social support, marital satisfaction, and loneliness, few studies examined these variables among the elderly in a single study in the context of Iran. In addition, the present study can enhance the existing knowledge on the relationship between social support and marital satisfaction through the mediating role of variables of loneliness and physical activities. In fact, the main objective of this study was to present and test a conceptual model based on structural equation modeling (SEM) to explain the interrelationships between the mentioned variables. The second objective was to examine the mediating role of physical activities and loneliness in the relationship between perceived social support and marital satisfaction. Thus, based on the previous literature, a conceptual model was proposed which explains the interrelationships between perceived social support, physical activities, loneliness, and marital satisfaction (Fig. 1). To examine the fitness

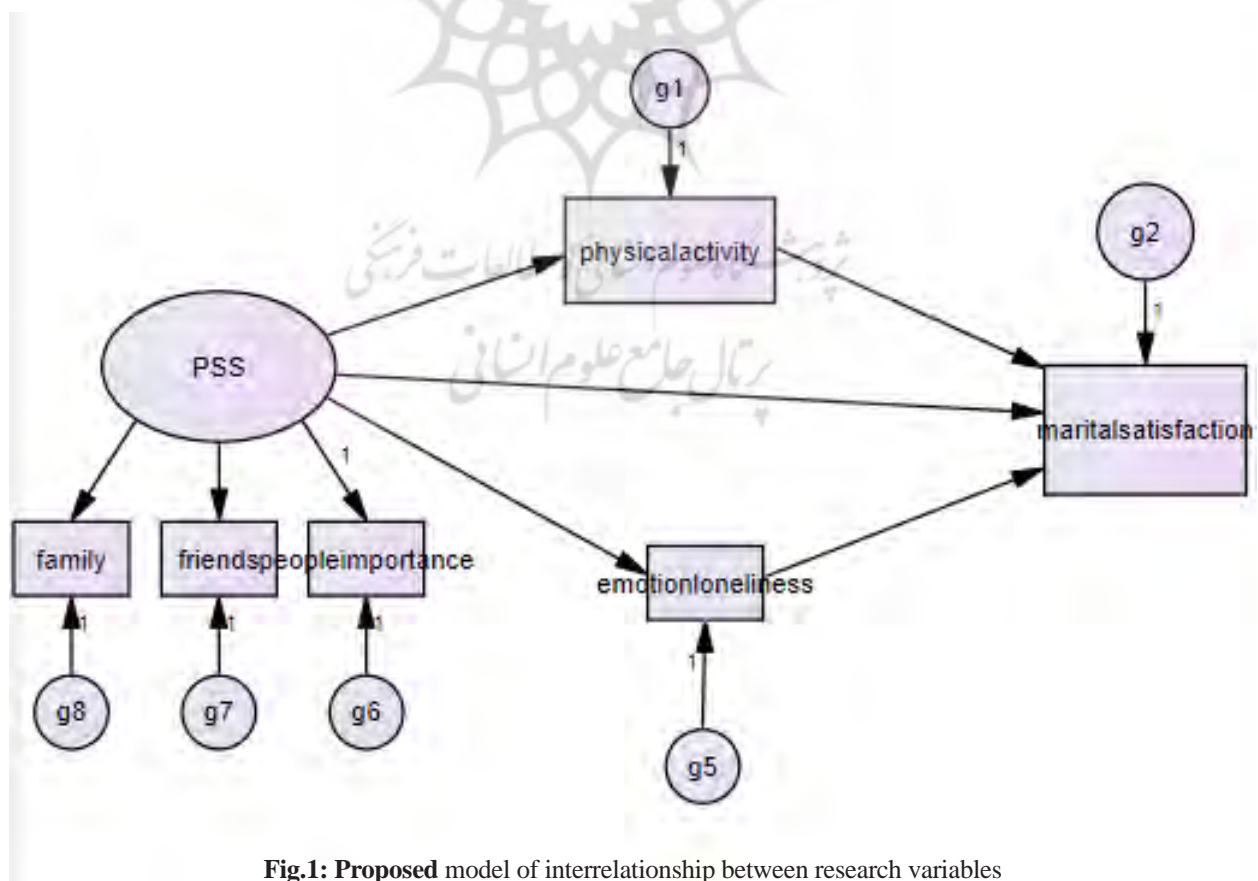


Fig.1: Proposed model of interrelationship between research variables

of the research model, the following 6 hypotheses were addressed.

