

Psychiatric Problems in Mothers of Asthmatic Children

Mitra Safa^{1,*}; Fatemeh Ghasem Boroujerdi¹

¹Department of Psychiatry, Masih Daneshvari Hospital, Tehran, IR Iran

*Corresponding author: Mitra Safa, Masih Daneshvari Hospital, Darabad Street, Niavaran Street, Tehran, IR Iran. Tel: +98-2127122607, Fax: +98-2127122607, E-mail: anahita86@yahoo.com; m.safa@sbm.ac.ir

Received: December 22, 2013; Accepted: February 5, 2014

Background: Chronic physical conditions in children significantly affect the quality of life in parents, especially mother. Many people with chronic pulmonary conditions as well as their family members need psychiatric assistance.

Objectives: The goal of the current study was to evaluate the mental status as well as substance abuse behavior of mothers of asthmatic children.

Patients and Methods: This was an observational cross-sectional study performed through completion of a questionnaire by participants. All mothers of asthmatic children at Masih Daneshvari Hospital from February 2011 to March 2013, consisted of 182 individuals, were included in the study after obtaining informed consents. The SCL-90 (symptom check list) questionnaire was completed by patients. History of substance abuse or cigarette smoking was asked from the sample group. Correlations between variables were analyzed using student t-test and chi-square test by SPSS-16 software (the statistical package for social science).

Results: The mean age of participants was 33 ± 5 years and the average number of their children was 2 ± 1 . The percentages of participants with scores in the abnormal range (≥ 2.5) were 17% for anxiety, 2% for obsessive compulsion, 15% for aggression, and 15% for the reference idea. Smoking had significant correlation with the presence of physical complaints ($P < 0.007$). Smoking history correlated with obsessive-compulsive behavior ($P < 0.007$) and substance abuse correlated with physical complaints ($P = 0.001$). Presence of physical complaints correlated with allergy in the children ($P = 0.035$). The total questionnaires' score and scores for each section also correlated ($P = 0.000$).

Conclusions: This study showed that mothers of asthmatic children are prone to psychiatric symptoms. These symptoms included high scores on anxiety, aggression, reference idea and obsessive-compulsive thoughts. Scores on the physical complaint section were significantly higher in mothers whose children had allergic symptoms. Therefore, it is recommended that they get evaluated for psychiatric symptoms, and psychiatric treatment is recommended alongside treating asthma in their children.

Keywords: Psychiatry; Asthma; Parents

1. Background

Chronic disease is defined as a condition lasting six months or more with little or slow day-to-day change or progression (1, 2). Asthma is considered as a reversible inflammatory disease with symptoms of dyspnea, wheezing and cough. Chronic diseases in children can significantly influence the family's quality of life (3). Many patients with chronic lung disease and their family members need psychiatric help (4). Chronic conditions such as asthma, lead to decreased physical, psychiatric and social functioning. Good relations among family members and understanding the disease management are important. Outlook and behavior of the family of children with asthma and chronic diseases might be different (5). Studies show that parents of children with chronic disease become more depressed compared to the control healthy children. Mothers who are primary caretakers have more chance of acquiring psychiatric distress (6). Chronic diseases in children and adults have negative influences on

parents (7). They need to cope with the illness, side effects of medications, and complications that might arise. Hence, parents might develop emotional and mood disorders as well as anxiety which consequently affect the child's illness. Some parents might face psychiatric illnesses, which can even lead to suicide (8, 9).

Chronic diseases in children may lead to sleep disorder and depression in the mother. Parents' health is important because they are the child's caretakers. Stress of noncompliance of the child with medical treatments is harmful and affects parents' functioning, such that many of them develop depression and anxiety (10). Family members of asthmatics show higher levels of mood disorders, stress after a negative event, more drug abuse, and less social relations, compared to what is expected. Family's reaction and genetic components of acquiring asthma may interact and affect the outcome and length of the disease. This is particularly true for youth under-

Implication for health policy makers/practice/research/medical education:

Psychiatric symptoms and smoking rate have been high in mothers of asthmatic children in many articles from various parts of the world. These factors can affect the well-being of both asthmatic children and their mothers and compromise the treatment process. Therefore, it is necessary to determine the rate of psychiatric symptoms and smoking in mothers of asthmatic children in Iran to provide them better treatments.

