

A comparative study of two educational methods on anxiety and quality of life in asthmatic patients in Shiraz, southern Iran

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Abstract

Background: Asthma is a life threatening disease which may lead to the death of patient by causing spasm and airway obstruction. Stress is reported to spark off the disease and anxiety is an accelerating factor. This study was performed to evaluate two training methods in reduction of anxiety and improving the quality of life in patients suffering from asthma.

Methods: The present study comprised 84 patients with asthma referred to Shiraz University of Medical Sciences Clinic. They were divided into two groups of 29 subjects for face-to-face and 26 for pamphlete training methods, with 29 individuals considered as controls. In addition to two questionnaires relating to demographic information and quality of life, the present study included Krunbach Alpha, Hamilton anxiety tests and Lickhert classification. The total numbers varied from zero to 56 and scores of more than 14 indicated anxiety.

Results: The mean age of cases and controls were 43 and 52 years respectively. Among the participants, 41.8% were males of which 61% held a high school degree or higher with a monthly income of more than 110 \$. Of these, 34.6% had a disease duration of more than 10 years.

Conclusion: Both training methods had significant impact on reducing patient' anxiety and improving their quality of life. However, no relationship was observed between gender, age, education and income levels.

Keywords: Education; Anxiety; Quality of life; Asthma; southern Iran

Introduction

Asthma is a life threatening disease which may lead to death due to spasm and airway obstruction.^{1,2} Data from Japan showed the number of mortality caused by this disease to be about 5,100,000 individuals whereas higher rates were reported from western countries.³ The annual mortality due to asthma reported from USA estimated between 2000 to 5000 during 1978 to 1995.⁴ However, absence from work, inefficiency, loss of creativity, inactivity, and lower

quality of life were observed in about 5% of adults suffering from this disease.⁵ Asthma is a common disease with an annual cost of more than one billion dollars, which is markedly reduced by taking appropriate measures at various levels.^{6,7} Lawrence (1995) stated that, hospitalization, costs and complications would be reduced, if patients suffering from asthma followed an appropriate training programs.⁸ Although the etiology of the disease is not well known, different factors such as stress could trigger asthmatic attacks. Anxiety is considered not only as an accelerating factor of asthma, but it is also consequent upon the disease.^{10,11} Dyspnea attacks are severely stressful⁶ and

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may flare up airway resistance and recurrence of asthmatic attacks in patients.¹² Various studies showed that, spells of anxiety in asthmatics caused respiratory arrest, disability to react properly during an attack, and finally deteriorating the quality of life.^{4,8,13,14} Anxiety in asthma is one of the untoward complications due to certain medications. The anxiety following drug therapy, unawareness about and fear from drug complications would cause an incorrect follow up of treatment and lead to uncontrolled form of the disease, attack recurrence, debility and reduction in quality of life. Therefore, physicians treating asthmatics,^{5,15,16} should pay due attention to the rate of their stress and adopt a policy to reduce patients' anxiety.^{4,17,18} Different studies on these patients showed that following training schedules would affect treatment strategy, alleviate signs and symptoms, control anxiety and improve the quality of life.¹⁹⁻²² In regard to the importance of training programs for the treatment of patients suffering from asthma,^{2,15,19} the present investigation was conducted to compare two face to face and pamphlete training methods, in order to determine the more useful, economical and practical approach. Further objective of this study was to evaluate foregoing methods in relation to reducing the anxiety rate and improving the quality of life in such patients.

Materials and Methods

The population under study consisted of all patients referred to Pulmonology Clinic of hospitals affiliated to Shiraz University of Medical Sciences. Patients were randomly divided into two different groups of face to face (n=29) and pamphlete (n=26) training methods with 29 persons considered as control. All patients could read the training pamphletes. Two questionnaires collected demographic data and information about quality of life. They were ranked according to Lickhert classification. The first questionnaire consisted 28 questions on signs, movement limitations, tolerance to environmental stimulus and emotional conditions of the patients. Demographic information were included in the questionnaire. Validity of the questionnaire was confirmed by the specialists and its reliability was confirmed by Krunbach Alpha test with a 95% confidence interval. A second questionnaire included the standardized form of Hamilton anxiety test for evaluation of patients' emotional status using Lickhert classification of 0 to 4. As a whole, the total numbers varied from 0 to 56, and a score of

more than 14, indicated anxiety of the patient. Both questionnaires were completed by interview and pre and post tests were performed on training groups. In order to avoid the training impacts of pretest, at the end of training program, only post tests were conducted for the control group. Quality of life of the patients and anxiety were determined after 2.5 months. The data were analyzed using t test, ANOVA and correlation coefficient test and utilizing SPSS software (10.000, Chicago, IL, USA). A P value<0.05 was considered significant.

