

## Determination of Physical Problems for Adult Patients with Asthma

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### ABSTRACT

**Background:** Asthma is considered as a major public health problem in many countries. It is one of the most common chronic disease affecting both adults and children. According to world health organization there are at least 300 million people suffer from asthma worldwide and more than 180,000 people die from it each year. Therefore, the study aims to determine physical problems for adult patients with asthma and to find out the relationship between physical problems with demographic characteristics.

**Materials and methods:** - A descriptive study was carried out in Baghdad teaching hospital and Al-Yarmook teaching hospital for the period of 1\12\2011 to 2\5\2012. A purposive (non probability) sample of (50) patients. Questionnaire was constructed for the purpose of the study. Data were collected through the application of the questionnaire and interview technique. Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (Pearson correlation and mean of score) by using of SPSS 16.0.

**Results:** The study results indicated that the range of age was between (40-49) year and most of them were male, married and employed in government officer, read and write they live in rural, barely sufficient of monthly income. There is high physical problems such as cough, wheezing, dyspnea, tachycardia and weight loss.

**Conclusions:-** There is no relationship between physical problems with marital status educational level. There is moderate relationship between the remaining variables this mean that physical problems are present with all variables.

**Recommendation:-**The study recommended that educational programs should be constructed or designed for patients toward health care awareness for patients with asthma. Patients with asthma should undergo tests to identify the substances that precipitate the physical problems. Patients are instructed to avoid the causative agents wherever possible.

**Keywords:-** physical problems, asthma

### INTRODUCTION

Asthma was first recognized in ancient Egypt and treatment was inhalation of frankincense. Officially recognized as a specific respiratory problem separate from others was first recognized and named by Hippocrates Circa 450 BC (Zuskin *et al.*, 2008). Asthma is a chronic lung condition with ongoing airway inflammation that results in recurring acute episodes (attacks) of breathing problems such as coughing, wheezing, chest tightness, and shortness of breath. These symptoms occur because the inflammation makes the airways overreact to a variety of stimuli including physical activity, upper respiratory infections, allergens, and irritants. Exposure to these stimuli--often called triggers--creates more swelling and blocking of the airways. Asthma episodes can be mild, moderate, or even life-threatening. Vigorous exercise will cause symptoms for most students with asthma if their asthma is not well-controlled. Some students

experience symptoms only when they exercise. However, today's treatments can successfully control asthma so that students can participate fully in physical activities most of the time (Linton, 2007). Asthma is a disease that affects the breathing passages of the lungs (bronchioles). Asthma is caused by chronic (ongoing, long-term) inflammation of these passages. This makes the breathing passages, or airways, of the person with asthma highly sensitive to various "trigger when the inflammation is "triggered" by any number of external and internal factors, the passages swell and fill with mucus. Muscles within the breathing passages contract (bronchospasm), causing even further narrowing of the airways. This narrowing makes it difficult for air to be breathed out (exhaled) from the lungs. This resistance to exhaling leads to the typical symptoms of an asthma attack. Because asthma causes resistance, or obstruction, to exhaled air, it is called an obstructive lung disease.

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The medical term for such lung conditions is chronic obstructive pulmonary disease or COPD. COPD is actually a group of diseases that includes not only asthma but also chronic bronchitis and emphysema (Jenkins *et al.*, 2004; Smeltzer *et al.*, 2008). Asthma is a disease of the lungs in which affected persons have trouble breathing, may feel tightness in the chest and may wheeze and/or cough. According to the Centers for Disease Control and Prevention (CDC), asthma currently affects 7.3 percent of adults and 9.4 percent of children. Furthermore, problems with asthma resulted in 10.6 million visits to the doctor in 2006. Thus, asthma is a severe public health problem that affects a significant portion of the population. Three major physical characteristics are associated with asthma, and people with the disease can manifest one, two or all three of them (Nemery *et al.*, 2002; Basavanthappa, 2009). In most people with asthma, the difficulty breathing happens periodically. When it does happen, it is known as an asthma flare-up also known as an asthma attack, flare, episode, or exacerbation (Pasternack *et al.*, 2005; Lewis *et al.*, 2004). Asthma as a result of (or worsened by) workplace exposures is a commonly reported occupational respiratory disease. Still most cases of occupational asthma are not reported or are not recognized as such. Estimates by the American Thoracic Society (2004) suggest that 15–23% of new-onset asthma cases in adults are work related (Boulet, 2009). In one study monitoring workplace asthma by occupation, the highest percentage of cases occurred among operators, fabricators, and laborers (32.9%), followed by managerial and professional specialists (20.2%), and in technical, sales, and administrative support jobs (19.2%). Most cases were associated with the manufacturing (41.4%) and services (34.2%) industries (Harrington and Lee-Chiong, 2007; Lewis *et al.*, 2007). Asthma is caused by environmental and genetic factors (Burrows *et al.*, 1989). These factors influence how severe asthma is and how well it responds to medication (Simpson *et al.*, 2001). Maternal tobacco smoking during pregnancy and after delivery is associated with a greater risk of asthma-like symptoms, wheezing, and respiratory infections during childhood (Beuther, 2010). Low air quality, from traffic pollution or high ozone levels, has been repeatedly associated with increased asthma morbidity and has a suggested association with asthma development that needs further research (Celedon *et al.*, 2002; Holguin and Fitzpatrick, 2010; WHO, 2009).

