ORIGINAL ARTICLE

A Comparative Study of The Prevalence of Mental Disorders in Patients with Asthma and Normal Population

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ABSTRACT

Asthma is a common respiratory disease that affects millions of people in the world and affects these patients in various physical, mental and social aspects. The main purpose of this study was to compare the prevalence of mental disorders in patients with asthma with the general population. This research is of descriptive and survey type. The statistical population of this study consisted of people with asthma (over 16 years old) admitted to the asthma and allergy clinic of Rasoul Akram Hospital in Tehran in the three months of April, May and June 2015. 150 patients with asthma and 150 normal individuals were selected using convenience sampling method. In this study, the Symptom Checklist-90-Revised (SCL-90-R) and a researcher-made questionnaire were used to collect demographic information. The results of t-test of two independent samples at a significance level of 0.05 showed that the mean total score of people with asthma in the questionnaire was significantly higher than the normal population and, in more detail, physical complaints, obsessive-compulsive disorder, depression, anxiety and sensitivity to reciprocal relationships and aggression in patients with asthma was significantly different from the normal population, but schizophrenia, paranoid thoughts, and phobia were not significantly different between the experimental and control groups. According to the findings, it can be concluded that patients with asthma suffer from more and more severe mental disorders than normal people, and apart from medical treatments, they also need psychiatric care.

Keywords: Asthma, Mental Disorders, Normal Population

INTRODUCTION

Asthma is a common lung disease characterized by airway inflammation, airway overreaction, and reversible obstruction to airflow. This inflammation leads to recurrent periods of asthma symptoms such as cough, lung tightness, wheezing, and dyspnea, which is very uncomfortable for the patient and can affect his performance and quality of life (1). According to published statistics, 5% of the world's population suffers from asthma, and it is estimated that approximately 334 million people currently suffer from asthma. Also, 250,000 deaths are attributed to this disease annually and its overall prevalence is projected to increase to 100 million by 2025 (2). According to research, while the prevalence of asthma is higher in children, the mortality rate is higher in adults. Asthma is more common in boys in children, while the prevalence of adult asthma is higher in women. This gender difference in prevalence occurs during puberty, indicating that sex hormones may play a role in the cause of asthma (3).

In addition to high mortality rates, chronic diseases such as asthma can also affect patients' relationships with the environment. In a way that various aspects of life, including family dimensions and social activities of patients are affected, which leads to psychological problems such as anxiety, depression and sadness in patients (4). In this regard, research has not confirmed the existence of a single and specific personality disorder in asthmatic and allergic patients, but some of the psychological characteristics of patients include depression, emotional instability, uncontrolled emotion expression, hypersensitivity to success of others (abnormal competition and jealousy), obsession with one's health, anger and aggression, negative emotions and muscle tension have been reported in them (5). Furthermore, research has shown that stress and anxiety have a significant effect on the incidence and exacerbation of these diseases and even affect the recurrence of attacks and hospitalization of patients (6). According to studies, these patients are usually dissatisfied with their lives and are not able to tolerate long-term problems. The presence of any continuous and chronic stress and pressure makes them incapacitated and frustrated. Most of them are preoccupied with illness and sometimes fear of death. In addition, the lack of complete and sufficient power to control anger and anxiety, as well as reduced enjoyment of pleasurable activities is evident in most of these patients. Asthmatic patients (with asthma) suffer from chronic anxiety, which is transferred to another subject even when the anxiety is relieved. These people often suffer from sleep disorders and complain of scattered physical pain (7).

In general, some patients are very sensitive to changes in the family and workplace and prefer the continuation of the previous and constant trend to changes. Also, paying too much attention to breathing and other symptoms of the disease and feeling the inadequacy of the lungs to transfer oxygen to the organs and counting the number of breaths in these patients cause anxiety and eventually increase the number of breaths and shorten it and exacerbate the symptoms of the disease. Patients' information about their disease regarding the etiology of symptoms of treatment complications is often incorrect and this aggravates the disease. These people do not have enough confidence in their doctors and treatments and constantly seek better doctor and superior treatment (8).

Therefore, given the prevalence of psychological disorders in patients with asthma and high prevalence of asthma according to global and national statistics and the role of mental health of asthmatics in terms of community health, the present study aims to investigate the prevalence of mental disorders in patients with asthma compared with normal population.

METHODOLOGY

Selection of patients:

In this descriptive-survey study, people with asthma admitted to the Asthma and Allergy Clinic of Rasoul Akram Hospital in Tehran, Iran during April, May and June 2015 were studied. Inclusion criteria for the study were Iranian nationality, age range of 16 years and older and no other chronic physical illness according to the patient's self-declaration. Exclusion criteria were patients' discontent to participate in the study. Based on this, 150 patients were selected using the estimation of proportion formula and convenience sampling method. Also for comparison, another sample of the normal population was selected (n=150) who were diagnosed with no asthma by a specialist. In addition, individuals in this group became as homogeneous as possible with samples of asthma patients in terms of number, age, gender, education, and economic and social status.

