



## Investigating the Correlation between Self-caring Behavior and Life Quality Associated with the Health of the Elderly Suffering from Diabetes Resorting to the Selected Hospitals of Tehran in 2005-2006

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### ABSTRACT

*Background:* Diabetes may affect the physical performance, development of the side effects of disease, mental state and health status and life quality of patients. Accordingly, the present research seeks to study the correlation between self-caring behaviors and life quality in relation with health of the elderly suffering from diabetes. *Method:* This correlational descriptive research was carried out on 262 elderly suffering from diabetes who resorted to selected hospitals of Tehran by data collection in 2005-06 using demographic information, Toubert and Glasgow self-caring, and life quality of the elderly questionnaires. Descriptive and interpretive statistics (Pearson's correlation coefficient) in SPSS v.16 was used for data analysis. Level of significance was set to 0.05. *Results:* Of the 262 elderly suffering from diabetes, 58% were male and 42% were female with an average age of  $65.78 \pm 5.69$  years old. The average self-caring score was  $44.74 \pm 11.90$  (average) and the life quality associated with health was  $190.52 \pm 28.18$  (relatively good). A positive and significant correlation was also observed between self-caring and life quality associated with health ( $P < 0.0001$ ,  $r = 0.28$ ). *Conclusion:* The results of this research pointed to a significant and positive correlation between self-caring behaviors and life quality associated with health. Thus, the future plans of the country need to pay particular attention to this vulnerable group and propose the necessary strategies to improve the life quality of these people and provide them with special services.

**Keywords:** Self-caring Behavior, Life Quality, Diabetes, Elderly.

### INTRODUCTION

Old age is the slow passage of time when the emotions, performance and mental and physical capabilities of an individual are affected. Demographers have pointed to the age of 60 or 65 years old as the age when the elderly period begins [1]. Considering the health and therapeutic measures taken to change the pattern of diseases in the present century, the population of the elderly is increasing, especially in developing countries like Iran [2]. According to the reports issued by the information center of the UN in Tehran, 4 million and 562 thousand (6%) of the whole Iranian population was composed of people over 60 years old in 2006. This population is expected to reach 26 million and 393 thousand people (26%) by 2050 [1, 3].

Although the elderly period should not be mistaken with a period of suffering and diseases, a large portion of the elderly suffer from chronic diseases such as diabetes [4]. Researches have pointed to an increasing rate of diabetes

among the elderly. On the global scale, 20 to 25% of the people between 60 and 74 are suffering from diabetes [5, 6]. Diabetes is expected to be the main cause of disability among the elderly within the next 25 years [7].

The cases of diabetes are increasing rapidly in developing countries like Iran. Of every 5 Iranians, 1 is suffering from diabetes [8]. This common metabolic disease is the 6<sup>th</sup> cause of death in the world and reduces life expectancy to one third [9, 10]. Following the same increasing trend of immobile life and prevalence of obesity in Iran, diabetes seems to be one of the main and chronic disease during the old age [11, 12].

Diabetes is a chronic disease with acute conditions for the whole life of an individual which can affect the physical performance, development of the side effects of disease, mental and spiritual state, personal, family and social relationships, sexual functioning and health status of those suffering from it. Further to these complications, diabetes affects the social, marital and family relationships and the job of patients and results in a low quality of life [10, 13]. According to WHO, life quality is defined as the picture an individual has in mind of his status in life and cultural grounds and value systems. Life quality represents a scale of physical and social activities and mental health and it is considered to be one of the important indicators and elements of health [14]. Preserving and improving the life quality during the old age is one of the main goals of therapeutic and health services, especially for those elderly with chronic diseases such as diabetes [2].

The life quality during the old age seems to be influenced by various factors such as self-caring behaviors [15]. In diabetes, self-caring includes activities such as adopting an appropriate diet, self-assessment of blood sugar, regular physical activities, and looking after feet [16, 17].