H<sub>1</sub>: Perceived social support has a positive and significant relationship with physical activity.

H<sub>2</sub>: Physical activity has a positive and significant relationship with marital satisfaction. H<sub>3</sub>: Perceived social support has a negative and significant relationship with emotional loneliness.

H<sub>4</sub>: Perceived social support has a positive and significant relationship with marital satisfaction.

H<sub>5</sub>: Emotional loneliness has a negative and significant relationship with marital satisfaction.

H<sub>6</sub>: Social support is indirectly related to marital satisfaction through emotional loneliness and physical activity.

## Method

This research study is applied in terms of objective, and descriptive-correlational in terms of method (using structural equations). The statistical population of the study consisted of all elderly in the Daycare Centers affiliated with the Welfare Organization in Shahrekord and Farsan in 2019. Daycare centers are places created to offer recreational, social and other related services to the elderly during work hours for five days each week. The elderly people referring to these centers return to their homes at the end of work hours. These centers were selected for several reasons. The first reason was the fact that, according to their medical files, clients of these centers often have good mental and physical health and can be considered as a representative sample of healthy elderly population. Furthermore, since the current study is focused on marital satisfaction and its variables, it was necessary for participants live with their families in order to properly measure variables such as social support and feelings of loneliness. And finally, access to elderly individuals, especially female elderly, was easier in these centers compared to other gathering centers.

There were two care centers in the city and the total number of the elderly (men and women) was

400. Using Cochran's formula, the sample size was determined 195 at the significance level of 0.05. The researcher randomly distributed 200 questionnaires in these centers. The inclusion criteria included: 1) personal willingness and satisfaction to participate in the study, 2) the lack of physical disability, visual, and hearing problems (diagnosed and confirmed by referring to their medical records), 3) the lack of chronic diseases, memory impairment and Alzheimer's disorder (diagnosed by referring to their medical records), and 4) the elderly's literacy. Then, the research questionnaires were distributed among the eligible elderlies in each center and were collected by the researcher. Furthermore, a trained student in the field of consultation accompanied the researchers in each center in order to assist participants who had trouble in reading and understanding the questions and putting the participants' answers in their questionnaires. The exclusion criteria for this study included not answering 20% of the items in the questionnaire or a lack of desire for continued participation in the study. Although the researcher was present and carefully reviewed the questionnaires, and ultimately, 20 questionnaires were removed from the research study since the elderly did not answer the majority of the questions. Finally, data collected from 180 questionnaires were analyzed.

## Ethical statement

The purpose of the study was clarified for each participant and all of them were assured about the privacy and the confidentiality of the data.

They were also feel free to quit the study at any time they would like during the study.

## Measures

### 1. Relationship Assessment Scale

This scale was developed by Hendrick (1988) in 7 items to assess individuals' overall satisfaction with their marital relationship. Each item was scored in a 5-point Likert scale, from 1 (very low) to 5 (very

high). Therefore, the lowest score of each subject was 7 and the highest score was 35. High scores indicate high satisfaction, and low scores indicate low satisfaction in the relationship between couples. The internal consistency coefficients of the scale in various studies have been reported between 0.85 and 0.91, indicating the high reliability of the scale in measuring the satisfaction of an intimate relationship (Hendrick, 1988). In the context of Iran, Mousavi and Dehshiri (2016) reported the calculated Cronbach's alpha of this scale 0.88 (Mousavi & Dehshiri, 2015). Moreover, in the present study, the Cronbach's alpha of this scale was 0.81. It is worth mentioning that items in this scale were translated using simple and fluent Persian language to make it understandable for individuals with limited literacy.