Also, first, the objectives, nature, and process of the research were explained to the sample people and their consent to participate in the research was obtained. The sample individuals were assured that the information in their questionnaire would be kept confidential and reminded that the results of the research would be made available to them if they wished. The sample individuals were also reassured that if at any stage of the research they were unwilling to continue the cooperation, they could leave the research and would be referred to a psychiatrist if they needed pharmacological treatment.

Implementation method:

In this study, two questionnaires were used to collect data, the main part of which was completed by the patient and part of which was completed by an asthma and allergy specialist. The first questionnaire was a researcher-made questionnaire based on personal information and demographic characteristics including age, gender, marital status, economic status, employment status and level of education, as well as the duration of the disease, which was answered by the patients. The second questionnaire was the Symptom Checklist-90-Revised (SCL-90-R). This questionnaire is a common self-report instrument for assessing mental pathology. The main version of this questionnaire includes 90 questions for the evaluation of mental symptoms. The initial form of the test was developed in 1973 and the final form in 1976 by Derogatis et al. Derogatis, Rickels, and Rock reported satisfactory internal validity of the test using the alpha coefficient. The highest correlation coefficient for depression was 0.95 and the lowest was 0.77 for psychoticism. In the retest validation calculation for 94 heterogeneous mental patients after one week of the first implementation, correlation coefficients were obtained between 0.78 and 0.90. Regarding the validity of the questionnaire, various studies have reported the highest correlation of 0.73 for the depression dimension and the lowest of 0.36 for the phobias dimension. In Iran, the results of the research of Modabernia et al. (2005) indicate that a significant correlation has been observed between the nine dimensions of this test and MMPI scales. The results of Mirzaei and Rezapour (1997) also indicate the concurrent validity and reliability of this instrument in a suitable retest method in the Iranian population.

Statistical Analysis:

Data were analyzed by SPSS software version 25 (version 25, SPSS Inc., Chicago, IL). Independent t-test was used to compare the prevalence of mental disorders in patients with asthma with normal people. Finally, P less than 0.05 was considered statistically significant

RESULTS

In this study, 150 patients with asthma and 150 as a control group were studied. The mean duration of the disease in the studied patients was 8.17 years. The mean age was 45 years in patients with asthma (SD=14) and 41.5 years in the control group (SD=9.71). There was no statistically significant difference between the age of patients in the case and control groups (P=0.08). Also, among patients with asthma, 50 (33.3%) were male and 100 (66.7%) were female, and 64 (42.7%) were male and 86 (57.3%) were female in the control group. There was no statistically significant difference in the gender between the two groups (P=0.08).

Table 1. Comparison of the mean score of the questionnaire and nine mental disorders in the two groups

Disorder	Group	Number	Min	Max	Mean	Std. deviation	P-value
Physical complaints	Asthma	147	0.17	3.42	1.35	0.77	<0.001
	Control	149	0	2.92	0.70	0.62	
Obsessive-compulsive	Asthma	144	0.10	3.40	1.24	0.74	0.007
	Control	150	0	2.90	1	0.55	
Sensitivity in reciprocal relationships	Asthma	149	0	3.11	1.07	0.68	<0.001
	Control	150	0	2.22	0.69	0.48	
Depression	Asthma	149	0	3.85	1.15	0.83	<0.001
	Control	149	0	2.31	0.70	0.51	
Anxiety	Asthma	147	0	3.10	0.88	0.75	<0.001
	Control	150	0	2.10	0.57	0.49	
Aggression	Asthma	149	0	3.83	0.89	0.71	0.003
	Control	150	0	2.33	0.63	0.48	
Phobia	Asthma	148	0	2.43	0.48	0.50	0.080
	Control	150	0	1.86	0.35	0.40	
Paranoid thoughts	Asthma	149	0	3.33	1.09	0.85	0.097
	Control	150	0	2.50	0.87	0.58	
Psychoticism	Asthma	148	0	2.40	0.57	0.61	0.057
	Control	150	0	1.80	0.38	0.36	
Total score	Asthma	140	0.1	2.69	1	0.60	<0.001
	Control	148	0.03	1.89	0.66	0.40	

According to Table 1, the prevalence of mental disorders in patients with asthma with the control group was studied. According to the results of this research, the total score of SCL-90-R questionnaire in the group of patients with asthma was statistically significantly higher than normal people (P <0.001). Also, the scores of physical complaints, obsessive-compulsive disorder, sensitivity in reciprocal relationships, depression, anxiety and aggression were statistically significant between the two groups and were

higher in the case group (P <0.05). But there was no statistically significant difference between phobia, paranoid thoughts and psychoticism between the two groups (P> 0.05).