Older age of people and rise of the elderly is one of the advantages of the 21<sup>st</sup> century. The elderly need receive especial attention due to reduction of their capabilities and vulnerability. Self-caring is a major step to enhance awareness and help patients gain individual independence and facilitate their compatibility with their disease [18]. The present research seeks to study the correlation between self-caring behaviors and life quality associated with health of the elderly among those suffering from diabetes in the selected hospitals of Tehran.

## MATERIALS AND METHODS

This is a descriptive, correlational research carried out in 2005 in a selected group of hospitals in Tehran (Shohada-e-Tajrish, Taleghani, Imam Hosein, and Rasoul Akram) where the greatest annual number of patients had resorted complaining about diabetes. The population included all the elderly with diabetes resorting to these hospitals. Convenient sampling based upon the inclusion criteria was carried out. With a certainty degree of 95% and based on previous researches [24], the number of samples was set to 262 ( $\beta = 10\%$ ,  $\alpha = 95\%$ ,  $r = 0.2$ ).

The inclusion criteria were: aging 60 or more, speaking Persian, willingness to take part in the research and diagnosis of diabetes at least 6 months ago.

Demographic information, Toubert and Glasgow self-caring, and life quality of the elderly questionnaires were the tools used for data collection [2]. The demographic information questionnaire included questions about age, gender, marital status, employment status, length of affliction and type of treatments.

Toubert and Glasgow self-caring questionnaire: it is a self-reporting questionnaire that lets the cases report the quality of their self-caring activities within the last 7 days. This questionnaire was first designed by Toubert and Glasgow in 2000. It includes 13 statements and covers 4 areas of following the diet, regular physical activities, looking after feet and self-assessment of blood pressure. The validity and stability of this tool was studied and confirmed in previous researches and a Cronbach's alpha of 0.68 is calculated for it [16]. A pilot study was conducted on 10 patients so as to calculate Cronbach's alpha and it was calculated to be 0.68. The following measures were taken to score the questions of this scale: 1 for someone with no self-caring behavior over the last 7 days, 8 for someone who had self-caring behavior in all those 7 days and other people received a score of 1 to 8 based upon the number of days when they had self-caring behaviors.

To determine the favorable level of self-caring, the range of the scored gained (11 to 88) was divided to 3 and the following states were defined for each score: 11 to 36 weak, 37 to 62 average, and 63 to 88 favorable.

Life quality questionnaire associated with the health state of the elderly: this self-reporting tool measures the life quality of the elderly. It is designed by Darvishpour *et al*. It consists of 50 statements concerning 6 realms of not being patient, healthy mind, spiritual welfare, family integrity, social participation capability and independence. The validity and stability of this tool has been studied by Darvishpour *et al* and its Cronbach's alpha coefficient ranges from 0.83 to 0.96. We measure the Cronbach's alpha once again and arrived at a value of 0.92. A 5-degree criteria ranging from 1 to 5 was used to score these questions. The general score of each aspect was calculated based upon the sum of all scores associated with it and the final score is the sum of all 6 score. The scores ranged from 30 to 55. To determine the life quality level associated with health, the range of the scores varying from 50 to 250 was divided to 5. The following values were defined for the scores: 50 to 90 very poor, 91 to 130 poor, 131 to 170 average, 171 to 210 relatively good, and 211 to 250 good.

Having gained the necessary confirmations from the ethics committee of Shahid Beheshti Medical Sciences University (introduction and ethics committee letter) and the letter of introduction from Nursing and Midwifery College of Shahid Beheshti University, the necessary arrangements were made with the authorities of these hospitals. The researchers then resorted to these hospitals to collect the data and the authors attended the research place every day of the week. Having matched the samples with sampling criteria, the samples and cases were chosen. To observe the ethical principles, the informed written consent of all patients was obtained and their information was analyzed anonymously. The data collection tools (questionnaires) were then distributed among the elderly. While answering the questions, the researcher was there to answer any probable questions the respondents might have. If the patients were not able to write the answers for any reason, the researcher would write the answers for patients.

