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# General health and religious coping strategies in patients suffering from asthma

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## Abstract

**Background and Objectives:** Asthma is a chronic respiratory disease characterized by reversible contraction of airways. Coping strategies can reduce the negative impact of the disease in individuals or cause incompatible behaviors by negative effect. This study aimed to evaluate the religious coping strategies in asthma patients and the relationship of religious coping and general health.

**Methods:** The study included 102 asthmatic patients referred to the pulmonary clinic of Shahid Beheshti hospital of Qom. Brief religious coping strategy questionnaire and the general health questionnaire were used in this study.

**Results:** The mean positive religious coping strategy was 26.24±9.89 and 60% of the patients had higher than average scores. The mean negative religious coping strategy was 10.56±3.99 and 35% of patients had a mean score higher than average scores. The mean total general health score was 23.91±11.9.

**Conclusion:** The study results showed that asthmatic patients are at greater risk of depression and a negative correlation exists between positive religious coping and general health scores.It can be concluded that in asthmatic patients, depression should be suspected sooner. Also, during the course of treatment and in cases of resistant to treatment, this issue should be considered. It can be concluded that the patients who use more positive coping strategies and have a strong spiritual beliefs may have higher mental health that leads to higher physical health and a better response to treatment.

**Keywords:** Religious coping strategies; general health; depression.

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## Introduction

Asthma is a chronic respiratory disease characterized by reversible contraction of airways. Common asthma symptoms include coughing, shortness of breath and wheezing. It is a relatively common disease affecting approximately 10-12% of adults and 15% of children. Viral infections, allergens, stress and anxiety may increase asthma symptoms (1,2).Among these triggers, psychological factors and stress have a great impact on the appearance of symptoms (3). Many patients saidstress worsen their asthma symptoms.

There is no doubt that psychological factors can induce bronchoconstriction through cholinergic reflex pathways. Chronic diseases such as asthma make people susceptible to varying degrees of stress that require a continuous process of self-adaption in cognitive, emotional and behavior levels (4).

Stress has many different definitions in the literature. One of the most popular psychological definitions is that stress occurs when demands from the environment challenge an individual's adaptive capacity, or coping ability (5). For many patients suffering from chronic diseases, spirituality or religiosity is an important resource for coping. Actually, it can be regarded as an important factor to cope (6). Patients with chronic diseases or in final phases of disease are especially likely to have unmet spiritual needs (7).

Psychological coping mechanisms are commonly called coping strategies. Coping strategy is the trend to manage different positions, trying to solve personal problems and seeking to reduce or tolerate stress or conflicts (1). Coping model provides a framework for individuals to reduce stress and negative impact of the disease or cause incompatible behaviors by negative effect (4).

Studies in chronic diseases have shown correlation between coping strategy and clinical outcomes including function, disease control, morbidity and mortality, and health related quality of life (8). Spirituality and religion have a significant effect on patients' beliefs about the disease, strategies for coping with it and approaches to its management (9).

Religious coping is a deal in which a person uses religious beliefs in coping with the problems and pressures of life and its type depends on religious beliefs and can have positive or negative effects on a person's exposure to disease. Although the association between religious beliefs (coping), well-being and mental illness is complex, but it is clear that religious beliefs and practices have an important role in preventing and reducing mental and emotional problems (8).

Recent studies show that religious involvement is associated with better mental and physical health, improved coping with disease and medical outcomes (10).

In fact, patients with chronic diseases use a number of cognitive and behavioral strategies to cope with their illness, including religious/spiritual forms of coping, such as prayer and seeking spiritual support to manage their pain (11). In these patients, positive religious coping strategies are associated with positive impacts and religious outcomes like spiritual growth, closeness to God and satisfaction with religious life; however, negative religious coping strategies are not associated with any of the outcomes (12).

Many studies emphasized that appropriate use of religious coping strategies lead to correct assessment of the situation, increasing the feeling of safety and security and thinking. Also, behaving with appropriate coping strategy helps to reduce the stress and its emotional impact (8).