Asthma is considered as a major public health problem in many countries. It is one of the

most common chronic disease affecting both adults and children. According to world health organization there are at least 300 million people suffer from asthma worldwide and more than 180,000 people die from it each year. Despite the availability increasing treatment, asthma-related morbidity and mortality continues to rise. The prevalence of asthma is increasing in developed as well developing countries through the world. The current prevalence of asthma is estimated to be 5 to more than 10 % (Maddox and Schwartz, 2002).

Asthma affects people of all ages, but it most often starts during childhood. In the United States, more than 22 million people are known to have asthma. Nearly 6 million of these people are children. The prevalence of asthma has increased significantly since the 1970s. As of 2010, 300 million people were affected worldwide (Smeltzer *et al.*, 2010; Self *et al.*, 2009). In 2009 asthma caused 250,000 deaths globally (Moore *et al.*, 2010). Despite this, with proper control of asthma with step down therapy, prognosis is generally good (Delacourt, 2004).

## MATERIAL AND METHODS

A descriptive analytic study was carried out throughout the present study to determine the physical problems who attended the inpatient in teaching hospital in Baghdad city. The study was carried out during the period extended from the 1<sup>st</sup> December 2011 to 2<sup>nd</sup> May 2012. In order to obtain valid and comprehensive data, the study was conducted inpatient. The following was included Baghdad teaching hospital and Al-Yarmok teaching hospital. In order to obtain accurate data and representative sample, a non probability (purposive) sample was selected. The sample consisted of (50) patients. These patients were attending inpatients in teaching hospital in Baghdad city. The sample was selected according to the following criteria: adult patients 20 years old and above, patients with asthma, patients free from mental disorders, patients agreed to participate in the study, and free from systemic disease. A questionnaire- interview format was designed and developed by the researchers for the purpose of the study; such development was employed through the available literatures, clinical background and interview with patients who has asthma. All the items were measured on scale of (3) indicates that the problems were persistent as (always) and (2) Indicates presence of the problems as (sometimes) and (1) indicates the absence of the problems as (never). Rating scale was used to rate the frequency and extension of the problems. The questionnaire consisted of part one which deals with demographic characteristics. It consisted of

(7) items included age, gender, marital status, level of education, occupation, monthly income, and residential area. While the second part deals with physical problems aspects. They were designed for the purpose of the patient's physical problems and they consisted of (21) items. The content validity of the instrument was established through a panel of (10) experts. The years of experience with mean of (19.5) years, and (SD=7.43). They were asked to determine the content validity and investigate the clarify adequacy of the study questionnaire. The experts' responses were evaluated based on their agreements or disagreements on each item and its measurement. The result had indicated that all the experts agreed upon the items relevancy to the whole instrument except some of the items who

suggested rewarding of statements. Opinions and suggestions of experts were taken in consideration and changes were done at the final draft of the questionnaire. The data were collected by using the questionnaire structured format through interview technique. Each patient was interviewed personally by the researchers. Throughout each interview explanation of the study was held up with patient in order to accept participation. Each interview took approximately from (15-25) minutes. Data were collected between 8.30 am to 1.30 pm. The determination was conducted during the period of the 2<sup>nd</sup> January 2012 to 15<sup>th</sup> February 2012. The data were analyzed through the use of Statistical Package of Social Sciences (SPSS) version 16.0.

## RESULTS

**Table (1): Distribution of adult patients (study sample) by their demographic characteristics.**

Age ( years )	Frequency	Percent	Cumulative Percent
20-29	5	10.0	10.0
30-39	18	36.0	46.0
40-49	23	46.0	92.0
≤ 50	4	8.0	100.0
Total	50	100.0	
Gender	Frequency	Percent	Cumulative Percent
Male	36	72.0	72.0
Female	14	28.0	100.0
Total	50	100.0	
Marital status	Frequency	Percent	Cumulative Percent
Married	36	72.0	72.0
Single	14	28.0	100.0
Total	50	100.0	
Level of education	Frequency	Percent	Cumulative Percent
No read and write	5	10.0	10.0
Read and write	23	46.0	56.0
Intermediate school	4	8.0	64.0
Secondary school	8	16.0	80.0
Institute	5	10.0	90.0
College and above	5	10.0	100.0
Total	50	100.0	
Occupation	Frequency	Percent	Cumulative Percent
Government officer	19	38.0	38.0
Free job	17	34.0	72.0
Retired	4	8.0	80.0
Housewife	6	12.0	92.0
Unemployed	4	8.0	100.0
Total	50	100.0	
Monthly income	Frequency	Percent	Cumulative Percent
Sufficient	19	38.0	38.0

