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Original Article

Quality of Life Study in Asthmatic Patient and Correlation with Demographic Diverse

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A R T I C L E I N F O	A B S T R A C T

Introduction: Chronic diseases have a significant impact on life quality of patients due to their duration and disabilities. One of these chronic diseases is asthma which is considered as an inflammatory disease of the respiratory tract. People with asthma always experience a lot of problems when doing their everyday activities. Therefore, this study has been conducted with the aim to investigate the quality of life for asthma patients and its relationship with some demographic variables of them in Ahvaz. **Methodology:** This is a cross sectional-analytical epidemiological study conducted on 150 patients (105 males and 45 females) with asthma and age over 15 years (average age was between 25-35 years) that referred to acute emergency of Golestan and Imam Hospitals and to internal and pulmonary emergency of Imam Hospital ward. The data were collected through Quality of Life Questionnaire (WHOQOL-BREF) and demographic information such as age, gender, marital status, years of occurring disease, occupation, and educational level were collected. **Results:** The research findings showed that the vast majority of participants had relatively low quality of life. In the survey conducted, the relationship between quality of life with age and years of developing disease was significant and inverse relationship (P: 0.000 and P: 0.000 respectively) and there was no significant relationship between quality of life with gender, marital status and occupational status and level of education (P: 0.529, P: 0.670, P: 0.265, P: 0.230 respectively). **Conclusion:** It seems the quality of life in patients with asthma is relatively low. Then due to the low quality of life in patients with asthma and its relationship with variables such as increasing age and duration of disease, it seems that implementing psychiatric (psychological, etc.) interventions is essential.

Keywords: Asthma, Quality of life, Demographic factors

1. INTRODUCTION

Asthma is a chronic inflammation of the small airways in response to various stimuli of immune system activity that causes reversible narrowing of the airways [1-4].Airway constriction is as a result of airway smooth muscle contraction, bronchitis vasodilatation, edema in submucosal tissue and increased secretion into the lumen of airways [5, 6]

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.Asthma is a periodic disease which its acute exacerbation periods are separated with asymptomatic periods [4] and clinically determined by the triad of shortness of breath, coughing and wheezing. Patient coughs are frequent especially at night or early in the morning [7, 8].In this disease, airway reactivity increases following the contact with stimuli and FEV declines in - $\%$ which this mechanism is said Airway hyper-responsiveness [9, 10].The prevalence of asthma varies in different countries. Its density in advanced countries is more and in poor countries and rural areas is less. In the past 40 years, the prevalence of asthma has increased in all countries (similar to allergy) [4].Prevalence of the disease is one of the world's major public health issues. It is estimated that the number of asthma patients in the world is 300 million and mortality rate is 250 thousand per year [11-13]. Less than 1% of all deaths and millions around the world is due to asthma. According to (GBD), it is estimated that standardized mortality rates by age from 1990 to 2010 decreased from 250 per million to 170 per million in men and 130 per 1 million to 90 per 1 million in women that this figures around the world include all ages [14].

The effective factors in incidence of asthma can be factors such as maternal smoking, maternal type of feeding, stress, and giving birth through cesarean. Other factors affecting the incidence of asthma is to exposure the tobacco smoke, poor nutrition with breast milk, contact with animals, air pollution, structure and number of family members, indiscriminate use of antibiotics, occupational exposure, etc. [15].

Airflow limitation will be created during an asthma attack due to bronchial constriction that this airflow limitation reduces FEV and $\downarrow FEV/FVC$ and FEF. Resistance of airways increases as a result of bronchial constriction and the same phenomenon causes lung hyperinflation and increase of RV and eventually causes alveolar hypoventilation. Increased pulmonary blood flow causes a mismatch between ventilation and perfusion and hypoxia [5, 6]. Spirometry is the preferred method to measure lung function and diagnosis of asthma. So that the airway constriction is confirmed by displaying FEV reduction and reduction ratio of $\downarrow FEV/FVC$ and $\downarrow PEF$ [16, 17].