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going social developments and stress of separation from the family, and may lead to psychiatric dilemma with medical noncompliance. It has been shown that 30% of asthmatics have anxiety or undergo periods of anxiousness. Personality traits such as anxiousness and weakness in facing difficult situations as well as instability and sensitivity towards being isolated have been seen in asthmatics (11). WHO reported that 80% of morbidity and mortality due to chronic diseases occurs in low and moderate socioeconomic countries. During 2007, approximately 36 million people in the world lost their lives due to chronic diseases (12).

2. Objectives

The purpose of this study was to evaluate the psychiatric symptoms of mothers of asthmatic children hospitalized at Masih Daneshvari Hospital, a quaternary referral hospital providing families with therapy or psychotherapy, if required.

3. Patients and Methods

This study was performed as an observational cross-sectional study using a questionnaire filled by the participants. All mothers of asthmatic children attending the pulmonary specialty clinic at Masih Daneshvari Hospital from February 2011 to March 2013, comprised of 182 individuals, were included in the study upon their agreement and after being ensured of the confidentiality. Demographic information questionnaire and the symptom checklist-90-R (SCL-90) questionnaire were used. SCL-90 is designed to evaluate a broad range of psychological problems and symptoms related to psychopathology. It is also used in measuring the progress and outcome of psychiatric and psychological treatments or for research purposes. According to the overview given by the publisher, the Symptom Checklist-90-Revised (SCL-90-R) is validated in individuals aged 13 years and older. It consists of 90 items and takes 12 - 15 minutes to administer, yielding nine scores related to primary symptom dimensions and three scores related to global distress indices. The primary symptom dimensions that are assessed are somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and a category of "additional items" which helps clinicians to assess other aspects of the subjects' symptoms. The three global distress indices are global wellness index, hardiness, and being symptom-free. A large number of studies have been conducted demonstrating the reliability, validity, and utility of the instrument (13). It is one of the most widely-used measures of psychological distress in clinical practice and research. This questionnaire is well-known and has been translated into Persian and psychometrically evalu-

ated by Dr. Mirzai in a nationwide study with 2241 participants. The Internal consistency was 0.77 for lack of concentration and 0.90 for paranoia. Its reliability factor was 0.89 for somatization and 0.90 for paranoia (14, 15).

A psychometric study was performed on the HSCL (Hopkin's symptoms checklist), a short version of SCL-90, with inclusion of 429 healthy individuals, 131 people with autoimmune disease and 111 general medicine patients. A significant correlation between somatization, anxiety, depression, interpersonal sensitivity and obsessive-compulsive behavior was found. Patients with autoimmune and general medical conditions scored higher (15). A case-control study in the city of Isfahan with participation of 200 patients with back pain and 350 controls was performed and the SCL-90 questionnaire was used. Scores were influenced by occupation and education (16). Score of ≥ 2.5 in each section corresponded to psychiatric disturbance. Pulmonary function testing was obtained from the patients' charts. If patients knew how to read and write, they filled the questionnaires out themselves, otherwise interviewers helped them to answer the questions. The gathered information was entered into the computer and analyzed via SPSS-16 statistical software. Correlations between variables were analyzed using student t-test and chi-square test. Mothers of these children denied any psychiatric, mood disorder or depression, and did not take any psychiatric medication or abuse drugs before the onset of their child's illness. Furthermore, smoking and substance abuse behaviors of participants were evaluated for determining whether mother's substance abuse would affect the child. All the participating parents signed informed consents, and the project was approved by the Ethics Committee of the hospital and was conducted according to the principles of the World Medical Association Declaration of Helsinki.

4. Results

The mean age of participants was 33 ± 5 years and the average number of their children was 2 ± 1 . The percentages of participants with high scores in the disease range (≥ 2.5) were 17% for anxiety, 2% for obsessive-compulsive behavior, 15% for aggression, and 15% for paranoia. Smoking had significant correlation with physical complaints ($P < 0.007$). Seven percent of the mothers were smokers and 4% drugs abusers. Smoking also correlated with obsessive-compulsive behavior ($P < 0.007$). Substance abuse correlated with physical complaints ($P = 0.001$). Smoking had significant correlation with physical complaints ($P < 0.007$). Totally, 20.9% of children had allergy. Physical complaints correlated with allergy in the children ($P = 0.035$). Location of the housing correlated with anxiety, aggressiveness and paranoia, observed more in Eastern and Central parts of Tehran. Demographic information are summarized in Table 1.

