

**INTERCONNECTION BETWEEN SOCIO-ECONOMIC FACTORS AND ELDERLY'S  
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**ABSTRACT**

The elderly mostly suffer from health issues such as chronic illnesses, progressive disabilities and ailments. Although the importance of socio-economic status on the elderly's health is clear, the involved factors remains to be clear. Clarification of the effects of socio-economic factors on the health of the elderly would be helpful for decision makers and decent resource allocation. **Methods:** In the current research, we conducted cross-sectional studies in Tehran, Iran. Participants were collected randomly and the data were obtained by questionnaire. Internet and library searches were used to make and improve an appropriate questionnaire. To approve the content validity of questionnaire, we did the literature review and interviewed eight experts and professor of health care management. Questionnaires were distributed among 140 elderly who were older than 60 year and lived in nursing home and 280 elderly who have the same age criterion but lived with their families. SPSS software was used for data analysis. **Results:** 406 out of 420 questionnaires were filled by participants, which presents 96.6% responsibility. Our data shows a statistical significant correlation between socioeconomic status and mental, physical and social health. **Conclusion:** Here we show that the elderly's marital status, educational level, occupational type, and property ownership are affective on the all of physical, social and mental health status of the elderly's. in addition, the occupied married elderly with the master/doctorate degree have better health status in compare with other participants.

**KEYWORDS:** socioeconomic status, social, mental, physical health and elderly.

**INTRODUCTION**

It was previously showed that people with lower socio-economic status have worse health condition compare with people with higher socio-economic status.<sup>[1]</sup> While the most attention is primary focused on the middle age, this attention is shifted more towards elderly recently.<sup>[2]</sup>

In the developing countries with rapid population aging, it is critical to determine the health determinants in the older adults in order to find a proper response to the growing health related needs with limited resources and financial supports.<sup>[3]</sup> Enacting of birth control law in 22 years ago in Iran caused gradually reduction in the portion of people who are less than 15 years in society. This also in turn caused increase of middle age population. By the continuation of this trend, population pyramid will change towards an aged population.<sup>[4]</sup>

Elderly people usually suffer from physical disabilities and ailments, so detecting of factors, which affect the physical, mental and social health of elderly can be useful for planning and effective resource allocation for this population.

Although it already have been found that people with low socio-economic status (SES) have less accessibility to the health support, and are exposed to more natural disasters,<sup>[5,6]</sup> the effect of SES on the elderly is not clear. It is known that the mortality and morbidity rate in the elderly with low SES is higher,<sup>[7,8,9,3]</sup> however, the factors that are effected directly by SES and causing higher mortality and morbidity is not known. Therefore, based on the importance of SES on health status, we need to have a good understanding of factors that affected SES. Although some studies in Italy, UK, US, Finland and Sweden found a few significant factors such

as education, occupation, housing tenure, income and disabilities affecting SES,<sup>[10-17]</sup> still it seems that more factors such as mental and social are involves, which never have been investigated. While the importance of known affecting factors on SES is obvious, still we need to find a way to manage those factors as well. Regarding the lack of knowledges about the factors having decisive effect on SES, and how to manage the known factors, the aim of this study is to find out the importance of the elderly mental and social status on SES. We also examined the criteria that affect the known important factors to find out a way to modulate them.

## METHODS

The current cross-sectional study was conducted in Tehran. The participants were randomly selected and data was collected through questionnaire. The questionnaire's validity was approved by experts' panel, including professors and scholars of health care management. The survey's comprehensibility was tested on 20 participants from the statistical population who had not been included in the statistical sample. The questionnaire's reliability was 0.62 based on Spearman correlation coefficient.

We used questioner in order to evaluate the health status of the participants. We used both online and library research to formulate the questionnaire, which later on was revised by specialists and the irrelevant questions were omitted. The content validity of the questionnaire was determined by doing the interview with the hospital management specialist and texture researches. We assessed the reliability of the questionnaire by performing a pilot study on the fourteen participants.

The health status evaluation was done using a questionnaire. The questionnaire included 72 questions in five sections: 1- demographic characteristics (23 questions), 2- ADLs questionnaire, 3- physical health characteristics (15 close end questions), 4- mental health characteristics (12 questions in Likert scale), 5- social health characteristics (14 questions in Likert scale), and 6- physical, mental and social self-evaluation questions (14 questions in Likert scale).