Results

The mean age of training and control groups were 43 and 52 years respectively. Among the participants, 41.8% were males of which 61% held a high school degree or higher with a monthly income of more than 110 \$. Of these, 34.6% had a disease duration of more than 10 years.

In regard to demographic indices a significant difference was found between training group and control (P<0.001). Both training methods were beneficial in reducing anxiety and improving the quality of life (P<0.01). At the end of training course, 53 (96.3%) of the patients found the programs useful and the reduction in anxiety was evidenced by the mean anxiety score decreasing from 13.50 to 6.50 (P<0.001) upon completion of training course. The pretest mean score of quality of life was changed from 2.41 to 3.86, without any statistically significant difference found between training methods in relation to anxiety reduction and improvement in quality of life. Also, no statistically significant relationship was observed between anxiety and quality of life and the variables of age, gender, education, income level and marital status.

Discussion

Various studies showed that, performance of different training programs would cause increasing awareness, practicality and improvement in quality of life in disabled asthmatic patients. It would increase the daily physical activities, self-care, reduce hospitalization and also, decrease anxiety in these patients.^{17,21-25} Lic (2001) reported that, performance of face to face and pamphlete training methods by patients and long distance video training would result in quick reduction in anxiety and improvement in quality of life of such

patients.^{4,6,18} The results of present study showed that, although no statistically significant difference was found between different training programs, both methods could reduce the anxiety and improve the quality of life with post-test scores being statistically different from those of control group. Also, our findings showed a statistically significant correlation between anxiety and quality of life in asthmatic patients ($P < 0.01$), who showed reduced anxiety and improvement in quality of life. Ten reported that asthmatic attacks were stressful and prevented the patients from acting reasonably during the attack, caused increasing disability, deteriorated the quality of life and increased anxiety in patients.²³ Lic (2001) suggested to perform training programs as a part of treatment for patients suffering from asthma.¹⁸ Effective training involving patients and their families, as well as accessibility to health care through telephone, increasing care during recurrences of the disease and stable treatments are considered as crucial and timely. The foregoing would facilitate management follow up, the patient's active cooperation in relation to self care, and cause reduction in anxiety and improvement in quality of life.²⁶ Boulet (1998) showed that a large number of patients with asthma who were unaware about the effects of inhalatory drugs, exhibited reduced compliance to such medications.²³ Our study, showed that only 11 out of 55 of the patients under training were aware about the effects of the aforemen-

tioned drugs. Additionally, about 47 out of 55 of training group felt apprehensive about untoward complications of steroid drugs and only 10 patients used inhalatory drugs according to the prescribed schedule before participation in the training program. A study in Taiwan, showed that, only 17.4% of the control group were aware about correct use of inhalatory drugs. It also demonstrated that, despite improvement in treatment regimen, complications and mortality from asthma was increasing significantly. Other important issues accounting for disability and control of the disease included lack of treatment follow up, inappropriate medication, misconception about asthma, incorrect perception about health and lack of enough training.²⁶

Our findings showed the necessity of determining the usefulness of different methods and implementation of appropriate training program for patients suffering from asthma in order to improve their quality of life, promote level of health, alleviate anxiety, reduce complications, cut expenses and decrease mortality.