## **2. Multidimensional Scale of Perceived Social Support**

This scale was developed by Zimet, Dahlem, Zimet and Farley (1988) and consists of 12 items. Each item has a score of 1 to 7. It contains three subscales of friends, family and spouse or a specific individual. In a study conducted by Zimet, et al. (1988), the Cronbach's alpha coefficients for the subscales of friends, family and spouse or a specific individual were reported to be 0.93, 0.95 and 0.93, respectively (Zimet, Dahlem, Zimet, & Farley, 1988). In Iran, the validity and reliability of this scale was investigated by Salemi and Nikpour. Their results indicated that this scale includes three factors, each including four items with KMO coefficient of 0.87 and Bartlett's coefficient of 2485.89 ( $P \geq 0.0001$ ). Furthermore, the Cronbach's Alpha coefficients for three dimensions of social support for family, friends and important individuals were .0.86, 0.86 and 0.82, respectively (Salimi, Joukar, & Nikpour, 2009). This scale has been used in various studies on elderly in Iran and other countries and is translated in simple and fluent language which makes it possible for people with limited literacy skills to understand.

## **3. Short Form of Social and Emotional Loneliness Scale for Adults**

This scale was designed and developed by DiTommaso, Brannen and Best (2004) based on Weiss's classification. This scale includes 15 items and three sub-scales of romantic loneliness (five items), family loneliness (five items) and social loneliness (five items). Emotional loneliness total score is obtained by summing up the subscales of romantic loneliness and family loneliness. For each item, there are 5 options, from completely disagree (score 1) to completely agree (score 5). The developer of this scale reported the Cronbach's alpha coefficient between 0.87 and 0.90, which indicates the appropriate internal consistency of the scale. The results of factor analysis indicated that the three-factor model of the SELSA-S provided the best fit to the data (Ditommaso, Brannen, & Best, 2004). In Iran, Jowkar and Salimi (2011) calculated the validity and the reliability of this scale. In the Iranian version, question number 15 is removed and this scale has 14 items. They reported Cronbach's alpha coefficients for romantic, social, and family loneliness subscales 0.92, 0.84, and 0.78, respectively. The results of the factor analysis approved three factors of the SELSA-S scale, describing loneliness, feeling in romance, in society, and in family (Jowkar & Salimi, 2011). In the present study, the emotional loneliness dimension, which is the sum of the subscales of romantic and family loneliness, was used. In the present study, the Cronbach's alpha of this scale was 0.83. This scale is specific for adults and the understandable level of the questions makes it suitable for people with elementary school level.

## **4. Godin's Leisure-time Exercise Scale**

In this study, Godin's Leisure-time Exercise scale (1985) was used to measure the participants' physical activity. In this scale, the participants are asked to determine the frequency of their physical activity which lasts more than 15 minutes during the week

based on the three levels of intense activity (e.g., running), moderate activity (e.g., brisk walking), and light activity (e.g., slow swimming). This single-factor scale is obtained by adding 3 items. In scoring each item, intense activity is assigned 9; moderate activity is assigned 5, and light activity is assigned 1. In a study by Yousefi, Asadzadeh and Azadi (2017), the Cronbach's alpha of this scale was 0.79 (Yousefi, Asadzadeh, & Azadi, 2017). In the present study, the Cronbach's alpha of this scale was 0.70. This scale evaluates physical activity level and inquiries about the frequency of weekly exercises such as running, football and biking. As a result, this scale will be suitable for the sample in the current study.

