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Asthma in adult patients: Stressors related to illness

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Abstract

Background: Bronchial asthma is a chronic respiratory disease that require long-time of treatment and care to control the symptoms. Asthma imposes a significant clinical, social, and economic burden. While stress may be harmful for individuals with a bronchial asthma because preexisting physiological and psychological vulnerabilities may place them at a disadvantage that could increase their chances of suffering from the ill effects of stress. Nurses who are working with patient suffering from asthma are able to provide good care by reinforcing knowledge, ensuring adherence to a management plan, checking inhalation technique, and adjusting medication according to guidelines. The aim of this study is to assess and explore the stresses facing patients with bronchial asthma.

Design: This was a descriptive study Setting Bashier Jordanian hospital and prince Hamza hospital from out patients department.

Patients and methods: Adults patients with asthma(n=120) who were free from chronic illness completed questionnaires that measured three mains dimensions of stressors facing bronchial asthma patients ,such as treatment, family, and disease stressors. More than half of the sample (65%) had stress related to compliance with medications and (55%) were still unable to control the disease. Patients who did not understand the disease represent (72.8%) and nearly, (69%) of the sample patients sometimes depending on others. Meanwhile, (63%) of the sample had fear from death and more than half (58.3%) of them had problems in their sleep. However, (63%) reported that their disease effected their sexual activity.

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Conclusion: Asthma can cause physical discomfort, as well as psychological and social disruptions; almost all the participants in this study were facing various stressors which had impacts on their lives. Stressors related to compliance of treatment affected more than half of the participants. Concerning family stressors more than half of the patients complained from lack of family support. Finally, regarding the item (stress related to disease) the result showed that more than half of the patients fear from episodes of asthma attack.

Keywords: asthma, stress, nurse, treatment, family.

1. Introduction

Asthma is one of the most common chronic diseases. It's characterized by chronic airway hyper responsiveness accompanied by recurrent episodes of wheezing, coughing and dyspnea. Approximately 300 million peoples worldwide have asthma and its prevalence has increased over the past 20 years by (50%) every decade [1, 2].

Global Initiative for Asthma GINA [3] reported that asthma accounted for about one of every 250 deaths worldwide, in the United States Asthma accounts for more than 497,000 hospitalizations annually [4]. The total economic cost of asthma exceeds \$27.6 billion. In Cairo the prevalence of physician-diagnosed asthma was 9.4% [5]. While in Saudi Arabia the symptom prevalence is lower than that found in Cairo, and the prevalence of physician-diagnosed asthma is higher [6, 7].

There is little information about incidence of asthma in Iraq and Jordan as well as others Arab Countries, however, a study conducted by Abuekteish et al. [8] showed that the prevalence of asthma and wheezing among school children aged 6–12 years in the northern part of Jordan was 4.1% and 8.3%, respectively.

Research found that patients with asthma are facing stress because of their asthma symptoms such as wheezing, shortness of breath, tightness in the chest, night waking and coughing. On the other hand, persons with asthma who suffer from symptoms such as dyspnea and nocturnal awakening are at increased risk for psychological distress and depression [9].

Several psychological and emotional factors have been noted to be associated with poor asthma control, near fatal asthma attacks and asthma mortality [10] have found a very high rate (65%) of psychiatric disorders like mood changes and anxiety in a high-risk asthmatic patient. They suggested psychiatric disorders should be taken into account when treating asthma [11].

Stress is defined as the exposure of an individual to a threatening stimulus or overwhelming event, and It is known to have detrimental effects on cardiovascular, neuroendocrine and immune systems and also it has been associated with the exacerbation of asthma symptoms. Increased rates of psychological distress (assessed as depression, anxiety, panic attacks) have been observed on patients with chronic obstructive pulmonary disease (COPD) compared to healthy individuals and those with other medical conditions. The prevalence of psychological distress was 58 percent in hospitalized patients with COPD and 42 percent in COPD non hospitalized patients, both higher than patients with episodic respiratory disease (21 percent), mixed chronic disease (31 percent), and healthy controls (4 percent) [12].

Yawn [13] mentioned that asthma as a stress disease that may be induced by various stressors, she added we are exposed to various stress and we try to adapt ourselves to the stress. Stressors are forces from the outside world affecting the individual. The individual responds to stress in way that affect upon them well as their environment. In general stress is related to both external and internal factors. External factors include the physical environment, including the job, person home, the relation with others and all situations challenge.

