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Assessment of Asthma-Related Stressors among Bronchial Asthma Patients in Jordan

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Abstract **Background:** Bronchial asthma is a long-life illness that requires sensitive management since diagnosis. The relationship between asthma and physiological functioning is well established. However, stressors related to asthma treatment, family and other people influence, and disease impact on living activities is still unjustifiable. **Aim**: The aim of this study was to assess stressors facing patients with bronchial asthma. **Methods:** a descriptive, cross-sectional design was used. Participants were recruited from out-clinic asthma patients from two major hospitals in Amman, Jordan. Participants completed a predetermined questionnaire through individual interviews. **Results:** A total of 120 joined the study. Generally, management-related issues were the most prominent distressing domain for those patients with asthma followed by family-related domain and disease-related domain. **Conclusion:** Asthma can produce physical, psychological, and social distress. The role of nurses is pivotal in eliminating these stressors. An effective health education is the key to attain sufficient knowledge which contributes to lower incidences of these stressors.

Keywords: *asthma, nurse, stressors*

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1. Introduction

Bronchial asthma is a chronic respiratory disorder that requires long-life treatment and care. It is characterized by chronic airway hyper responsiveness to such stimuli that produce recurrent episodes of wheezing, coughing and dyspnea [11,28]. The Global Initiative for Asthma [15] reported that asthma is the main cause of death for one of every 250 deaths worldwide. In the United States, asthma affects more than 22 million people in which more than 497,000 cases are hospitalized annually, and the cost of asthma-related health services exceeds $27.6 billion annually [2]. Prevalence of asthma among Arabic countries is varied and ranged from 9% to 20% [6,17]. A little is known about the incidence of asthma in Jordan. However, a study conducted by Abuekteish et al [1] showed that the prevalence of asthma and wheezing among school children aged 6–12 years in the north of Jordan was 4.1% and 8.3%, respectively.

Psychological stressors are one of the prominent consequences of overwhelming asthma symptoms such as dyspnea and nocturnal. Poor asthma control is the main reason for developing psychological and emotional drawback effects. Feldman et al., [13] found that 65% of asthmatic patient is more likely to develop mood changes and anxiety. Therefore, psychiatric consultation should be taken into account when managing asthma [5]. In a study by Karadag et al, [22], the prevalence of psychological distress (i.e. depression, anxiety, panic attacks) were reported in 58% of Chronic Obstructive Pulmonary Disease (COPD) patients while the rest (42%) was observed in other medically ill conditions. On the other hand, 28% of people with asthma rated their health as 'poor' compared to only 14% of people without asthma.

Most of the impact of asthma is on physical functioning and on the ability to perform social roles, such as work or study. While stress impacts on psychological and emotional status of asthmatic patients, major physiological changes such as neuro-endocrine and immune systems abnormalities may also ensues [18]. Thus, the complication of the disease may become immanent and expedited.

Nursing role is central in managing patients with asthma along with multidisciplinary team work (i.e. physicians and pharmacists). Studies confirmed that nurses are responsible for reinforcing knowledge, ensuring adherence to the therapeutic plan, and advising patients for using inhalers [18,25]. Nurses may influence patients' perception of the illness when allow patients' to express freely about their feelings and concerns regarding the illness which would strengthen patients' coping, self-efficacy, and self-regulation mechanisms [7,27].

The studies confirmed that asthma treatment is heavily relying on health education as a source of disease prevention (primary-secondary-tertiary prevention). Patients with asthma may reveal better physiological and psychosocial performance when enrolling health education to promote their life and improve their performed daily activities. This study provides insight to the existing literature about

factors associated with psychological distress among asthma patients.

2. Aim of the Study

The aim of this study was to assess stressors facing patients with bronchial asthma.

3. Methods

This descriptive study was carried out on out-clinic patients with bronchial asthma from Al Basheer Hospital and Prince Hamza hospitals in Amman-Jordan. Participants were recruited conveniently from both sits according to their availability. The sample size was calculated at medium effect size and power of 0.80 and found 120.

Inclusion criteria included patients diagnosed was asthma for more than one year, aged between 18-60 years old, and free from other chronic illnesses.

3.1. Instruments

The study questionnaire was developed by the researcher based on the literature surrounding stressors and its relation to asthma. Mainly, the questionnaire consisted of three parts as follows:

1. Socio-demographic questions.
2. Stressors related to asthma management (5 questions)
3. Stressors related to families and other people influence (7 questions).
4. Stressors related to disease impact on living activities (12 questions)

All questions related to asthma stressors were rated using three levels Likert scale (Always, Sometime, and Never). The questionnaire was reviewed by five experts in this field who rated their responses using specific format which showed higher inter-rater agreement (92%).

Data was collected directly from patients using individual interviews. Ethical approval was obtained from the IRP committees based on the Ministry of Health in Jordan. An informed consent was obtained from all participants prior to data collection. Consents included information about participants' rights including confidentiality and anonymous participation. Participants were also given information about the significance of the study and its importance for asthma management. Interviews were conducted in a room inside the hospital to ensure privacy and convenience of participants.

