The Relationship between Co-morbidity of chronic diseases and elderlies' health-related quality of life in Tehran, Iran

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ABSTRACT

Increase of life expectancy and decreasing the rate of fertility have increased the number of elderlies worldwide and it has turned ageing population into one of the most important challenges of public health in recent years. Thus this study is aimed to survey and compare the quality of life of elderlies either inflicted or not-inflected to the chronic diseases. Materials and Methods: This is an analytical-descriptive and cross-sectional study. 424 elderlies having 60 or over 60-year-old, who were members of ageing center of health centers affiliated to municipalities of east areas of Tehran, were selected randomly. SF36 quality of life standard questionnaire was used for data collection and it was filled out by participants through face-to-face interviews. After having data entered into the SPSS software, ANOVA, T-test and Spearman and Pearson correlation coefficients were used for data analysis. Results: The mean age for studied elderlies was 67.34±7.16 years. 63.7 percent of participants were females and remained (36.3%) were males. Also, 92.25% of elderlies suffered from a chronic disease. Finally, there was statistically a significant difference between average scores of quality of life dimensions for those either inflicted or not-inflicted to chronic diseases (p<0.001). Conclusion: According to the findings, people need to change their habits and health behaviors in order to prevent from diseases or improve their health. Interventional plans and appropriate education can encourage elderlies to have health behaviors and, as a result, promote their health.

Key words: Co-morbidity, chronic diseases, health-related quality of life, elderly.

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INTRODUCTION

Ageing is the accumulation of changes in a person over time. Ageing in humans refers to a multidimensional process of physical, psychological, and social change. It exposes elderly into many threats including infliction to some chronic diseases, depression, physical and mental problems [1]. Due to the reduction of fertility and 20-year increase in life expectancy average,

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the average age of the world population is increasing during the second half of the twentieth century [2]. Moreover, world population is increasingly getting old and a huge part of this change is happening in developing countries. As predicted by the United Nations population center, ageing population will increase from 10.5 percent in 2007 to 21.8 percent in 2050, Iran as a developing country, after countries like China and Korea, is increasingly going to have the ageing population due to the rapid and expand demographic changes during the last two decades[3].

As age of the world population is increasing in both developed and developing countries, health-related quality of life has turned into one of the most important public health issues [4]. Although increased life expectancy represents successes in implementing health interventions, chronic diseases cause disabilities, low quality of life and high health care expenditures which mainly affect elderlies [5]. Elderlies' quality of life can be decreased due to the physiological problems happing in ageing periods [6].

Chronic diseases are of those diseases which rarely treat completely over time. They not only threaten peoples' life and affect their health and economic conditions of individual, family and society, but also decrease elderlies' quality of life and disable them in doing their daily activities independently[7]. With the development of medical sciences and technologies, diagnosis and treatment of these diseases have been improved. Furthermore, because chronic diseases need a long-term care and rehabilitation, therefore, gathering appropriate and update information is necessary in order to have proper health care planning for elderlies[8]. Nowadays, considering high life expectancy and living conditions, health-related quality of life of elderlies is considered as an important index which provide sights regarding their health status[9].

MATERIALS AND METHODS

This is an analytical-descriptive and cross-sectional study. 424 elderlies aged 60 or over 60 years, who were members of aging centers in Tehran and were mentally able to answer questions, were selected randomly. SF36 quality of life standard questionnaire was used for data collection. It has two sub-measures including physical and mental health status. Physical measures were included 4 dimensions (physical functioning, role limitations due to the physical health, general health perceptions, body pain) and the latter measure also was included 4 dimensions (freshness and vitality, social functioning, role limitations due to the emotional health and general mental health). The SF36 method has been standardized in Iran by Montazeri et al [10]. Data related to the health status and inflictions to chronic diseases were gathered using self-reported health status and face-to-face interviews with elderlies. Chronic diseases, in this study, were included cardiovascular disease, diabetes, joint pain, osteoporosis, hyperlipidemia, back pain, hypertension, depression, anxiety and heart failure. Furthermore, data were analyzed using SPSS 18, descriptive statistics, one-sample T-test, ANOVA and Pearson and spearman correlations. Responses to each of the SF-36 items were scored and summed in a same way for each item (items were in Likert scale), and expressed as a score on a 0(minimum quality of life) to100 (maximum quality of life) scale for each of eight health concepts.