While, the internal factors that influence the person ability to handle stress include, the nutritional status, overall health and fitness levels, emotional well-being and the amount of sleep and rest.

The patient should be aware by themselves of the relationship between those stressors and asthma to help them to overcome those stressors and control the disease. Little is known about different types of stressors influence patient. Therefore this study aimed to find out the most common stressors facing patient with asthma and its relations to some variables.

In addition, nurses may influence the patients perception of the illness by providing them with relevant information, reinforcing and encouraging them to express their feelings and concerns regarding their patients illness with each other and with the medical staff. Assisting patients to determine and achieve short-term goals may serve as an empowering coping behavior [14, 15].

Traditionally, clinicians and researchers had used clinical or physiologic data to routinely evaluate the clinical status of patients with asthma. Such measures are clearly useful in clinical settings but do not address the full impact of asthma on the physical, psychological, emotional, and social well-being of these patients. Therefore, identifying stressors that affect on patients with asthma could help health team to provide effective interventions by enhancing patient knowledge and understanding about asthma and prevent further complications.

2. Aims of the study

This study was conducted to identify the stressors facing patients with asthma and to find out the relationship between these stresses and some socio- demographic variables

3. Subjects and method

This is a descriptive study carried out on 120 patients with bronchial asthma in Bashier and prince Hamza hospitals from out patients department.

Patients were selected according to the following criteria:-

- 1-Patients diagnosis was asthma
- 2-Adult patients age between 18-70 years old.
- 3-Free from chronic illness and had no physical deformities.

Construction of questionnaire format was based on literature reviews and research studies related to this study.

A likert type scale of 3 points always, sometimes, never was used for patient answers

The questionnaires were consisted of:

- 1-Socio-demographic data and causes of disease;
- 2-Stressors facing patient with asthma can be organized into 3 main domains:-

A-Stressors related to treatment of disease it consists of 5 items that describe stress related to treatment domain.

B-Stressors related to the patient's families and other persons domain it consists of 7 items that describe those stressors.

C-Stressors related to disease itself domain it consists of 13 items that describe stress which may be induced by disease.

In order to determine the validity of the questionnaires, they were reviewed by 20 experts most of them agreed about the items concerning the stressors. Test retest reliability was ($r > 0.85$ and internal

consistency reliability $r = 0.75$. Answers to the questioners to each item were given on 3 points scale never, sometime, always. For each scale the score was calculated as the mean of response to the items.

Data was gathered by completing the questionnaire format during patient's interview.

4. Ethical Issues:

An informed consent were taken from all the participants, while insuring the participating sample members group that confidentiality were maintained, and data were coded anonymously. Ethics approval was provided by the university and medical center.

5. Statistical Analysis

Data were coded and entered using the Statistical Package for the Social Sciences for Windows (SPSS version 13.0). Descriptive statistics (frequency, percent, means and standard deviation) were generated for all measures. Data were first descriptively analyzed to check the distribution of all study variables. The reliability was tested and determine by using Cronbach alpha reliability coefficient. Chi-square test was used as a test of significance to compare the frequency of occurrence of categorical variable. Result were considered statistically significant at $p < 0.05$ level.

6. Results

Table 1. Socio-demographic characteristics of patients

Demographic variables	classified	Frequency	%
Sex			
Male	Male	74	61.7
Female	Female	46	38.3
Age			
	18-28	18	15.0
	29-38	46	38.3
	39-48	36	30.0
	49-58	15	12.5
	59 and more	5	4.2
Sociability state			
	Single	21	17.5
	Married	94	78.3
	Widow	2	1.7
	divorce	3	2.5
Academic level			
	Illiterate	7	5.8
	Read & Write	8	6.7
	Primary	25	20.8
	Secondary	60	50.0
	University	19	15.9
	Post graduate	1	0.8
Job			
	employment	72	60.0
	retired	16	13.3
	Without work	4	3.3

Insurance	household	28	23.4
	government	47	39.2
	Private	42	25.0
	Without insurance	31	25.4
Smoking	yes	75	62.5
	no	25	37.5
Duration of disease	1-3	43	35.8
	4-6	61	50.8
	7 and more	16	13.4
Disease occur in family	yes	93	77.5
	no	27	22.5
Smoking in family	yes	97	80.8
	no	23	19.2

Table (1) demonstrated that the majority of patients aged between (29-38) years old, most of them were married (78.3%) and (61.7) were males. Regarding the employment (60%) was employed and (39%) had health insurance. The majority of the sample patients were smokers (63%), while (80.8%) of the patients' family members were smokers. The average duration of asthma since initial diagnosis was approximately five years (50.8%).