### Data collection procedures

To conduct the present study, the necessary coordination was made by the General Welfare organization of Chaharmahal and Bakhtiari province and the Welfare organization of Shahrekord and Farsan counties. To this end, the objective of the study, the instruments and the way of implementing them were explained. It was decided to administer 200 questionnaires randomly to the 6 care centers

for the elderly in Shahrekord and Farsan. Moreover, the researcher attended the centers to examine the participants' records and to check them in regard to the inclusion criteria.

The following section shows the demographic characteristics of the sample in this study (table 1).

Of 180 participants, 74 were male and 106 were female in the age range of 53-75. The number of children in this age group varied from 1 child to 10 children. All 108 participants completed the primary school, 25 had finished their middle school, 27 had high school diploma, and 20 had bachelor's degree.

### Results

Descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation coefficient and structural equation modeling) were used to analyze the data through SPSS 23 and AMOS 23 software.

As it is evident in Table 2, there was a significant relationship between marital satisfaction and all variables of this study ( $p < 0.001$ ). In addition, the relationship between emotional loneliness and marital satisfaction was negative and significant.

**Table 1:** Demographic characteristics of the studied sample

Variable	mean	Standard deviation	minimum	maximum
age	61/78	7/36	53	73
		frequency	Frequency percent	
gender	male	74	41/1%	
	female	106	58/9%	
	total	180	100	
education level	completed the primary school	108	%60	
	Middle school	25	%13/9	
	High school diploma	27	%15	
	bachelor's degree	20	%11/1	
	total	180	%100	
number of children	1-3	54	%30	
	4-6	96	%53/3	
	7-10	30	%16/7	
	total	180	%100	

Moreover, other variables had a positive and significant relationship with marital satisfaction. In the following section, the fitness of the model is examined.

The proposed model in this study included four variables, one of which was predictor (independent) variable, one was the dependent variable, and two were mediating variables. Proposed model fit was based on the combination of fit measures (see Table

positive and significant effect on physical activity; for the second hypothesis, marital satisfaction ( $\beta = 0.170$ ) has a positive significant effect on physical activity; for the third hypothesis, social support has a negative and significant effect only on emotional loneliness ( $\beta = 0.217$ ); and for the fourth hypothesis ( $\beta = 0.532$ ), marital satisfaction had a negative and significant relationship with emotional loneliness. Therefore, hypotheses 1 to 4 of this study were all

**Table2:** The descriptive statistics for independent, mediator and dependent variables

Variables	Descriptive Statistics					
	Mean	Std. Deviation	Correlations among variables			
			1	2	3	4
Perceived social support	12.91	3.00	-			
Emotional loneliness	18.87	6.61	-0.67**	-		
Physical activity	12.78	3.74	0.21**	-0.20**	-	
Marital satisfaction	23.95	4.82	0.52**	-0.67**	0.30**	-

\*\*  $p < 0.001$

2). The ratio of  $\chi^2$  in degree of freedom is 2.38, while the acceptable range is between 2 and 3. The values less than 2 are considered very appropriate. Another important index is RMSEA, which was 0.08 in this study. Since the acceptable range is between 0.05 and 0.08, this study's index is acceptable. Other model-data fit indices in this study showed the overall fit of the model to the available data (CFI = .984, IFI = .984, AGFI = .912, GFI = .975). Furthermore, Figure 1 shows

confirmed.

In the next part, the fifth hypothesis of this study is tested. The presence of intermediary pathways was one of the basic assumptions of the proposed model in the current study. In order to test this hypothesis, Bootstrap test was used

to examine the mediating role of emotional loneliness and physical activity in the relationship between social support and marital satisfaction.

**Table 3:** Proposed model fit based on fit indices

$\chi^2$	df	( $\chi^2/df$ )	CFI	IFI	AGFI	GFI	RMSEA
14.32	6	2.38	0.984	0.984	0.912	0.975	0.08

the standard regression coefficients of the model.

Table 4 shows the standardized estimates and other measured variables.