The disease has a profound impact on the lives of patients with gradual evolution and occasional exacerbation of signs and symptoms and affects their health, family life, group and social activity, occupational functioning, and quality of life [1, 4, 18]. Quality of life refers to satisfaction of individuals in relation to the areas of life issues that are important for individuals [19].Or in other words, it understands of person from personal life regarding the culture, values, goals, expectations, standards and his interests [20, 11, 21]. Patients with asthma are suffered in activities due to lack of ability to perform proper ventilation and their physical tolerance level is limited. Limitation of ability to perform physical functions creates a feeling of inadequacy in individual and patient's self-confidence is impaired. Subsequently, the patient suffers from anxiety and depression and leads to the withdrawal of the individual from society and ultimately, quality of life decreases [8]. And therefore what is important in the treatment of a chronic disease such as asthma is to improve the life quality of patient, in addition to controlling disease symptoms [20] and decision in the treatment can be made much easier with determining life quality of these patients, and complete and comprehensive treatment to be done for the patients [20, 22].The results of studies conducted so far indicated that psychological effects of asthma on life and a sense of wellbeing of a person is even more severe than the disease itself or other acute conditions and the disease leads to a lack of satisfaction of patients from life with creating limitations in various functions of them [23, 24]. Considering the results of above papers and high prevalence of asthma and given that such an investigation has not been carried out in Ahvaz, this study aimed to determine the quality of life in patients with asthma and its relationship with some demographic variables in Ahvaz.

2. METHOD

This is a cross-sectional analytical epidemiological study, which was conducted after approval of the ethics committee of the Ahvaz Jundishapur University of Medical sciences .The study was conducted on 150 patients including 105 males and 45 females over 15 years old that referred to acute emergency of Golestan and Imam Hospitals and internal emergency of Imam Hospital as well as those admitted to pulmonary section of Imam Hospital. All patients participating in the study had inclusion criteria that these criteria include: Confirm the diagnosis of asthma by a physician or pulmonologist in the past 6 months, full satisfaction of participating in the study, age over 15 years, having no chronic underlying diseases such as diabetes and cardiovascular problems and...As well as having psychiatric health and the lack of cognitive severe impairment and having mental health. Data collection tools included: 1. Quality of Life Questionnaire and 2- Demographic variables questionnaire that the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) was used which was available to all individuals. As well as, demographic information such as age, gender, marital status, occupational status, education level and duration of disease were collected from all patients. It is noteworthy that all patients have completed consent form. Quality of life questionnaire consisted of 26 questions that examines the quality of life in dimensions of physical health (7 questions), environment and living conditions (8 questions), social relations (3 questions) or psychological relations (6 questions).

The way of scoring is in a way that each item score values in the range of (1 to 5) respectively never, low, medium, high, and perfect or I'm very unsatisfied, not satisfied, relatively

unsatisfied, satisfied, very satisfied and like it. Questions 3 and 4 and 25 of the questionnaire are scored inversely. The scientific validity of the questionnaire is confirmed by the content validity and Chronbach alpha coefficient is used to determine the reliability of the questionnaire that its coefficient is 86% in all quality of life aspects [25]. With this tool, the quality of life is examined in four dimensions. And statistical data were analyzed by using SPSS software and the following statistical methods.

1- Person correlation - spearman correlation

2- Test for two independent samples or mann-whitney test

3- One way Anova or kruskal - wallis test

3. RESULTS

The results showed that the age of more than 39.33% of the samples was in the age group 25-35 years, the highest percentage of them were males (70%) with the disease history of 5 to 10 years (53.33%).As well as, majority of those surveyed were under diploma level of education (50.67%) and married with (60.67%) in terms of marital status (Table No. 1).

About the life quality of patients, highest percentage of the study subjects had 2.778 life of quality. Smaller amount of this number from 3, as the value of central choice of the questionnaire questions, indicates relatively low quality of life status through the eyes of people participating in the research. In terms of life quality dimensions, component environmental conditions have the highest average and component psychological health has the lowest average. In terms of standard deviation, social relations have the highest standard deviation and psychological health dimension has the lowest standard deviation. On the other hand, findings obtained from the study of some demographic variables and its relationship to quality of life showed that there was a significant relationship between quality of life with age (P: 0.000) and years of disease (P: 0.000).But there was no a significant relationship between quality of life with marital status (P: 0.670) and gender (P: 0.529) and education level (P: 0.230) and occupational status (P: 0.265).