3.2. Statistical Analysis

Data were coded and entered using the Statistical Package for the Social Sciences for Windows (SPSS version 18.0). Before data analysis, data were cleaned by double-checking for missing and outliers. Descriptive statistics including frequency, percent, means and standard deviation was firstly used to examine the distribution across different variables.

4. Results

A total of 120 participants joined the study. Table 1 showed that the majority of participants were male (61.7%) and aged between 29-48 years old (68.3%). The majority was also married (78.3%) and educated at the secondary school level (50%). Regarding the employment, 60% were employed. Smoking was prominent among this sample (62.5%). Regarding medical insurance, the majority had insurance while 25.4% had not. About half of the participants (50.8%) suffered from asthma between 4-6 years. (Table 1)

Table 1. Socio-demographic characteristics of patients

Demographic variables	Categories	Number	Percent (%)
Sex	Male	74	61.7
	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
Marital status	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
Employment	Employed	72	60.0
	Retired	16	13.3
	Unemployed	4	3.3
	Household	28	23.4
Medical insurance	Governmental	47	39.2
	Private	42	25.0
	Without insurance	31	25.4
Smoking	Yes	75	62.5
	No	25	37.5
Duration since diagnosis	1-3	43	35.8
	4-6	61	50.8
	7 and more	16	13.4

4.1. Stressors Related to Asthma Management

This section represents stressors related to asthma management. As shown in Table 2, most of participants' responses were presented at "Always" rather than other responses. More than half of the sample (65%) had always stress related to compliance with medication, 54.2% were always unable to control the disease, 55% considered the cost of treatments is always a stressor, and 52.5% clamed that visiting the doctor or the hospital is always a stressor. In addition, approximately half (47.5%) of the participants considered the side effects of the drug are always stressful. (Table 2).

Table 2. Stressors related to asthma management

Treatment stressors	Never		Sometimes		Always		$\overline{X}$ ± SD
	n	%	n	%	n	%	
Compliance to medications	14	11.7	28	23.3	78	65.0	2.53±0.70
Inability 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 doctors or hospitals	13	10.8	44	36.7	63	52.5	2..42±0.68
Total	**12**	**10.0**	**44**	**36.7**	**64**	**53.3**	**2.43±0.67**

4.2. Stressors Related to Family and Other People

Regarding stressors related to family and other people, there is a number of factor illustrated in Table 3. Generally, participant's responses were populated around "Sometime" in all these questions. For instance, 72.8% of participants feel sometime stressful due to people's misunderstanding of the disease, and 75.8% appeared sometime stressful due to poor communication with nurses. About 68% of them believed that people sometime can do nothing for them. Feeling of isolation was also prominent between participants in which 67.5% feel sometime stressful due to this reason. About 65% claimed that lack of family support and changes in the family role were sometime stressful. (Table 3)

Table 3. Stressors related to family and other people

Family stressors	Never		Sometimes		Always		$\overline{X}$ ± SD
	n	%	n	%	n	%	
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 people can do nothing for them.	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
Total	**21**	**17.5**	**86**	**71.7**	**13**	**10.8**	**1.93 ±0.53**

4.3. Stressors Related to Disease

In this section, stressors related to disease impact on living activities are presented. According to the findings presented in Table 4, 62.5% of participants showed sometime fear from death. In addition, 56.7% revealed sometime stress from travel restriction, and 63.3% claimed sometime fear from impaired sexual activity and 54.2% from impaired physical exercises. Likewise, frer from asthma episodes and having children were also sometime stressful (57.5 and 65.7, respectively). Food restriction due to allergy, altered sleep pattern, and limited social activities were all scored higher at "Always" level (50.8%, 58.3%, and 55.9%, respectively). Finally, the effect of asthma on meeting study and work requirements was almost moderate (sometime) (53.3% and 46.7%, respectively). However, a large number of participants (45%) revealed that asthma make them always feeling stressful to meet the job requirements. (Table 4)

Table 4. Stressors related to disease impact of living activities

Disease stressors	Never		Sometime		Always		$\overline{X}$ ± SD
	n	%	n	%	n	%	
Fear from death	7	5.8	75	62.5	38	31.7	2.26±0.56
Travel restriction	30	25.0	68	56.7	22	18.3	1.93±0.66
Impaired sexual activity	21	17.5	76	63.3	23	19.2	2.02±0.61
Impaired physical exercises	8	6.7	65	54.2	47	39.2	2.33±0.60
Fear from smoking	4	3.3	59	49.2	57	47.5	2.44±0.56
Food restriction due to allergy	2	1.7	57	47.5	61	50.8	2.49±0.53
Altered sleep pattern	1	0.8	49	40.9	70	58.3	2.58±0.51
Limited social activities	7	5.8	46	38.3	67	55.9	2.50±0.61
Fears from asthma episodes	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
Fear from inability to meet study requirement	37	30.8	64	53.3	19	15.9	1.85±0.67
Fear from inability to meet work requirement	10	8.3	56	46.7	57	45.0	2.37±0.63
Total	**0.00**	**0.0**	**91**	**75.8**	**29**	**24.2**	**2.24±0.43**