Descriptive statistics (frequency, mean and SD) and interpretive statistics including Pearson's correlation test were used to assess the correlation between self-caring behaviors and life quality with the health of elderly suffering from diabetes. SPSS v.16 was used to analyze the data. The level of significance was set to 0.05.

## RESULTS

**Table 1. Demographic information of the elderly suffering from diabetes resorting to selected hospitals of Tehran from 2005 to 2006**

Variable	Number	Percentage	
Age (years)	60-64	133	50.8
	65-69	74	28.2
	70-74	36	13.7
	75-79	9	3.5
	80 and older	10	3.8
Gender	Female	152	58
	Male	110	42
Length of affliction with diabetes (years)	1-5	95	36.3
	6-10	67	25.6
	11-15	43	16.4
	16-20	28	10.7
	21-25	19	7.2
	26 and more	10	3.8
Marital status	Single	3	1.1
	Married	201	76.7
	Divorced	3	1.1
	Widowed	55	21
Education	Illiterate	58	22.1
	Elementary	60	22.9
	Junior high school	31	11.8
	High school	71	27.1
	University	40	15.3
Employment status	Employed	39	14.9
	House wife	127	48.5
	Unemployed	13	5
	Retired	83	31.7
Type of treatment	Food	130	49.6
	Food and insulin	52	19.8
	Insulin	70	26.7
	Diet and activity	10	3.8

As many as 262 old patients suffering from diabetes resorting to hospitals in Tehran were the participants in this research. The average age of the participants was  $65.78 \pm 5.69$  years old. The majority of the elderly aged 60 to 64 (50.8%). Of all the participants, 152 were female (58%) and the rest were male. More detailed information is represented in table 1.

The average score for self-caring behaviors was  $44.74 \pm 11.90$ . Based on these results, the self-caring behavior of most the elderly suffering from diabetes was in the average level. The average total score of life quality associated with the health of the elderly suffering from diabetes was  $190.52 \pm 28.18$ . Based on these results, the life quality associated with health of the elderly suffering from diabetes was relatively good. Detailed information is represented in tables 2 and 3.

According to the results of Pearson's test, a significant correlation existed between the self-caring behaviors and life quality associated with health and its aspects ( $P < 0.0001$ ). The highest and lowest correlations were respectively observed between the self-caring behavior and social participation capability and self-caring behavior and healthy mind. Detailed information is presented in table 4.

**Table 2. Studying total self-caring among the elderly suffering from diabetes resorting to selected hospitals of Tehran in 2005-06**

Total self-caring	Number	Percentage
Weak	41	6.15
Average	159	7.60
Favorable	62	3.23
Total	262	100
Average	74.44	
SD	90.11	

**Table 3. Studying life quality associated with total health among the elderly suffering from diabetes resorting to selected hospitals of Tehran in 2005-06**

Life quality associated with health	Number	Percentage
Very weak	0	0
Weak	7	2.7
Average	61	23.3
Relatively favorable	116	44.3
Favorable	78	29.8
Total	262	100
Average	190.52	
SD	28.18	

**Table 4. The correlation between self-caring behaviors and life quality associated with the health of the elderly suffering from diabetes resorting to selected hospitals of Tehran in 2005**

Aspects of health-associated life quality	Correlation coefficient	P
Social participation capability	0.35	0.000
Mental welfare	0.29	0.000
Family integrity	0.23	0.000
Independence	0.25	0.000
Sense of not being patient	0.16	0.009
Healthy mind	0.14	0.021
Total	0.28	0.000

## DISCUSSION

The results of this research pointed to the fact that more than half of the elderly suffering from diabetes had an average level of self-caring behaviors. The results of this research were in line with those of the previous researches. It has been shown in this research that most of the patients suffering from diabetes had an average level of self-caring behaviors [16, 20-25]. In the researches conducted on other chronic diseases by Abedi *et al*, an average level of self-caring behavior was reported among those suffering from chronic pulmonary obstruction [26]. An average level of self-caring behavior has also been reported among those suffering from heart failure in the researches conducted by Shojaie *et al* and Zeyghami *et al* [27, 28].