RESULTS

Of the 424 elderlies participated in this study, 36.3 %(154 participants) were males and 63.7 %(270 participants) were females. The mean and standard deviation of elderlies' age was 67.34±16.7. Moreover, 66.9 percent of males had 60-74 years and 33.1 percent (51 elderlies) aged 75 or more years, and also 99.1 percent of females had 60-74 year-old and 8.9 percent had

75 or more years. Considering education status, 111 participants (26.2%) were illiterate, 39.2 percent with elementary education, 15.8% had finished middle school, 12.7% had diploma and 26 percent were university graduates. Regarding marital status, 72.4% were married, 0.5% were singles, 1.6% had got divorced and 25.5% had their spouse dead. Furthermore, 84% of studied elderlies lived with their families and 16% lived alone.

Moreover, 52.6%, 4.7% and 42.7% of participants had average, not-suitable and suitable economic status, respectively. Furthermore, 7.8 percent of elderlies suffered from a special chronic disease. Among 92.2% of those elderlies who were suffering from at least on chronic disease, 8% were inflicted to one chronic disease, 14.2% to two diseases, 13.7% to three and 56.4% to 4 or more chronic diseases. In case of infliction to chronic diseases, 61.3% were inflicted to joint pains , 53.5% to hypertension,46.7% to hyperlipidemia, 35.1% to back pain, 34.2% to osteoporosis, 31.8% to cardiovascular diseases, 24.7% to diabetes, 22.2% to depression, 31.8% to anxiety, and 11.6% were inflicted to heart failures.

In present study, the relationship between quality of life in eight health concepts with quality of life of elderlies either inflicted or not-inflicted to the chronic diseases was analyzed and compared using one-sample T-test. According to the results, there was statistically significant difference between scores of elderlies' quality of life for both inflicted and not-inflicted to chronic diseases in all eight concepts. Lastly, those inflicted to the chronic diseases had lower level of quality of life (p<0.05) (table1).

Table 1: Relationship between health status with mean scores of eight dimensions of health-related quality of life

Chronic disease	NO		YES		One-sample T-test
quality of life	Mean	Standard deviation	Mean	Standard deviation	P-value
Physical function	86.66	17.12	58.13	26.68	P<0.001
Role limitation of physical function	89.39	18.78	46.99	38.88	P<0.001
Body pain	81.36	22.62	45.24	28.13	P<0.001
General health perception	69.57	16.23	50.09	22.36	P<0.001
Vitality	78.94	13.15	52.69	23.66	P<0.001
Social function	91.06	12.53	31.66	28.85	P<0.001
Role limitation of emotional function	88.91	27.21	59.58	41.98	P<0.001
Emotional function	80.36	13.13	61.90	24.56	P<0.001

One-way ANOVA test was used in order to analyze the relationship between quality of life with number of chronic diseases. Results indicated a significant correlation between all dimensions of quality of life with number of chronic diseases (p<0.05). It means that as the number of chronic diseases increases, elderlies' quality of life decreases (graph1).

As it's shown in table2, physical and mental health mean was decreased as the number of chronic diseases increased. Moreover, in an equal status, mean scores of physical health were lower than mental health among participants. Also, having the relationship between mental-physical health concepts with number of chronic diseases analyzed using One-way ANOVA; it showed statistically a significant correlation between them (table2).

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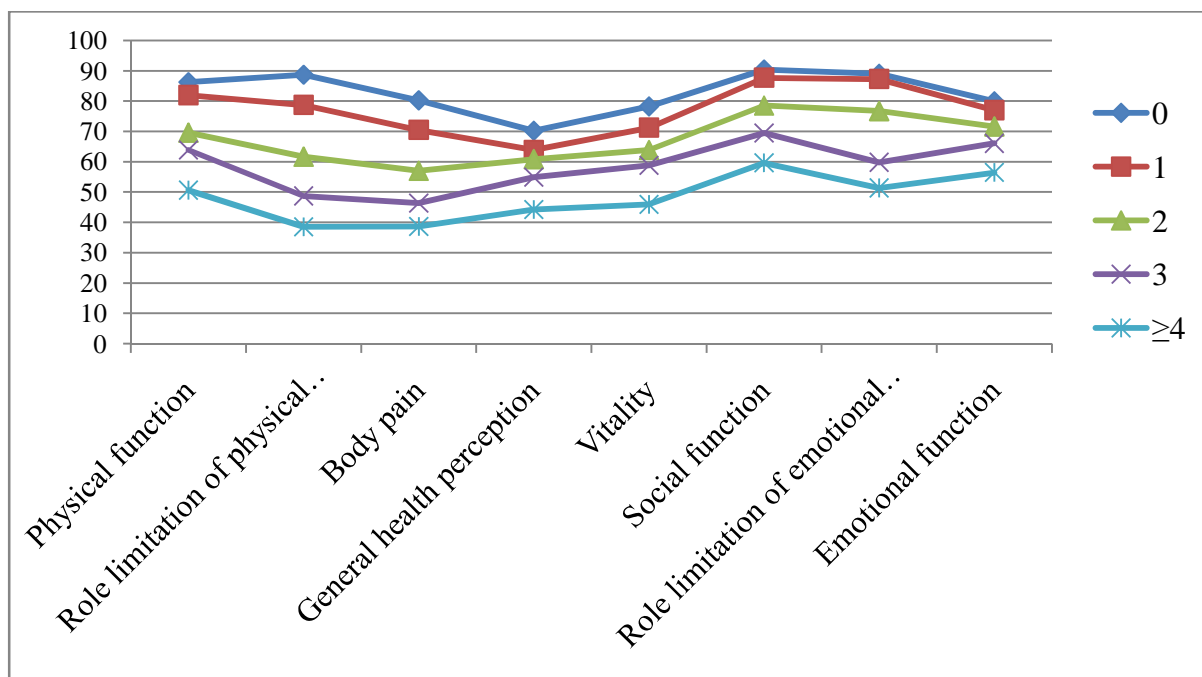
Graph1: Relationship between mean scores of eight dimensions of health-related quality of life with number of chronic diseases