The included elderly were older than 60 years. One hundred forty people were randomly selected from elderly who lived in nursing home. The sample size from

each nursing home was related to the population of the nursing home. Two hundred eighty individuals were selected from the households at different city area, the 3<sup>rd</sup>, 6<sup>th</sup>, 11<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> areas of Tehran. Among 420 questionnaires, 406 questionnaires were accomplished, which indicates 96.6% responsibility rate.

SPSS software was sued to analyze data. All data are expressed in mean  $\pm$  SEM. Unpaired student's t tests with Welch's correction were used to determine significant differences among two groups. For multiple group comparisons one-way ANOVA followed by Newman were used.  $p < 0.05$  was regarded as a statistically significant value

## RESULTS

Participants' demographic characteristics were as follows: %52.7 (214 participants) male and 47.3(192 participants) female. Most of participants (%50.7) were 66-77 years old. 34% (138 individuals) had elementary education. %52 (211 individuals) were single. Half of them (%50.2) had 3-5 offspring. In addition, %48.5 (197 individuals) were home owner. Based on the responses to the physical difficulties related questions, in the questionnaire, the most common illnesses among the elderly were arthritis and arthroses (34.5%), which followed by visual defects (30%). Most of participants (91.6%) did not experience stroke. In addition, the responses to the mental issues- related questions relieved that the most prevalent mental complaint in the elderly is sleep disorder (33.5%), followed by depression (20.7%), and finally headache and stress (18.2%). Our results regarding the social activity of our patricians showed that the majority of the elderly (69.5%) has no attitude to go to the cinema or theater, and 28.6% of the participants take part in funerals. Moreover, most of the participated elderly (%58.4) did not need any help for making-up and brushing hair. Most of them (%57.9) did not need any help for dressing up

Table 1 shows the correlation between the average of health status and marital status. The correlation was evaluated by using t-test. The results identified the statistical significant correlation between health and marital status ( $p < 0.001$ ). Data shows that the married elderly have a better physical, mental and social health status.

**Table 1: Correlation between health status and marital status.**

		N	Mean	STD	T	Df	P-value
Physical health	Married	195	12.2	2.21	3.57	404	P<0.001
	Single	211	11.27	1.99			
mental health	Married	195	30.14	8.61	9.77	404	P<0.001
	Single	211	21.36	9.42			
Social health	Married	195	20.97	9.71	9.79	404	P<0.001
	Single	211	11.51	9.72			

T-test was used to analyze the correlation between marital status and average of health status.

Table 2 shows the correlation between health status and educational level. The educational level of our participants varied from illiterate to doctorate degree.

Here we show that the elderly with the master/doctorate degree have a better health status in all of the physical, social and mental health aspects. According to the results, there was a significant correlation between educational level and the health status ( $p < 0.001$ ).

**Table 2: Correlation between health and educational level.**

Education	N	Correlation between physical health and educational level			Correlation between social health and educational level			Correlation between mental health and educational level		
		Mean	STD	Result	Mean	STD	Result	Mean	STD	Result
Illiterate	47	11.72	1.90	F=5.16 P<0.001	12.59	10.31	F=2.7 P<0.001	24.51	10.10	F=0.725 P<0.001
elementary literacy	138	11.42	2.15		15.47	10.44		24.95	9.88	
middle school-high school	67	11.11	1.70		15.14	10.88		25.73	9.99	
Diploma-undergrad student	69	11.42	2.28		18.37	11.79		27.20	10.02	
master, doctorate	85	12.49	2.18		17.75	10.32		25.75	10.37	
Total	406	11.63	2.13		16.05	10.80		25.58	10.04	

The results were evaluated by using One-way ANOVAs.

Table 3 shows the correlation between health status and home ownership. According to the results, there was a significant correlation between the mentioned determiners and the health status ( $p < 0.001$ ). The

individuals who lived in their own house had better mental healthiness compared to others.

**Table 3: the effect of home ownership on the elderly's health status.**

House tenure	N	Correlation between physical health and home ownership			Correlation between social health and home ownership			Correlation between mental health and home ownership		
		Mean	STD	Result	Mean	STD	Result	Mean	STD	Result
Owner	197	11.84	2.20	F=15.004 P<0.001	20.49	9.64	F=127.34 P<0.001	31.26	8.61	F=136.98 P<0.001
Renter	85	12.30	1.85		20.55	8.31		25.62	7.65	
Others	124	10.83	1.94		5.53	6.32		16.52	6.27	
Total	406	11.63	2.13		16.05	10.80		25.58	10.04	

One-way ANOVAs was used to compare average of health status in the different home ownership.