Despite the profound impact of religion on quality of life, mental health and coping strategies in various diseases, surveys evaluating religious coping strategies of Muslims are limited. On the other side, no considerable studies have been conducted in patients with asthma. According to religious beliefs of Muslims and lack of similar studies in this issue, we aimed to evaluate the coping strategies of Muslim asthmatic patients. Performing this study may help understanding the most common religious coping strategy and better understanding of the psychological characteristics of these patients that can help the future interventional studies in patients by making appropriate changes to decrease emotional and psychological burden of chronic disease and improving the mental health of these patients. So, we can expect better treatment compliance and a better response to treatment and reducing the number of acute attacks and controlling the disease.

**Method**

In this cross-sectional study, 102 asthmatic patients referred to pulmonary clinic of Shahid Beheshti Hospital were studied. Asthma was confirmed by the America Thoracic Society

criteria for asthma by history taking (cough, shortness of breath and wheezing), physical examination (wheezing), and pulmonary function tests (13). Exclusion criteria included certain chronic physical illness like diabetes, problems like incurable illness in a family member or parental separation, having a religion other than Islam and illiteracy. After explaining the study design and ensuring confidentiality, patients were included and filled out the religious coping strategy questionnaire (Brief RCOPE) which has been standardized by the Rohani et al. and demographic data questionnaire (14).

For better evaluation of mental status, the 28 questioned general health questionnaire (GHQ) was used and the spirometer findings was recorded; it is a widely used questionnaire to assess general well-being and distress. GHQ is simple to administer, easy to complete and score and widely used in many studies. It can be scored in a variety of ways which is useful in providing multiple outcome measures (15). The questionnaire was initially developed with 60 questions but nowadays a range of shortened versions of the questionnaire including the GHQ-30, the GHQ-28, the GHQ-20, and the GHQ-12 are available. The scale asks the respondent experience of a particular symptom or behavior recently. Each item is rated on a 4 point scale (less than usual, no more than usual, rather more than usual, or much more than usual).

The most common scoring methods are bi-modal (0-0-1-1) and Likert scoring strategies (0-1-2-3). In this study we used GHQ-28 and Likert scoring (16).The cut-off-point is 23 and the maximum score is 84. The questions are divided into 4 indicators as follows: somatic symptoms (items 1-7), anxiety/insomnia (items 8-14), social dysfunction (items 15-21) and severe depression (items 22-28). The aim of this questionnaire is to differentiate between psychological and psychiatric co-morbidity in patients. It is used to screen for emotional distress and possible psychiatric morbidities (15). Upon completion of data collection, data was analyzed. Then data was compared using SPSS version 16.0 and a p value less than 0.05 was considered as being statistically significant.

## Results

From 102 patients enrolled in the present study, 55(53.9%) were female and 47(46.1%) were male. The mean age of the patients was 42.79±14.2 years with the mean asthma duration of 65.93±89.01 months. Educational status of 47.1% was primary school, 34.3% diploma, 13.7% bachelor degree and 4.9% had master degree or higher.

The mean positive religious coping strategy score was 9.89±26.24and 60% of these patients had scores above the average. The mean negative religious coping strategy score was 10.56±3.99and 35% of them had higher than

**Table 1: The mean religious coping strategy score and GHQ indexes based on gender**

| Variables | Gender | Mean±SD | P value |
|---|---|---|---|
| **Positive coping** | Male | 24.87±7.91 | 0.195 |
| | Female | 27.45±11.31 | |
| **Negative coping** | Male | 10.34±3.51 | 0.485 |
| | Female | 10.91±4.37 | |
| **Somatic symptoms** | Male | 7.36±3.914 | 0.775 |
| | Female | 7.58±3.828 | |
| **Anxiety/insomnia** | Male | 6.38±4.230 | 0.498 |
| | Female | 6.96±4.359 | |
| **Social dysfunction** | Male | 6.68±2.798 | 0.586 |
| | Female | 7.02±3.353 | |
| **Severe depression** | Male | 2.87±3.960 | 1.000 |
| | Female | 2.87±4.005 | |

Asthma duration was not statistically different based on positive and negative religious coping strategies (p=0.284 and p=0.102). Also, positive religious coping strategy was significantly associated with gender (p=0.007) but negative religious coping strategy was not significant (p=0.55). Age was not associated with positive and negative religious coping strategies too (p=0.259 and p=0.177, respectively).Also, the association between education and positive and negative religious coping strategies were not statistically significant (p=0.462 and p=0.300, respectively). The mean monthly income was not associated with positive and negative religious coping strategies (p= 0.764 and p= 0.906, respectively).