Table 1. Demographic Information, Substance and Allergy History ^a

Demographic Information	Results
Age, y	33 ± 5
Number of children	2 ± 1
Education, n = 182	
Illiterate	14 (8)
Primary school	25 (14)
Junior high school	41 (22)
Diploma	81 (44)
Higher than diploma	7 (4)
Bachelor of sciences or higher	14 (8)
Residence	
Central Tehran	111 (61)
Periphery of Tehran	12 (6.5)
Suburbs of Tehran	58 (32)
Smoker or second hand smoke exposure	
Yes	13 (7)
No	169 (93)
Contact with or drug abuse	
Yes	7 (4)
No	175 (96)
History of allergies	
Yes	38 (21)
No	144 (79)

^a All data are presented in Mean ± SD and No. (%).

5. Discussion

In this study, the percentage of participants with scores in the disease range (≥ 2.5) were 17% for anxiety, 2% for obsessive-compulsive behavior, 15% for aggression, and 15% for paranoia. A few correlations between scores, age, gender and education were found. Correlations were found between the housing conditions and scores of anxiety, aggression, paranoia and lack of concentration. Smoking had significant correlation with physical complaints and obsessive-compulsive behavior. Substance abuse correlated with physical complaints and physical complaints with allergy in the children. In a study in Turkey in 2008, anxiety and depression were evaluated in mothers of children with asthma and cystic fibrosis. In this study, mothers of 64 patients with asthma (with the age range of 2.9 - 8.1) and 21 children with cystic fibrosis (with the age range of 4.6 - 6.1) were compared with 32 mothers of healthy children (with the age range of 3.4 - 8.8). The socio-demographic situation was similar in three groups. The Turkish version of the sleep questionnaire (Pittsburgh sleep quality index or PSQI) and the hospital anxiety and depression scale (HADS) were used for the survey. Results

showed that chronic diseases in children influenced the sleep patterns and caused anxiety and depression among the mothers. Scores for anxiety and depression were not significantly different between the three groups using the Kruskal-Wallis test, but they were consistently higher than normal (17). Another study was performed in University of Pennsylvania regarding anxiety and depression in asthmatic children and their mothers in 2008. Participants included 75 asthmatic children aged 7 - 16 years and a control group of healthy children aged 7 - 15 years. All mothers of asthmatic children had higher scores in the anxiety and depression scales compared to the control group (18). In 2008, Dr. Meltzer and Dr. Moore performed a retrospective study in Philadelphia on sleeping disorders among children with chronic lung disease and their parents. Parents of patients with eczema had the highest incidence of sleep disorder (15 - 86%) due to stress about their children. They also suffered from anxiety and depression, and complained of decreased physical activity during the day (19). Their period of time to fall asleep was longer and they had more episodes of awakening (20).

In another study by Moore and David in 2006 in Norway, the quality of sleep and psychiatric health were evaluated in children with eczema and asthma. Mothers of children with eczema took 39 minutes and fathers 45 minutes to fall asleep every night. Parents of asthmatic children did not have this disorder. The age of children and whether they live with one or both parents influenced the outcomes. Sleeping disorder was also associated with anxiety and depression (21). Results from three studies showed that sleep disorder in parents of children with chronic diseases such as asthma and cystic fibrosis correlated with depression, anxiety, happiness and marital life. Women experience twice the rate of depression as men, particularly if it is accompanied with anxiety (22). In our study, the mother of children with allergy, who smoked and abused drugs, had significantly higher scores in the physical strength section of the questionnaire. We concluded that more studies need to be performed regarding the severity of psychiatric disturbances in parents of patients with severe and chronic asthma. Mothers of asthmatic children have more psychiatric problems than the general population. Psychological assessment of mothers with asthmatic children should be considered, particularly for children with allergies, or with a history of substance abuse or smoking in their parents.

Acknowledgements

Authors of the current research are thankful of all co-workers and patients in Masih Danehsvari Hospital who helped in conducting this research.

Authors' Contribution

Dr. Mitra Safa contributed to the study concept and design, critical revision of the manuscript for important

intellectual content, administrative, technical and material support, and study supervision. Ms. Fatemeh Ghassem Boroujerdi contributed to the data acquisition and analysis, drafting the manuscript and statistical analysis.

Financial Disclosure

Dr. Safa and Ms. Boroujerdi received honoraria from Masih Daneshvari Hospital.

Funding/Support

There was no financial support.