As can be seen in the results presented in table 3, test results for research hypotheses indicate that for the first hypothesis, social support ( $\beta = 0.217$ ) has a

Table 5 shows Bootstrap results for the intermediate pathways proposed in the present study.

According to Table 5, the confidence interval for emotional loneliness as a variable mediating the relationship between social support and marital satisfaction was 0.496 to 0.817. In addition, the



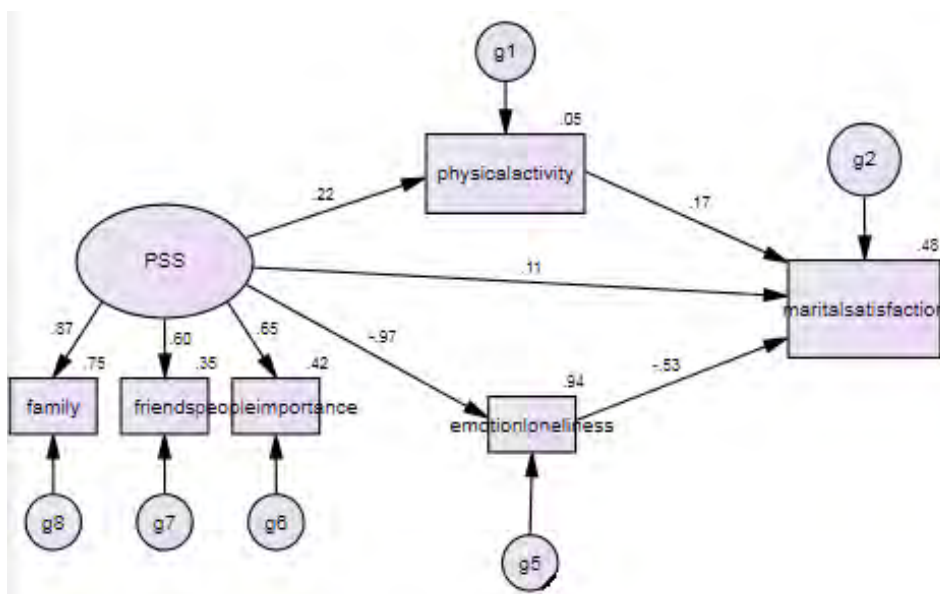


Fig. 2: The result of fitness of the proposed research model

Table 4: The direct effects between variables in the proposed model

Parameters	Standardized estimates	Unstandardized estimates	S.E	C.R	P
social support → physical activity	0.217	0.873	0.300	2.906	0.004
social support → emotional loneliness	-0.970	-6.902	0.705	-9.784	0.000
social support → marital satisfaction	0.110	0.572	0.993	0.576	0.05
marital satisfaction → physical activity	0.170	0.220	0.071	3.099	0.002
marital satisfaction → emotional loneliness	-0.532	-0.389	0.141	-2.759	0.006

confidence interval for physical activity mediating the relationship between social support and marital satisfaction was 0.025 to 0.137. The confidence level for this interval was 95, and the number of re-sampling was 5000. Therefore, according to the

level of significance ( $P < 0.05$ ), emotional loneliness and physical activity played mediating roles in the relationship between social support and marital satisfaction, which was statistically significant. Therefore, fifth hypothesis of this study was also

Table 5: Data regarding effects

	Total effects	Direct effects	Indirect effects	Lower bounds	Upper bounds	P value
PSS → E L → M S	0.835	0.194	0.641	0.496	0.817	0.005
P S S → PA → M S	0.835	0.765	0.070	0.025	0.137	0.005

Abbreviations: PSS= perceived social support; PA = physical activity; E L= emotional loneliness; M S = marital satisfaction

confirmed.