The mean GHQ score was 23.91±11.9 and 33% of the patient had scores higher than 23 (score 23 was the cut-off point in previous studies and individuals with scores higher than 23 are suspected to have mental disorders). In somatic symptoms indicator, the mean score was 7.48±3.85 and 52.9% had score less than 7 (score 6 was the cut-off point for indicators). The mean score of anxiety/insomnia was 6.69±4.28 with 62.7% less than 7. Social dysfunction and severe depression were 6.68±3.1 and 2.87±3.96 respectively with 61.8% and 86.3% less than 7.According to the cut-off point of 6, the results show that asthmatic patients are at higher risk for severe depression and about 90% of the patients are suspicious to depression (Table 2).

**Table 2: GHQ indicatorsbased on scores**

| Indicators | Mean±SD | <7 | 7-14 | 14-21 |
|---|---|---|---|---|
| **Somatic symptoms** | 7.48±3.85 | 54(52.9) | 45(44.1) | 3(2.9) |
| **Anxiety/insomnia** | 6.69±4.28 | 64(62.7) | 32(31.4) | 6(5.9) |
| **Social dysfunction** | 6.68±3.1 | 63(61.8) | 36(35.3) | 3(2.9) |
| **Severe depression** | 2.87±3.96 | | | |

There was an inverse correlation between general health and positive religious coping, that was statistically significant (p=0.001, r=-0.35) but no correlation was found between the general health and negative religious coping (p=0.26, r=0.11).

No statistically significant difference was found between age and positive and negative religious copingstrategies (p=0.259 and p=0.177 respectively).

Also, asthma duration was not different in both groups (p>0.05).Positive religious coping was different between male and females and women used positive religious coping more than men (p=0.007); but negative religious coping was notdifferent in both groups (p=0.54). Religious coping was not statistically significant in different levels of education and monthly income (p>0.05).

**Table 3: The mean spirometric values on each variable**

| | FVC | FEV1 | PEF | FEV1-FVC |
|---|---|---|---|---|
| **Mean±SD** | 71.23±17.9 | 63.85±19.1 | 55.54±20.2 | 82.67±15.05 |
| **Minimum** | 28 | 25 | 4 | 45 |
| **Maximum** | 114 | 121 | 113 | 116 |

Spirometer mode was 0% restrictive, 72.5% obstructive, 20.6% mixed and 6.9% normal. There was a weak inverse relationshipbetween positive religious coping strategy and mean spirometer indexes including FVC, FEV1 and PEF which was not statistically significant (p>0.05). $FEV_1$ and PEF had a weak association with negative religious coping strategy which was not statistically significant (p>0.05). Only FVC had an insignificant association which was close to the significantvalue (p= 0.055). Finally, negative religious coping strategy and the mean FEV1-FVC were not statistically significant.No significant correlation was found between GHQ score and negative religious coping (P=0.26, r=0.11).

Cigarette smoking was associated with somatic symptoms (p=0.046), anxiety/insomnia (p=0.024) and severe depression (p=0.039) but not with social dysfunction (p=0.143), positive and negative religious coping strategies (p=0.459 and p=0.281 respectively).

**Discussion**

Chronic illness has a significant impact on the life of patients and affects physical, functional, emotional, social and spiritual well-being (17). The present study demonstrates that the prevalence of somatic symptoms is greater than other indicators in asthmatic patients. Also the mean positive religious coping strategy was greater than negative religious coping strategy. The mean positive and negative religious coping strategy scores were 9.89±26.24and 10.56±3.99respectively. 60% of patients showed higher than mean score in positive religious coping and the portion about negative religious coping was 35%. Taheri et al. evaluated the spiritual wellbeing and religious coping strategies of hemodialysis patients and the mean positive and negative religious coping strategies were 23.38±4.17 and 11.46±4.34, respectively and53.6% of the patients showed higher score than mean score in positive religious coping and the portion about negative religious coping was 37.9% (18).