Table 2. Treatment stressors domain

Treatment stressors	Never	%	sometimes	%	always	%	$\bar{X} \pm SD$
Compliance with medications	14	11.7	28	23.3	78	65.0	2.53±0.70
Ability to control the disease	13	10.8	42	35.0	65	54.2	2.43± 0.68
Side effects of the drugs	19	15.8	44	36.7	57	47.5	2.32±0.73
Increased the cost of treatment	17	14.2	37	30.8	66	55.0	2.41±0.73
Visiting the doctors or the hospitals	13	10.8	44	36.7	63	52.5	2..42±0.68

Table (2) revealed that more than half of the sample (65%) had stress related to compliance with medication, and (55%) were still enabled to control the disease and they considered that visiting the doctor or the hospital is other stressors. Meanwhile, approximately half (48%) of the patients were developed side effects from the drugs and (55%) of them complained from the cost of medication.

Table 3. Family stressors domain

Family stressors	Never	%	Sometimes	%	Always	%	$\bar{X} \pm SD$
People don't understand the disease	19	15.8	87	72.8	14	11.7	1.96±0.52
Dependence on others	22	18.3	83	69.2	15	12.5	1.94±0.55
Feeling of isolation	25	20.8	81	67.5	14	11.7	1.91±0.57
Change in his family role	27	22.5	79	65.8	14	11.7	1.89±0.58
Lack of family support	26	21.7	78	65.0	16	13.3	1.92±0.59
Believe that nothing can do to help him	20	16.7	82	68.3	18	15.0	1.98±0.56
Poor communication between the patient and the nurse	16	13.3	91	75.8	13	10.8	1.98±0.49

Table (3) Described family stressors that facing the patients. It illustrated that (72.8%) of the patients did not understand the disease and all patients had poor communication between them and the nursing staff. Nearly, (69%) (Sometimes) were depending on others, and (67.5%) of the sample patients suffered a feeling of isolation, moreover, (65.8%) demonstrated a change in their family role.

Table 4. Disease stressors domain

Disease stressors	Never	%	Sometime	%	Always	%	$\bar{X} \pm SD$
Threat to death	7	5.8	75	62.5	38	31.7	2.26±0.56
Ability to travel	30	25.0	68	56.7	22	18.3	1.93±0.66
Ability to control the disease	23	19.2	76	63.3	21	17.5	1.98±0.61
Effect on sexual activity	21	17.5	76	63.3	23	19.2	2.02±0.61
Ability to do physical exercises	8	6.7	65	54.2	47	39.2	2.33±0.60
effect of smoking	4	3.3	59	49.2	57	47.5	2.44±0.56
Allergy to some foods	2	1.7	57	47.5	61	50.8	2.49±0.53
Ability to sleep	1	0.8	49	40.9	70	58.3	2.58±0.51
Restriction in daily activities	4	3.4	58	48.3	58	48.3	2.45±0.56
Limit social activities	7	5.8	46	38.3	67	55.9	2.50±0.61
Fears from the episodes and its sequences	16	13.3	69	57.5	35	29.2	2.16±0.64

Fear from having children	32	26.7	68	56.7	20	16.7	1.90±0.65
Effect of the disease on study	37	30.8	64	53.3	19	15.9	1.85±0.67
Knowledge about the disease	6	5.0	71	59.2	43	35.8	2.31±0.56
Effect of disease on work	10	8.3	56	46.7	57	45.0	2.37±0.63

Table (4) indicated that (63%) of the sample had fear from death and more than half of them (58.3%) had problems in their sleeping, while (63%) reported that their disease effect on their sexual activity. However, more than half of them complained from food allergy, restriction in their daily activities, limited social activity and fear from episodes attack.

Table 5. Relation between demographic data and treatment stressors

Demographic variables	χ^2	p-value
Sex	7.818	0.020*
Age	21.077	0.007*
Sociability	23.650	0.001*
Academic level	17.697	0.060
Job	11.618	0.071
Health insurance	6.161	0.187
Smoking	7.000	0.030*
Duration of disease	10.927	0.027*
Disease affect other family members	25.748	0.000*
Family members smoking	11.426	0.003*

Table (5) indicated a highly significant relationship between most of demographic characteristics and treatment stressors ($p < 0.05$) except the academic level, job and health insurance.