Table 1: Demographic characteristics of patients with asthma participated in the study

Variable		Number (frequency %)
Gender	Female	45 (30%)
	Male	105 (70%)
Age	15-20	3 (2%)
	21-25	19 (12.67%)
	26-30	21 (14%)
	31-35	37 (24.67%)
	36-40	21 (14%)
	41-45	10 (6.67%)
	46-50	15 (10%)
	51-60	24 (16%)
Marital status	Single	41 (27.33%)
	Married	91 (60.67%)
	Divorced	8 (5.33%)
	Widow	10 (6.67%)
	Under Diploma	76 (50.67%)

Level of Education	Diploma	45 (30%)
	Bachelor's degree or higher	29 (19.33%)
Occupation	Employee	13 (8.7%)
	Worker	83 (55.3%)
	Self-employed	14 (9.3%)
	Retired or disabled	8 (5.3%)
	Housewife	23 (5.3%)
	Unemployed	9 (6%)
Years of disease	1 to 5 years	49 (32.67%)
	5 to 10 years	80 (53.33%)
	More than 10 years	21 (14%)

Table 2: Descriptive statistics of data for the variable quality of life and its four dimensions

Variable/Index	Average	Standard Deviation	Variance
Physical health	2.724	0.454	0.207
Mental health	2.708	0.416	0.173
Social relations	2.851	0.550	0.304
Environmental conditions	2.852	0.435	0.190
Quality of Life	2.778	0.392	0.154

Table 3: The values of Kolmogorov-Smirnov (Ks) test

Variable/Index	Average	Standard Deviation	Significance level	Ks
Quality of Life	2.778	0.392	0.0005	0.104

Table 4: Quality of life and education level

Variable education level/Index	Average	Number	Significance level	Degree of freedom	Value of H test
Under Diploma	69.53	76	0.230	2	2.940
Diploma	82.24	45			
Bachelor's degree or higher	80.69	29			

Table 5: Quality of life and gender

Variable gender/Index	Average	Number	Significance level	Value of Mann-Whitney test
Male	76.96	105	0.529	2209.000
Female	72.09	45		

Table 6: Age and quality of life

Variable/Index	Significance level	Value of Spearman correlation test
Age	0.000	-0.440

Table 7: Marital status and quality of life

Variable marital status/ Index	Average	Number	Significance level	Degree of freedom	Value of H test
Single	82.51	41	0.670	3	1.553
Married	72.57	91			
Divorced	71.63	8			
Widow	76.50	10			

Table 8: Years of disease and quality of life (Spearman correlation test results)

Variable/Index	Significance level	Value of Spearman correlation test
Years of disease	0.000	-0.660

Table 9: Occupational status and quality of life

VariableOccupational status/Index	Average	Number	Significance level	Degree of freedom	Value of H test
Employee	94.04	13			
Worker	78.51	83			
Self-employed	71.25	14	0.265	3	6.445
Retired or disabled	69.19	8			
Housewife	68.30	23			
Unemployed	51.56	9			

4. DISCUSSION

Patients with asthma daily have a lot of problems and issues that hamper many tasks and activities of them. Results of this study indicate that the quality of life of people with asthma is relatively low. In a study conducted by OA Oni et al., on 120 patients in 2014, quality of life for patients with asthma was low [7]. Also in an article published by Bartozuchmanowicz et al. in Poland in 2016, it was shown that Asthma has clearly negative effect on quality of life and especially causes restrictions on the activities of people [11]. Due to the chronic nature, asthma has a profound impact on the lives of sufferers and affects health, family life, and even the person's economic progress and limits individuals in most aspects of life and reduces quality of life with gradual evolution and exacerbation of signs and symptoms.

* According to findings of this study, there was a significant and inverse relationship between age and quality of life (P: 0.000); so that life quality of patients will decline with increasing age. This study was consistent with study of Blozik et al and what was clear in their study was that increased age causes the dysfunction in daily activities and psycho-social constraints of individuals and ultimately reduces the quality of life [11]. It can be also said that attention of the patient to regular treatment and avoidance of the disease stimuli reduces with increasing age and the person does not much care for himself and control of his illness. This is while that OA Oni et al did not report a significant relationship between age and quality of life [7] as well as Juiper [26] in his study stated that young people have a lower quality of life than the older people, because elderly patients adapted themselves with the disease conditions and their lives.

* In this study, there was no significant relationship between gender and quality of life that this finding has been consistent with the study of Wa [20] and Gonzales [19] and this is while Ferreira LN et al in a study published in 2010 entitled quality of life for asthma patients stated thatwomen suffer from their disease more than the men [27].