Table 2: Relationship between mean scores of physical-mental health dimensions with number of chronic diseases

Health dimensions number of chronic diseases	Physical health			Mental health		
	Mean	Standard deviation	P-value	Mean	Standard deviation	P-value
0	81.12	11.01	P<0.001	81.78	10.67	P<0.001
1	73.08	14.69	P<0.001	77.32	12.52	P<0.001
2	62.23	20.19	P<0.001	70.08	17.92	P<0.001
3	54.43	17.59	P<0.001	61.67	18.79	P<0.001
≥4	43.45	19.77	P<0.001	51.42	21.93	P<0.001

DISCUSSION AND CONCLUSION

According to the findings gathered from health status self-reported by elderlies, at least 92.2 percent of participants suffered from a chronic disease that 84.2 percent of those were inflicted to more than one disease and only 7.8 percent were healthy. Alonso et al.(2003),in an international survey, studied the relationship between quality of life with chronic diseases in eight countries including Italy, Norway, United States, Japan, Germany, Denmark, France and Netherland. In their study, 55.1% of whole samples self-reported at least one chronic disease and 30.2% were inflicted to more than one chronic disease. Their findings indicated a statistically significant correlation between elderlies' quality of life with their health status(p<0.05), also, average scores of quality of life were high in healthy elderlies in all eight health concepts in comparison to those inflicted to at least one disease[11]. Furthermore, in another relevant study carried out by Vahdani-nia et al. (2005) on elderlies' health-related quality of life in Tehran, they concluded that health status of an individual is a predicator for his/her future quality of life[12].

In Alonso's study, quality of life for those inflicted to chronic diseases was worse than those who self-reported no infliction to chronic disease[11]. Since studies have shown the effect of people's life style on infliction to chronic diseases and a slight change of life style can prevent 90% and 80% of infliction risk to type 2 diabetes and cardiovascular diseases, respectively, therefore, in order to promote and enhance the effectiveness of second and third levels of prevention,

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screening and early diagnosis and treatment of elderlies' chronic diseases should be considered besides primary prevention and intervention[13].

Furthermore, both studied groups had got high average score in social functioning dimension. This finding can be confirmed by the fact that those elderlies who were living in Tehran and were a member of ageing centers, as non-governmental organizations (NGO), had high social functioning in all eight dimensions of quality of life. Thus it can be concluded that centers for elderlies positively affect physical and mental health of elderlies through providing them conditions of taking part in group and social activities. Undoubtedly, social attendance and activities of elderlies not only affect their physical and mental health, but also affect second and third generations and families, indirectly.

Also, results showed a decrease in elderlies' quality of life in all eight dimensions while the number of chronic diseases was increased. In a study named" chronic disease and quality of life" which carried out by Crouchley et al.(2007) in Australia, they concluded that; any increase in number of chronic diseases result in dramatic decrease in average scores of all quality of life dimensions[14]. These findings are in consistent with a study done by Habibi to assess the relationship between physical activity levels with prevalence of chronic diseases among elderlies living in west part of Tehran city[15]. He pointed out that elderlies' health-related quality of life is negatively affected by the number of chronic diseases.

The present study's results also showed that any increase in number of chronic diseases result in decrease in quality of life. Since the number of people inflicted to the chronic diseases is increasing in Iran, thus people should consider change in their habits and adopt healthy behaviors in order to prevent diseases and promote their health. Finally, interventional and educational plans play an important role in encouraging people to promote their health through changing their behaviors.

Acknowledgment

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