Table 6. Relation between demographic data and family stressors

Demographic variables	χ^2	p-value
Sex	4.941	0.085
Age	10.094	0.259
Sociability	22.121	0.001*
Academic level	11.165	0.345
Job	10.718	0.097
Health insurance	5.338	0.254
Smoking	1.246	0.536
Duration of disease	16.715	0.003*
Disease affect other family members	4.685	0.096
Family members smoking	1.790	0.409

Table (6) showed the relationship between demographic data and family stressors. The table illustrated a highly significant relationship between family stress and sociability at p (0.001) and there was a significant correlation between family stress and disease duration at p (0.003).

Table 7. Relation between demographic data and disease stressors

Demographic variables	χ^2	p-value
Sex	9.742	0.002*
Age	18.135	0.001*
Sociability	9.997	0.019*
Academic level	3.676	0.597
Job	14.094	0.003*
Health insurance	1.500	0.472
Smoking	9.170	0.002*
Duration of disease	1.306	0.521
Disease affect other family members	5.339	0.021*
Family members smoking	3.716	0.054

Tables (7) declared the relationship between demographic data and disease stressors. It revealed that almost a significant relation between the demographic data, and the disease stressors, such as, sex, sociability, job, smoking at p (0.002), (0.019), (0.003), and (0.002) respectively. While there were highly significant relationships between patients ages and disease stressors.

Table 8. The three main domains of stressors facing patients with bronchial asthma percentages and standard deviations.

Stressors	never	%	sometimes	%	always	%	$\bar{X} \pm SD$
Treatment stressors	12	10.0	44	36.7	64	53.3	2.43±0.67
Family stressors	21	17.5	86	71.7	13	10.8	1.93 ±0.53
Disease stressors	0.00	0.0	91	75.8	29	24.2	2.24±0.43

Table (8) showed the percentage of the stressors facing patients with bronchial asthma according the main three domains of stressors. The largest proportion of patients nearly (75.8%) of them reported disease stressors (sometimes), While more than half of patients (53.3%) suffered from treatment stressors (always). on the other hand it seemed that more than half of the study sample (71.1%) (sometimes) were bothered about family stressors.

7. Discussion

Stress has been implicated in the precipitation and exacerbation of illness through a variety of pathways. It has been mentioned that stress affect major physiological systems—autonomic, neuroendocrine, and immune. Several researchers have noted that stress may be especially harmful for individuals with a chronic illness because preexisting physiological and psychological vulnerabilities may place them at a disadvantage that could increase their chances of suffering from the ill effects of stress [16].

The finding of this study illustrated that patients with asthma may face various stressors, such as physical, psychosocial, cost of treatment, and death.

These stressors may a progressively deteriorating patient condition, and all of which harm the immune system. A cluster of events that requires life adjustment is associated with the onset of

illness. One possible explanation for that reason asthma can cause physical discomfort, as well as psychological and social disruptions and impacts on quality of life. Moreover, Stress may actually increase as a result of both changes in ADLs and further compromise of the person's reserves [17, 18, 19, 20].

In this study it is interesting to find that men were affected by asthma more than women, however other previous study 21 found in their study the percentage of asthmatic women were more than in men In addition, the results of the current study showed that there were significant relations between patients age and disease stressors, most of study group participants were young adult, married, smokers and employed . The present study results were consistent with the findings of Panicker et al., [21] who found that stress was significantly higher in the younger age group (29-38 years), employed, educated, and there were significant relations between disease stressors and employment status. Peltzer et al. [22] reported that high proportions of asthmatics in clerical staff were distressed, possibly because of poor work performance, poor satisfaction, and frequent absence from work.

Jobs, which are associated with overload, excessive demands and many

Responsibilities cause job strain, and this has been shown to lead to a high risk of adverse health outcomes, in addition, having an income below the poverty level intensified the effects of job-related stress.

This is consistent with previous studies by Goodwin et al. [23] they proposed a linkage between asthma and depressive and anxiety symptoms. There are likely to be some common factors associated with both asthma and anxiety disorders. These stressors may be due to their poor work performance, poor physical fitness or constantly thinking of being a victim of a chronic disease. Lack of sound sleep at night, sedative effects of antihistamines make the quality of life poor and result in poor performance at work, which may lead to anxiety and depression.

Previous studies showed that education is critical in improving patient knowledge, skill and compliance, especially for patients with low levels of disease knowledge and/or poor compliance. Asthma knowledge is important, and when patients understand the disease and its treatment, their confidence and satisfaction increase [24, 25] Health education can change disease knowledge, attitude, and possibly even behavior and lifestyle. Nurses often have the advantage of interacting with patients. Therefore, nursing professionals can play an important role in asthma the message instruction. Some researchers have indicated that an effective educational intervention can improve asthma knowledge and quality of life for asthma patients [26].