### **Discussion and conclusion**

The objective of this study was to investigate the effect of social support on marital satisfaction with the mediating role of emotional loneliness and physical activity. Based on the results of the present study, there was a positive and significant relationship between social support, physical activity, and marital satisfaction. Moreover, there was a significant and negative relationship between emotional loneliness and marital satisfaction. The first hypothesis of this study, stating that there is a positive and significant relationship between perceived social support and physical activity, was supported. This result is consistent with the results of previous studies (Chogahara et al., 1998; Kahn et al., 2002; Ståhl et al., 2001). Other studies have also shown that social support from family and friends concerning physical activity lead to a high level of these activities by the elderly in the long run (Kim, McEwen, Kieffer, Herman, & Piette, 2008). Therefore, if the elderly receive more support, especially from their family, they are more likely to be physically active (G. L. Smith, Banting, Eime, O'Sullivan, & Van Uffelen, 2017). Furthermore, those receiving higher emotional support are more likely to enjoy physical activities, resulting in a greater motivation to perform these activities in long term (Haughton McNeill, Wyrwich, Brownson, Clark, & Kreuter, 2006). Therefore, it is very important to encourage the elderly to participate in physical activities because, according to various studies, these activities postpone the decline of the elderly's performance. Therefore, this factor has a positive effect on improving the physical and mental health and happiness in their lives (Kadariya, Gautam, & Aro, 2019; Makino et al., 2015). In fact, health is very influential in the married life of the elderly because research has reported a link between physical-mental health and psychological well-being and marital satisfaction (Carr, Freedman, Cornman, & Schwarz, 2014; Margelisch, Schneewind, Violette, & Perrig-

Chiello, 2017). Thus, in addition to the effect of physical activity on physical and mental health, and consequently, on marital satisfaction, these activities themselves allow couples to spend more time talking to each other, doing joint activities, and experiencing less negative marital occasions (Van Vleet & Feeney, 2015). In addition, physical activity increases self-representation and expression of feelings to the partner and, thus, increases the marital satisfaction (Laurenceau et al., 2005). Therefore, according to these results, the second hypothesis of the study - i.e., there is a positive and significant relationship between physical activity and marital satisfaction - was also supported.

The finding indicating negative relationship between perceived social support and loneliness (i.e., the third hypothesis) is in line with the findings of Smith (2012) and D. Wang, Dong, Zhou, & Shen (2004). Since humans are social creatures and since feeling of belonging is one of the essential needs of humans beings (Baumeister & Leary, 1995), this need can result in maintaining a minimum of positive, stable and important interpersonal relations in people (Heinrich & Gullone, 2006). Therefore, the feeling of loneliness is created when elderly people are faced with problems regarding the quality and quantity of their important and essential interactions with their families, friends and other important individuals (such as spouse). Problem in these interactions means that the social support received by the elderly from family, friends, etc. is decreased, which results in increased feelings of loneliness. Smith (2012), on the other hand, admitted that the loss of the spouse and friends, or the loss of the ability to walk and move can lead to loneliness due to the reduced social support in the elderly (J. M. Smith, 2012). Therefore, it can be stated that social support can act as a protective factor against loneliness in the elderly.

Furthermore, the fourth hypothesis (i.e., there is a positive and significant relationship between social support and marital satisfaction) was supported. Recent research has shown that the quality of