In comparison with this study, it is said that asthmatic patients have higher positive religious coping strategies than the hemodialysis patients but negative religious coping strategies were not different in both groups. Taheri et al. stressed that greater use of positive coping strategy is associated with higher mental and spiritual health (18).Ahmad et al. found that higher religious coping strategy is associated with higher compliance rate of the treatment in patients with advanced breast cancer (19). To explain these differences, we may argue that cancer patients were much older, comprised a higher proportion of religious individuals, and a shorter course of disease.

In our study, the use of positive religious coping strategy was desirable and was associated with better acceptance of long-term treatment of asthma. Studies have also stressed that religion and spirituality tend to be higher with aging and it is associated with higher positive religious coping strategy. In our study, the mean age of the patients was above 40 years, and this could be one reason for the results.

We found no statistically significant difference between somatic symptoms, anxiety/insomnia, social dysfunction and severe depression in men and women. With regard to gender, it has previously been proven that the prevalence of depression and anxiety symptoms is higher among women. Additionally, gender can be a predictive factor for depression, following the manifestation of a primary anxiety disorder (20).

De Miguel Diezet al. found a high prevalence of psychiatric disorders in women with asthma, in comparison to asthmatic men. They suggested that the gender discrepancies could be due to the existence of different asthma phenotypes in men and women (21).

This hypothesis has been suggested by Sundberg et al., after detecting that women begin to show asthma symptoms later and have a less probability of suffering from allergic asthma (22).

The results showed an inverse correlation between positive religious coping strategy and general health scores means that the higher positive religious coping strategies used, the lower general health achieved. Rippentrop et al.'s study showed that negative religious coping strategy significantly predicts mental health status of patients with pain conditions (23).

Study of Taftiet al. was consistent with our study. They assumed that depression prevalence among general population is 50% and it is higher in asthmatic patients. The prevalence of depressive symptoms was 65.4% in comparison with 86.3% in our study indicates higher levels of depression in our patients. So, it is concluded that depression prevalence in asthmatic patients is higher than general population. They found that scores obtained in the questionnaire was associated with number of treatments for asthma, the

number of medical visits and the number of admissions for asthma. They concluded that GHQ-28 questionnaire is useful for asthmatic patients who require care and treatment for depression (24).

Trankle et al. found that the general health score increases with positive religious coping strategy elevation. It is said that spiritual wellbeing is one of the dimensions of health. So the factors affecting health can positively and negatively affect spiritual wellbeing (25).Lin and Bauer-Wu found that patients with an enhanced sense of psych spiritual well-being are able to cope more effectively with the process of terminal illness and find meaning in the experience (26). It is concluded that the more positive religious coping strategy and higher spiritual beliefs the patients have, the higher mental health will be obtained and it will lead to physical health and better response to treatment. It can be used to achieve the best therapeutic outcome in these patients. One can conclude that in asthmatic patients, depression should be suspected sooner than healthy people and should be considered during the course of treatment of these patients and treatment-resistant cases. However, the impact of spirituality/religiosity on health and disease-related aspects are highly dependent on the cultural context, and thus results from studies of a country cannot be easily generalized to other countries (27).

Healthcare professionals can play an important role in enhancing psych spiritual well-being, but further research is needed to understand specific interventions that are effective and contribute to positive patient outcomes (26).

We suggest further researches to obtain a valid and reliable spiritual need assessment tool for Iranian population, which then must be implemented in well-designed health care studies. Such instrument is not available now (7).

There were certain potential limitations in this study that should be taken into account. First, because it was a cross-sectional survey, causality could not be inferred. The study thus does not answer whether asthma decreases psychological health or if also the perception of somatic symptoms could be worsened by psychological illness. Nonetheless, a series of variables independently associated with the existence of depression or anxiety in adults with asthma has been identified. Secondly, the work is based on self-reported information. Using a self report of anxiety or depression with the criteria used in this study is highly likely to result in under-reporting. As suggested by previous studies, anxiety and depression are often unidentified and under-treated in asthmatic patients (21).

Health care professionals should be aware of the increased risk of psychological dysfunction and mental disorders in patients with asthma. We suggest screening for mental health disorders annually, perhaps at each clinical contact, in patients with asthma. It would be important to have longitudinal studies in order to assess the impact of optimizing physiological disorders in these subjects in terms of their mental health and their physical activity.

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