Table 4 shows the correlation between health status and occupational type. The elderly participated in the study have a varied occupational status, some of them were

housekeeper, and the others were either occupied or retirees. Here our results show that the elderly who are still occupied have a better health status than either the housekeeper or retired ones. According to the results, there was significant correlation between the occupational type and the health status ( $p < 0.001$ ).

**Table 4: Correlation between health and occupational type.**

Occupation	N	The correlation between physical health and occupation type			The correlation between social health and occupation type			The correlation between mental health and occupation type		
		Mean	STD	Result	Mean	STD	Result	Mean	STD	Result
Housekeeper	129	11.31	2.04	F=5.87 P<0.001	15.1	10	F=8.56 P<0.001	25.10	9.42	F=13.70 P<0.001
Retired	218	11.60	2.15		15.2	11.6		24.22	10.21	
Employed	59	12.44	2.07		21.1	10.1		31.64	8.54	
Total	406	11.63	2.13		16.05	10.8		25.58	10.4	

One-way ANOVAs was used for comparing average of health in the different occupation types.

## DISCUSSION

The relation between socio-economic status and different aspects of health is not clear yet. The aim of this study is to facilitate health care scheduling for the elderly by assessing the demographic, socio-economic and health determiner of the elderly in different five geographical regions of Tehran.

Based on our results, the elderly's health status is significantly related to their marital status, educational level, occupational type and property ownership.

In our project, the level of disability was evaluated by using activity of daily living (ADLs) questionnaire. In this study, we found that the most of the participants were capable of doing their personal stuffs like making-up or brushing hair. Our data are similar to Bourne research; found that most of men older than 55 years are able to dress up themselves.<sup>[18]</sup>

Our result about the most prominent illness in the elderly is similar to another study conducted in Tehran in 2008. The results in that study showed that the most prevalent problems in elderly individuals are arthroses, arthritis and optical problem.<sup>[19]</sup>

Social health study of participants indicates that the majority of the participants had no attitude to go to the cinema or funeral. Rodrigues-Laso found that social activities have positive effect on the elderly's social health at south regions of Europe.<sup>[6]</sup> Stinner and et al proposed that living with other family members helps disable elderly to keep their social abilities which results in postponing nursing home admission.<sup>[20]</sup>

According to our finding, there is a significant correlation between health and marital status. Our results showed that the married elderly's physical, mental and social health status is better than the singles. There are different factors affecting the health status of the married elderly, for example, they have their family attention, which will help them to have a better nutritional and hygiene status, and receive a better emergency service. Parallel to our results, Wang mentions that single elderly suffer from more severe depressions.<sup>[21]</sup> Furthermore, Grundy proposed that the marital status has the highest effects on the elderly's mental health.<sup>[22]</sup> However, the prevalence of depression in the elderly is not just related to their marital status. Since in Grant study, results showed that the prevalence of depression is also related to the alcohol abuse during the life.<sup>[23]</sup>

According to our study, there is a significant correlation between educational level and physical, mental and social health status. Higher level of education leads to better health status. The similar results were observed in Latin America, in which the higher educated people had better health status and less disability.<sup>[24]</sup> The same results were observed in Asia as well, in which people with low level of education suffered from low level of

health status.<sup>[25]</sup> Comparing the correlation between SES and health in Mexico and industrialized countries has represented similar data; the higher education are correlated with better physical performance.<sup>[4]</sup> It is also identified that people with higher educational level has less social health defects, which results in more social support and less loneliness.<sup>[19]</sup>

According to our findings, there is significant correlation between the property ownership and physical, social and mental health status. Moreover, the data showed that people who either own their own home or live in a rental home has better physical, mental and social health compared to nursing home residents. Dalstra et.al determined the contributory factors of the elderly's health. They have shown that the renters are not the proper class in order to describe the elderly individuals' health inequalities. On the other hand, tenure housing are more pertinent to describe the health inequalities among the elderly in some countries, particularly Great Britain and the Netherlands.<sup>[2]</sup>

## CONCLUSION

According to the results, the elderly's marital status, educational level, occupational type, and property ownership are affective on the all of physical, social and mental health status of the elderly's. Here we showed that the occupied married elderly with the master/doctarte degree have better health status in compare with other participants.

## Ethical considerations

Ethical issues (including plagiarism, informal consent, misconduct, data fabrication and etc.) have been completely observed by the authors.

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