Zakrisson & Hagglund, 2010 [27] assumed based on their earlier research that an asthma nurse is able to provide good asthma care by reinforcing knowledge, ensuring adherence to a management plan, checking inhalation technique, and adjusting medication according to guidelines.

This study also revealed that the participants in this study argued that there was an inadequate nursing communication and it should be provided. This result is in line with the review of the literatures, which suggested that, the need for continuing and basic education for healthcare practitioners. Such education may reduce practitioners' frustration with missed appointments and improve patient-provider relationships. Healthcare providers' must increase their understanding about the multitude of factors that can improve patient-provider relationships, which may lead to effective strategies to address this problem [28].

Improved patients - nurses communication is strongly correlated with greater satisfaction with the care received. Furthermore, direct clinician-to-patient feedback has been shown to improve adherence, and regular medical review can have a significant impact on patient outcomes in asthma, in addition past studies also have revealed that compliance with asthma medication regimens can be increased significantly with education provided through nurse home visitation [29, 30].

The present study results declared that highest percentage of the overall stressors facing the patients were the disease stressors compared with treatment stress and family stress. This may be

due to patients were anxious and, they were frightened by an asthma attack and frustrated because their asthma makes them feel irritable, different, and leaves them without friends, furthermore patients may complain from headache, fatigue rhinorrhea and sneezing they need to blow their nose and carry tissues which make them worried and frustrated. The current study results were consistent with the findings of Ford et al. 2003 [31] & Oraka et al., 2010 [32] who found that adults with asthma have significantly more physically and mentally unhealthy days, days with activity limitations, a higher prevalence of frequent mental distress, lower health-related quality of life and are more likely to report smoking and physical inactivity [33]. In addition, In this study, the finding indicated that restrictions in the daily activities and decreased ability to do exercise are one of the most distressing symptoms of this illness, and more importantly impairs both functional performances, moreover, it had bad effect on the quality of patient life [34], mentioned that individuals living with bronchial asthma may have a moderate to high prevalence of symptoms, such as fatigue which impose limitation on motivation, concentration and the ability to engage in everyday activities and sleep quality.

Regarding treatment stressors, patients in this study suffered stress related to medication side effect, cost of treatment, nature of medication and compliance with treatment, the present study result is consistent with other findings (Emilsson et al.) [36] who mentioned that many factors have been found to influence medication adherence, and those associated with non-adherent behavior can be organized into five interacting domains: socioeconomic factors; therapy-related factors; patient-related factors; condition-related factors; and health care system factors. The most adherent individuals are those who accept the necessity of medication and have low concerns about potential adverse consequences [35].

Concerning the family stressors, the current study finding emphasized that family stressors was caused by dependence on others, change in family role and lack of family support. Research literatures reinforces the findings in this study that uncertain outcomes of illnesses, shortened hospitalizations, and intensive medical treatment in ambulatory settings increase the number of stressors the family faces, and consequently affect on the family functionality. Moreover, most the patients in this study were married and live at home, the burden and responsibility of their care falls on the burden of the family. Some families experience minimal disruption and increased closeness, while others experience severe disruption and crisis [37, 38].

Despite the consistency, there were also differences in findings among the above-mentioned studies. Challenges continue to exist for these families as the current study showed that most of the family members were smokers and/or had prior asthma attacks. Interestingly, they endeavor to provide safe and effective care for their patients within the context of the home environment. The relationship between the family and healthcare professionals appears to be pivotal in the enablement of family as they seek to fulfill this role [39].

Regarding the sexual activities in the present study most of the middle-aged patients complained from decrease sexual activities. This finding is in line with previous others studies Skrypulec et al., 2007 [40], Kaptein et al., 2008 (41 they found that 25.8% of asthmatic patient's had worse sexual functioning and sexual dysfunction.

7. Conclusion

Asthma can cause physical discomfort, as well as psychological and social disruptions the current study revealed that there is a significant relationship between the stressors related to asthma and demographic data. The finding of this study indicated that stressors related to compliance of treatment affected more than half of the participants. Concerning family stress, more than half of the patients complained lack of family support as result of more than one family member had bronchial asthma. Finally, regarding the stressors related to the illness itself, more than half of the patients fear from episodes asthma attack.

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