marriage and support is similarly important for both couples (Umberson et al., 2006). Therefore, in marital satisfaction, the roles of social networks and the support of certain individuals are very important as a protective factor. For example, one study has shown that higher number of friends and better interactions with them can result in social trust, reduced stress, improved well-being and better health, especially in the elderly. Furthermore, from a support perspective, having a large number of friends and better interactions with them improves the possibility of receiving support when required in the elderly. This can then result in improved life satisfaction in these people (Amati, Meggiolaro, Rivellini, & Zaccarin, 2018). Since friends are considered as part of social capital of each individual, having a high-quality relationship with friends results in closer and more supportive relations and feeling of security, especially during old age. On the other hand, support from family can also play an important role in life satisfaction of the elderly. The importance of family and its role will increase with age because older individuals require more support and help from their families. During the old age years, family can support the elderly in various ways such as helping in nutrition, medication, performing physical activities and other aspects of their lives (Morgan & Kunkel, 2007). Increased support from the family for the elderly reduces their worries and increases their certainty and trust during older years which results in increased life satisfaction. Moreover, the fifth hypothesis (i.e., there is a negative and significant relationship between loneliness and marital satisfaction) was confirmed. The findings of various studies have reported a negative and significant relationship between marital satisfaction and loneliness among the elderly (De Jong Gierveld, Broese van Groenou, Hoogendoorn, & Smit, 2009; Shiovitz-Ezra & Leitsch, 2010). In this regard, it should be noted that as spouses grow older, they leave their jobs for physical and legal (i.e., retirement) reasons and reduce their social relationships. However, they spend more time and

energy on important relationships, such as their marital relations (Carr et al., 2014), which leads to the decrease of loneliness in these people. However, despite the fact that marriage is considered as a protective shield against loneliness, most married people feel lonely (De Jong Gierveld et al., 2009). In other words, sometimes, the loneliness of one partner can affect the other partner which can result in decreased marital satisfaction among elderly couples. One of the reasons for this phenomenon is the presence of stressor factors in married life (such as unemployment, losing a child) or the interactive effects (loneliness of one partner and its effect on the other partner in marriage.) In other words, the increase in loneliness of one partner and increase in the frequency of these feelings reduce the quality and quantity of interactions between couples. If the other partner is not sensitive to the loneliness of the other party, and instead resorts to avoidance, criticism or abandonment, these actions can enhance the feelings of loneliness in the married life among elderly couples (Carr et al., 2014).

Finally, the sixth hypothesis (i.e., perceived social support is indirectly related to marital satisfaction through loneliness and physical activity) was confirmed ( $p < 0/005$ ). To explain this finding, it can be stated that when there is social support from friends, family and specific individuals (e.g., the spouse) through participation in physical activities, the elderly will guarantee their physical and mental health, and will have more communication and social support on the part of their friends. Thus, their marital satisfaction would improve. It should be noted that one of the possible reasons for the low indirect effect of social support on marital satisfaction through physical activity is that joint physical activity was not evaluated in this study and only the activities of one of the spouses performing alone were evaluated because the studies mentioned in this study showed the effect of joint physical activity on marital satisfaction of couples.

Social support was also indirectly related to marital

satisfaction through loneliness ( $p < 0/005$ ). In other words, by facilitating communication and social support for the elderly, they feel less lonely due to the negative relationship between loneliness and marital satisfaction, which increases their life satisfaction. Therefore, according to the findings of this study, it is suggested that in order to improve health and mental wellbeing of elderly people, relatives and families of these people pay special attention to family factors such as marital satisfaction of elderly couples and factors affecting this satisfaction, such as social support, emotional loneliness, and physical activity. Similar to other research studies, the present study is not without limitations. First, self-report tools were used, which are not free from limitations, such as, inaccurate reporting and social desirability bias. Second, the sample was limited to Shahrekord and Farsan cities. Thus, generalizing the findings to other elderly population in Iran should be done with caution. As noted earlier, all participants were lived in the Shahrekord and Farsan cities of Iran; consequently, an analysis of institutionalized older adults or adults from different regions of the country may produce results different from results presented here. Third, these findings only show the relationships between the variables and do not specify causal relationships. And finally, in dealing with measuring physical activity, only the physical activity of one of the couples was examined and the joint physical activities that both couples can do with each other (such as walking together, light exercise and ...) was not evaluated.

Further similar studies with more representative samples are necessary to make the results more generalizable. In addition, as opposed to the quantitative research methods utilized in the present investigation, qualitative research methods may enhance future studies. It is also suggested that a questionnaire is used in future research to evaluate the physical activities of the elderly in pairs.

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