5. Discussion

This study found that patients with asthma may face various stressors related to disease management, family and other people influence, and disease itself. In fact, patients scored higher in having stress due to asthma management and compliance to treatment while they recorded moderate stress for family related issues and disease related issues. It is acknowledged that asthma is cluster of events that requires life adjustment since the onset of illness [26]. Asthma may produce physical discomfort, psychological distress, social alienation, altered quality of life [32]. While stress is a prolonged and overwhelming event, it may also force asthmatic patients to deliberately change their living activities in which more physical and social activities become restricted [3,37].

Regarding treatment stressors, patients in this study suffered from stressors related to medication side effect, cost of treatment, nature of medication and compliance with treatment. A study by Emilsson et al., [12] retrieved the same results and found many factors influencing adherence to therapeutic regimens. Some studies categorized these factors into five interacting domains: socioeconomic factors; therapy-related factors; patient-related factors; condition-related factors; and health care system factors [12,19]. Therefore, the most adherent individuals are those who accept the necessity of medication and have low concerns about potential adverse consequences.

In regard to family stressors, the current study suggested that family stressors were mainly refereed to the dependence on others, change in the family role, and lack of family support. Former studies found that recurrent hospitalizations and the need for intensive medical treatment in ambulatory settings may increase family stressors and may, consequently, affect the functionality of the family [23,24]. Because the majority of participants in this study was married and live at their home, the results gained regarding the impact of family would be manifest. However, the level of family disruption may vary across different cultures and is strongly associated with the relationships between family members. Evidently, families whose members are closed to each other endeavor to provide safer and effective care for their patients as possible [10].

The majority of study participants were between 29-48, suggesting a relationship between asthma stressors and age. Panicker et al., [30] found that the stress was significantly higher this age group compared to younger patients, due to the financial burden and responsibilities towards their families. Similarly, the majority of participants in this study were employed. A study by Peltzer *et al*. [31] reported that high proportion of asthmatic patients who work in clerical staff were distressed, possibly because of poor work performance, poor satisfaction, and frequent absence from work. Goodwin *et al*. [16] proposed a linkage between asthma and depressive and anxiety symptoms. They found that one of the common factors associated with both asthma and anxiety disorders is poor work performance and thinking of being a victim of a chronic disease.

It is assumed that adequate knowledge of asthma and its treatment can restrict the development of psychological and occupational negative consequences. This may refer to the rule that when patients understand the disease and its treatment, their reflect confidence, satisfaction, and ability to adapt [8,40]. Health education which is the key for changing knowledge, attitude, and quality of life, is one of the major roles of nurses [9]. Nurses may contribute to may tasks such as reinforcing knowledge, ensuring adherence to a management plan, checking inhalation technique, and adjusting medication according to guidelines [41].

In this study, participants revealed inadequate communication with nurses. It is known that proper communication with patients improves patients' knowledge, decrease frustration, and increase confidence [33,35]. However, it is also regarded that improved physician communication is strongly correlated with greater satisfaction with the care received by asthma patients. Direct clinician-to-patient feedback showed improvement in adherence, and in the total patient outcomes [23].

In this study, restrictions in the daily living activities and decreased ability to do exercise were common distressing symptoms which impair patients' performances and quality of life. Wong et al, [39], mentioned that individuals living with bronchial asthma may have moderate-high prevalence of symptoms, such as fatigue which impose limitation on motivation, concentration, and the ability to engage in everyday activities and sleep quality. Likewise, Theander et al., [37] stated that patients with fatigue receive a lifetime diagnosis of depression or anxiety more frequently than those without fatigue. Regarding sexual activity which was also a main concern of those middle-aged participants in this study, the literature confirmed that around 25% of asthmatic patient's suffer from sexual dysfunction [21,34].

It was noted that the majority of participants in this study exhibited the feel of fear from different aspect such as fear from death, fear from inability to accommodate with study or work requirement. This is also consistent with the findings of previous studies [14,29] who found that adult patients 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. Thus, unhealthy breathing functioning would impose a failure of individual capacity to deal with various living challenges [4].

6. Conclusion

Asthma in adults has specific features determined by patients' psychosocial, occupational, and physical characteristics. A greater concern was highlighted on the impact of asthma on individual health. However, management-related issues were the most prominent distressing domain followed by family-related domain and disease-related domain. In fact, the severity of illness can become attenuated when adequate level of knowledge is acquired. Therefore, nursing role is axial in this issue, considering that effective health education entails sufficient knowledge, attitudes, and quality of life.

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