DISCUSSION

It has been shown that the psychological characteristics of patients with asthma and the presence of mental problems are associated with both the severity of asthma and the degree of disease control. Despite studies supporting this association, the causal relationship between asthma and mental health is still unclear. Regardless of the nature of this association, if there is a psychological complication, it interferes with the proper management of the disease, especially in patients with severe asthma and poor control. Meanwhile, it has been shown that the psychological characteristics of asthma patients have a significant effect on the diagnosis of symptoms, daily management and disease outcomes (9). Therefore, the present research aimed to compare the prevalence of mental disorders in patients with asthma and the normal population.

The results of our study showed that the prevalence of mental disorders was generally higher in patients with asthma than in the normal population. According to the the Symptom Checklist-90-Revised Questionnaire, physical complaints, obsessive-compulsive disorder, anxiety and sensitivity in reciprocal relationships and aggression in asthma patients had a statistically significant difference with the general population, but schizophrenia, paranoid thoughts and phobia were not significantly different between the experimental and control groups. These results are consistent with the results of Zargar and Ghasemi Nejad research in 2011 according to which patients with asthma were significantly different from the normal population in terms of mental health (10). In determining the relationship between mental health and quality of life in patients with asthma, Yektaleb et al. in 2014 reported that the areas of quality of life in patients with asthma including signs and symptoms, physical activity, mood function, social function, and perception of health of patients with asthma are related to all areas of their mental health, therefore, providing special care in the psychological area can be useful for these patients and provide opportunities to improve their quality of life (11). Also, Vaziri Yazdi et al. in 2006 also reported that the prevalence of depression in patients with asthma is higher than in people of the society and that it is directly related to the history of asthma. Therefore, they stated that early recognition and treatment of asthma can prevent the risk factors for depression (12). Also, Mortazavi Moghadam and Hosseini had reached the same conclusion in their research (13).

The results are similar among related foreign studies. In a study, Giacco et al. found that lifelong anxiety disorders were significantly associated with asthma, and that this two-way relationship, each of which could be caused by the other, affected the quality of life of patients with asthma (14). The results of the study by Lu et al. also showed that there is a significant relationship between asthma and mental disorders and quality of life and that asthmatics have more mental disorders and lower quality of life (15). In a study of anxiety and depression in adolescents with severe asthma and their parents, Licari et al. found that anxiety and depression were common in both adolescents with severe asthma and their parents, and reported that a a psychological assessment could play an important role in improving adolescent severe asthma in both patients and their parents. (16). Another study by Feldman et al. in 2005 found a significant association between psychiatric symptoms and exacerbation of asthma in adolescents (17).

Explaining this finding, it should be stated that asthma has a significant negative effect on the mental health of patients and even their family members and predisposes them to psychiatric disorders, which are mainly manifested in the form of anxiety, depression, and anger, for various reasons including the chronicity of the disease and its limitations, and the complications of the disease and the side effects of the treatments. Asthma and allergies aggravate psychiatric disorders, especially depression and anxiety. The association of asthma with mental disorders is to the extent that it has been proven that treating depression and anxiety and other psychiatric disorders is effective in reducing asthma attacks and allergies. Also, recent research has shown that stress and anxiety have a significant effect on the incidence and exacerbation of these diseases and even affect the recurrence of attacks and hospitalization of patients (18).

In general, the present study had limitations. One of the limitations of this research is that the information is obtained from a single source and its generalization to other areas should be done cautiously. Also, since the only way to collect information in this research was to complete the questionnaire by patients and in fact patients' self-reporting, the subjects' dishonesty and bias in responding can be considered as one of the limitations of the study. It is suggested that future studies, in addition to asthma which was selected for this study, also investigate the effect of other chronic physical illnesses on the incidence of mental disorders. Also, considering the fact that the prevalence of mental disorders in patients with asthma is higher than in normal people, it is recommended that patients with asthma undergo periodic psychiatric and psychological examinations, and if they have any problems in this area, they should be consulted and treated with psychotherapy.

CONCLUSION

Based on the findings of this study, patients with asthma suffer from more and more severe mental disorders than normal people and there was a significant relationship between the level of mental health of patients with asthma. Therefore, it is necessary for the medical staff to be aware of this issue about asthma, and in addition to treatment strategies to improve the symptoms of the disease, supporting patients to improve mental health should also be taken into consideration in future care.

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