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References

- 1 Krouse JH., Brown RW., Fineman SM., Han JK., Heller AJ., Joe S., Krouse HJ., Pillsbury HC. 3rd asthma and the unified airway otolaryngol. *Head Neck Surg* 2007;May; **136(5Suppl)**:S75-106.
- 2 Nakazawa T., Kawakami Y., Sudo M., Kobayashi S., Suetsugu S., Nakajima S. Trends in asthma-related death among adults in Japan, 1986-1991 analysis of responses to questionnaire sent to hospitals with at least 200 beds. *Nihon Kyobu Shikkan Gakkai Zasshi* 1996;Feb; **34(2)**:157-63.
- 3 Ten-thoren C, Telermann F. Reviewing asthma and anxiety. *Respir Med* 2000; **94(5)**: 409-15.
- 4 Puderbaugh US. Nursing Care Planning Guide. W.B. Saunders Company; 2001.
- 5 Tschopp JM., Frey JC. Bronchial asthma and self management education. *Swiss Med Wkly* 2002;Feb23; **132(7-8)**:92-7.
- 6 Gallefoss F., Bakke PS. Cost effectiveness of self management in asthmatics: a 1 year follow up randomized, controlled trial. *Eur Respir J* 2001;Feb; **17(2)**:206-13.
- 7 Ignacio-Garcia JM., Pinto-Tenorio M., Chocron G., Raldez MJ. Benefits at 3 years of an asthma education program coupled in with regular reinforcement. *Eur Respir J* 2002;Nov; **20(5)**:1095-101.
- 8 Ritz T., Steptoe A., Dewilde S., Costa M. Emotions and stress increase respiratory resistance in Asthma. *Psychosom Med* 2000; **62(3)**:401-12.
- 9 Mietal TJ. Bronchial asthma and self-management education. *Swiss Med Wkly* 2002; **132(7-8)**: 92-7.
- 10 Kilpelainen M., Kosken Vuo M., Helenius H. Stressful life events promote the manifestations of asthma and atopic asthma. *Clin Ex Allergy* 2002; Feb; **32(2)**:256-63.
- 11 Movahedi M., Tabizadeh N. A guide to allergy and asthma for nurses. Iranina Asthma and Allergy Association Publication. 1st ed; 2001.
- 12 Eisner MD., Iribarren C. The influence of cigarette smoking on adult asthma. *Nicotine Tob Res* 2007;Jan; **9(1)**:53-6.
- 13 Lehrer P., Feldman J., Giardino N., Song HS., Schmalting K. Psychological aspects of asthma. *J Consult Clin Psychol* 2002; Jun; **70(3)**:691-711.
- 14 Phipps Wilma Medical- Surgical Nursing eight edition Carol J Green PhD, RN Mosby; 2007. p. 685-93.
- 15 Marabini A., Brugnamì C., Gurradi F. Short term effectiveness of and asthma educational program. *Respir Med* 2002; Dec; **96(12)**:993-8.

- 16 Wagner C W. The ongoing evaluation of the impact of depression on asthma. *Ann Allergy Asthma Immunol* 2002Dec;**89(6)**:540-1.
- 17 Brunner & Suddarths text book Lippincott williams and wilkins. A wolters kluwer company philadelphia baltimore. New York-London Buenos. Tlong kongsydey Tokyo **2004**;587-595.
- 18 Liu C., Feeker Y. Can asthma education improve clinical outcomes? An evaluation of a pediatric asthma education program. *J ASLHMA* 2001 May;**38(3)**:269-78.
- 19 Anonymous, Advocate's disease management program reduces re-admissions for CHF and asthma. *Perform-impror-Advis* 2003 Mar;**7(3)**:44-7.
- 20 Cote J., Bowie DM., Robichaud P., Parent JG. *Am-J-respir-cirt-care-med* 2001 May;**163(6)**:1415-9.
- 21 Chen FSh., Yin TJ. Asthma in Taiwan. *Ann-Allergy Asthma-Immunol* 2002 Sep;**89(3)**:311-5.
- 22 Taggart VS, Fulwood R. Youth health report card. *Asthma Prev Med* 1993;**22(4)**:579-84.
- 23 Boulet LP. Perception of the role and potential side effects of inhaled corticosteroids among asthmatic patients. *Chest* 1998 Mar;**11B(3)**:587-92.
- 24 Guevara JP, Wolf FM., Grum CM., Clark NM. Effects of educational interventions for self management of asthma in children and adolescents; systemic review and meta analysis. *BMJ* 2003 Jun14;**326(7402)**:1308-9.
- 25 Lawrence DA. Psychologic stress and asthma neuropeptide involvement. *Environ Health Perspect* 2002 May; **110(5)**:A230-1:discussionA231.
- 26 Divertie V. Strategies to promote medication adherence in children with asthma. *MCNAM J Matern Child Nurse* 2002 Jan-Feb;**27(1)**:10-18.