According to the results of this research and in spite of all different therapeutic and healthcare and educational activities targeting those old people suffering from chronic diseases such as diabetes, a notable portion of the elderly suffering from diabetes display low levels of self-caring behaviors. In carrying out these self-caring behaviors, these patients are encountered with various problems such as lack of information, physical limitations, and incompatibility with different complex treatments, emotional problems and other chronic diseases and all these factors undermine the quality of self-caring behaviors among these people. As a result since self-caring plays a major role in reducing the death toll among those suffering from diabetes [29, 30], it is necessary to develop more efficient programs to improve self-caring behaviors among the elderly.

In this research, the elderly suffering from diabetes had a relatively favorable life quality in association with health. This is in line with the results of other researches. Previous researches have pointed to the fact that most patients with diabetes had an average life quality associated with health [10, 31-33]. Mohamadpour Tahamtan reported a good quality of life among people above 40 [34]. Rajabi Gilan *et al* reported a relatively favorable life quality level associated with health among teachers [35]. In the research conducted by Falah Zadeh and Mirzaiee, the life quality associated with health among Iranian university students has been reported to be relatively good [36]. In the study conducted on other diseases by Madli *et al*, the life quality associated with health among patients with major thalassemia has been reported to be relatively good [37]. According to the study conducted by Safaiee *et al.*, a relatively good life quality level associated with health was reported among those patients suffering from breast cancer undergoing chemotherapy [38]. Shojaiee reports a relatively good life quality among those patients with heart failures [39].

However, a considerable portion of the elderly suffering from diabetes have an average level of life quality associated with health and they need special attention in life quality associated with health improvement programs [40]. As chronic diseases affect the mental and physical aspects of life quality of the elderly and deteriorate them, these factors also need to be taken into consideration. Thus, it is necessary to develop and execute a comprehensive health improvement program for the life of the elderly in the Iranian society (that is growing old) as these programs are necessary to improve the life quality associated with health.

The results of Pearson's correlation coefficient analysis pointed to the fact that a significant correlation existed between self-caring behavior and life quality with the health of the elderly suffering from Diabetes. The results of this study are in line with those of the previous researches. A positive and direct statistical correlation has been shown to exist between self-caring behaviors and life quality associated with health of the patients suffering from diabetes type two [41]. The results of the studies conducted by Rostami *et al* and Heydari and Shahbaz Zadeh pointed to a positive and direct statistical correlation between self-caring behavior and life quality of the elderly [1, 3]. Karbsachi *et al* conducted a research to study the effect of self-caring behaviors based upon Orem's pattern on the life quality of patients undergoing chemotherapy among the military personnel and a positive and significant correlation was observed between these two factors [43].

According to the results of the present research, a positive and direct correlation exists between self-caring behavior and life quality associated with health. These results are in line with the current research. This correlation in terms of social participation, mental welfare and independence is indicative of the fact that improving self-caring behavior can result in improved life quality associated with the better health of the elderly suffering from diabetes.

In spite of the few researches conducted in this area which make the evaluation and comparison of these results difficult, the results of this research point to the fact that improving the self-caring behavior of patients can help enhance the life quality associated with health of the elderly suffering from diabetes. As refraining from self-caring may increase the possibility of side-effects and the problems caused by diabetes and imposes high costs on individual and the economy of society, it is therefore required to take appropriate educational and supporting measures. It is recommended to conduct further researches and compare the self-caring behaviors and life quality associated with health between various age groups of old people.

#### **Acknowledgement**

This paper is an extract form an M.S thesis in the field of internal and surgical nursing. The authors wish to thank all colleges of Shahid Beheshti and Iran University of Medical Sciences and all the authorities of Shohada-e-Tajrish, Taleghani, Imam Hossein, and Rasoul Akram Hospitals and all those elderly who took part in this research.

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