References

1. Quittner AL, Barker DH, Snell C, Grimley ME, Marciel K, Cruz I. Prevalence and impact of depression in cystic fibrosis. *Curr Opin Pulm Med*. 2008;**14**(6):582-8.
2. Judd T. The World Health Organization's Evidenced-Based Approach to Chronic Diseases: Primary Prevention or Caring for End-Stage Disease? *Perm J*. 2009;**13**(3):65-8.
3. Yilmaz O, Sogut A, Gulle S, Can D, Ertan P, Yuksel H. Sleep quality and depression-anxiety in mothers of children with two chronic respiratory diseases: asthma and cystic fibrosis. *J Cyst Fibros*. 2008;**7**(6):495-500.
4. Yue HE, Conrad DO. Sleep disruption in cystic fibrosis. *J Cyst Fibros*. 2008;**7**(6):886-8.
5. Markson S, Fiese BH. Family rituals as a protective factor for children with asthma. *J Pediatr Psychol*. 2000;**25**(7):471-80.
6. Blair C, Cull A, Freeman CP. Psychosocial functioning of young adults with cystic fibrosis and their families. *Thorax*. 1994;**49**(8):798-802.
7. Sakar A, Yorgancıoğlu A, Danacı AE, Yuksel H, Karaca N, Yıldırım CA. Family Functioning in Adult and Child Asthmatics. *Turkish Respi J*. 2005;**6**(3):145-8.
8. Sullivan CE. Cybersupport: empowering asthma caregivers. *Pediatr Nurs*. 2007;**34**(3):217-24.
9. Barlow JH, Ellard DR. The psychosocial well-being of children with chronic disease, their parents and siblings: an overview of the research evidence base. *Child Care Health Dev*. 2006;**32**(1):19-31.
10. Dewey D, Crawford SG. Correlates of Maternal and Paternal Adjustment to Chronic Childhood Disease. *J Clin Psychol Med Setting*. 2007;**14**(3):219-26.
11. Javanbakht M, Arshadi H, Nakhizadeh S. [Study of psychiatric health of mothers of children with asthma and control group using SCL-90R]. *Mashad Azad Eslam Univ Med Sci*. 2008;**3**(15):173-80.
12. World Health Organization. *Chronic diseases: A clinical manual*. 2008. http://www.euro.who.int/_data/assets/pdf_file/0006/96468/E91878.pdf.
13. Derogatis LR, Spitz KL. The SCL-90-R and the Brief Symptom Inventory (BSI) in Primary Care. In: Maruish ME editor. *Handbook of psychological assessment in primary care settings*. Mahwah, NJ: Lawrence Erlbaum Associates; 2000. pp. 297-334.
14. Macri F, Rossi FP, Lambiase C, di Castelbianco FB, Frassanito A. Psychological factors in childhood asthma. *Pediatr Pulmonol*. 2008;**43**(4):366-70.
15. Moosavi A, Ghorbani N. Psychometric study of HSCL (Hopkin's Symptoms Checklist). *Iran Psychol J*. 2008;**43**:366-70.
16. Yuksel H, Sogut A, Yilmaz O. Attention deficit and hyperactivity symptoms in children with asthma. *J Asthma*. 2008;**45**(7):545-7.
17. Pinquart M, Shen Y. Depressive symptoms in children and adolescents with chronic physical illness: an updated meta-analysis. *J Pediatr Psychol*. 2011;**36**(4):375-84.
18. James L. Psychiatric Issues in Pulmonary. *Dis Prim Psychiar*. 2007;**14**(3):25-8.
19. Meltzer LJ, Moore M. Sleep disruptions in parents of children and adolescents with chronic illnesses: prevalence, causes, and consequences. *J Pediatr Psychol*. 2008;**33**(3):279-91.
20. Hysing M, Sivertsen B, Stormark KM, Elgen I, Lundervold AJ. Sleep in children with chronic illness, and the relation to emotional and behavioral problems—a population-based study. *J Pediatr Psychol*. 2009;**34**(6):665-70.
21. Moore K, David TJ, Murray CS, Child F, Arkwright PD. Effect of childhood eczema and asthma on parental sleep and well-being: a prospective comparative study. *Br J Dermatol*. 2006;**154**(3):514-8.
22. Cottrell L, Khan A. Impact of childhood epilepsy on maternal sleep and socioemotional functioning. *Clin Pediatr*. 2005;**44**(7):613-6.