This finding may be due to biological difference between the 2 genders (such as differences in genetics, lung structure and other Immunologic causes). However due to more power of reconciliation in women compared to men, it may be said

that tolerance of disease and coping with the disease problems as well as maintaining the quality of life is easier for women compared to men, as well as women are more regular and more obsessive to regular drug use and medical cares. Hence, it can be said that the quality of life of asthma patients, men and women has no much difference.

* In this study, there was no significant relationship between marital status and quality of life (P: 0.670). This finding varied from study of Ferreira et al, because their study came to the conclusion that single people have a higher quality of life than those married and widowed [27].This is while Bartosz et al in a study stated that life quality of individuals and their marital status have no significant relationship with together [11]. It can be said in explanation of this issue that married persons receive more support and sympathy by their spouses that these supports are as protection to deal with stress and tensions caused by the disease. However, it can be said that stresses and tensions of this group are higher due to frequent conflicts and responsibilities of married people, and they have lower quality of life and on the other hand, single people are vulnerable. Hence, it can be said that there is no significant relationship between the quality of life of asthma patients and their marital status.

Results of the present study showed that there is a significant and inverse relationship between the quality of life of people with asthma and years of disease. Thus, the longer the start of the person's disease spent, he will have lower quality of life. This relationship was insignificant in study of Wangky [28]. This is while it was said in a study published in 2016 by Bartoze et al that the more the onset of the disease have passed, life quality of sufferers will be reduced [11].As duration of the disease causes physiological and structural changes in the lungs despite reversibility of disease inlong-term, sometimes fibrosis and irreversible changes create in the lungs and thus, function of lung and airways becomes weaker than the beginning of the disease and it might be said that increasing the duration of disease affliction may reduce the person's self-care, because the person is discouraged from treatment continues by increasing the affliction time. Finally, the quality of life for people with asthma decreases with increasing duration of the disease.

* The survey conducted showed that there is no significant relationship between level of education and quality of life that this finding was inconsistent with the study results of Mrcozek et al [29] and Gonzales [19]. It can be said in explaining this finding that the higher the education level, the person will have deeper and more accurate perspective to many issues around himself and the control and treatment of the disease in educated people is usually done with more sensitivity and accuracy. However educated people due to the high expectations of their abilities and much effort to achieve the goalbecause of limitations that the disease create for patient in many conditions and leads to the failure of the patient, this causes there is no significant relationship between level of education and quality of life, despite the

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impact of high education level on control and understanding of the disease.The survey conducted in this study showed that there is no significant relationship between quality of life and occupational status.In a study published by Ferreira et al, it was stated that the employed patients with asthma have a higher quality of life than the unemployed people [27].

As well as, study conducted by EWa et al in 2013 mentioned a significant relationship between employment status and quality of life [20].This is while that Hans-wytrychowska et al in an article published in 2010 stated results in favor of the lack of a significant relationship between life quality of asthma patients and occupational status [30].We can say in explaining this finding that although employed people have more confidence than the unemployed and housewives because of independent economic statusand its seems to have higher quality of life, occupational exposures (whether self-employed, worker or employee) in turn are an important risk factor for asthma exacerbations.On the other hand, employed people (in each job) have more stress and anxietythan the unemployed people and have less opportunity to keep track and control their disease.In the case of not having a financial support, housewives and unemployed persons are also unable to prepare medicines and necessary measures for control of their disease. Hence, it can be said that there is no significant relationship between quality of life and occupational status.

5. CONCLUSION

Results of this study showed that life quality of people with asthma is low on average and variables age and disease duration were effective on life quality of these patients (had inverse effect) and variables such as gender,education level, occupational status, marital status have no effect on the quality of life in patients with asthma.Knowing the life quality situation of asthma patients and its influencing factors, decisions in treatmentcan be made much easier and new solutions can beopened up facing the treatment team, and comprehensive dealing and systematic and carefulplanning in order to improve the life quality of people with asthma to be at the head of the patients' therapeutic purposes.

6. SUGGESTIONS

Existence of contradictory results in this study and similar studies indicate the need for further research in this field.According to findings of this study regarding the low life quality of asthma patients in its 4 dimensions, it seemsthat implementation of psychological interventions alongside the clinical treatment of patients helps to improve the quality of life.Given that individuals associated with the patient as spouse, parents and children and…are not ineffective in the person's quality of life, it is suggested that the patients' family to be also evaluated on the assessment of life quality in future research.

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