Barely sufficient	21	42.0	80.0
Insufficient	10	20.0	100.0
Total	50	100.0	
<b>Residence</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
Rural	40	80.0	80.0
Urban	10	20.0	100.0
Total	50	100.0	

**Table (2): Mean of score (M.S) for the items of the physical problems**

No	Items	Always	Some times	Never	M.S	Severity
1	Cough (productive, nonproductive)	40	5	5	2.70	H
2	Wheezing	36	9	5	2.62	H
3	Tight feeling in the chest	37	8	5	2.64	H
4	Shortness of breathing	37	8	5	2.64	H
5	Dyspnea (orthopnea, exertional dyspnea, paroxymal nocturnal dyspnea)	32	13	5	2.76	H
6	Weakness	42	4	4	2.76	H
7	Fatigue	42	4	4	2.76	H
8	Trouble sitting still	5	40	5	2.00	M
9	Cranking worried or scared	5	40	5	2.00	M
10	Pale	35	11	4	2.62	H
11	Perspiration	25	16	9	2.32	M
12	Tachypnea	10	24	16	1.88	M
13	Shallow breathing	16	29	5	2.22	M
14	Deep breathing	24	21	5	2.38	M
15	Tachycardia	39	5	6	2.66	H
16	Cyanosis	14	5	31	1.66	M
17	Clubbing of the nail	11	5	34	1.54	H
18	Loss of the weight	41	4	5	2.72	H
19	Anorexia	40	5	5	2.70	H
20	Muscle waste	19	4	27	1.84	M
21	Anemia	36	5	9	2.54	H
	Total				2.37	M

**Table (3): Correlation coefficient between (age, gender, marital status, educational level, occupation, monthly income, and residence) with physical problems**

Correlation	Age	Gender	Marital	Education	Occupation	Monthly	Residence	physical
Age	<b>1</b>	-	-	-	-	-	-	-
Gender	.155	<b>1</b>	-	-	-	-	-	-
Marital status	-.415**	-.389**	<b>1</b>	-	-	-	-	-
Educational level	-.017	-.292*	.614**	<b>1</b>	-	-	-	-
Occupation	.138	.324*	-.099	.156	<b>1</b>	-	-	-
Monthly income	-.634**	-.209	.754**	.639**	-.282*	<b>1</b>	-	-
Residence	-.653**	-.312*	.245	.164	-.277	.459**	<b>1</b>	-
Physical problems	.162	-.211	.068	-.006	.127	-.196	-.152	<b>1</b>

## DISCUSSION

The results of study samples indicated that the majority (46%) of the age groups were (40-49) years old. Most of the study samples (72%) were male. Most of them (72%) were married. The majority of the study samples (46%) was read and writes. Most of the study samples (38%) were government officer and most of them (42%) were barely sufficient. The majority of study samples (80%) were from rural area.

Another study reported that the prevalence of asthma in 18-44 years of age. Asthma affects an estimated 20 million Americans among adults women have a 30% greater prevalence of asthma than men that disagree with the results of the study may be because the different in causes of asthma such as smoking as example. The ethnic health disparities are likely due to the low income levels of these populations, the inability to access medical care, and inability to afford the primary treatment for asthma. An increase in allergens in the environment, especially in the inner city (Smeltzer *et al.*, 2010; Anderson, 2007).

The findings of the study samples shows that the mean of score are high level on items {1 [Cough (productive, nonproductive)], 2, Wheezing 3 Tight feeling in the chest, 4 Shortness of breathing, 5 Dyspnea (orthopnea, exertional dyspnea, paroxymal nocturnal dyspnea), 6 Weakness, 7 Fatigue, 10 Pale, 15 Tachycardia, 17 Clubbing of the nail, 18 Loss of the weight, 19 Anorexia and 21 Anemia). The mean of score are moderate on the remaining items.

Most of the study indicated that the characteristic clinical of asthma are wheezing, cough, dyspnea, and chest tightness after exposure to a precipitating factor or trigger (Smeltzer *et al.*, 2010 ; WHO, 2009).

The findings of the study samples shows that there is strong positive relationship between marital status with [educational level ( $r=.614^{**}$ ), monthly income ( $r=.754^{**}$ )] and strong positive relationship between level of education with monthly income ( $r=.639^{**}$ ). The table also shows there is strong negative relationship between age with [monthly income ( $r=-.634^{**}$ ), residence ( $r=-.653^{**}$ )], There is no relationship between physical problems with [marital status ( $r=.068$ ), educational level ( $r=-.006$ )]. There is moderate relationship between the remaining variables this mean that physical problems is present with all variables.

Another study indicated that asthma is a severe public health problem that affects a significant portion of the population. Three major physical characteristics are associated with asthma, and people with the disease can manifest one, two

or all three of them (wheezing, coughing, chest tightness, and shortness of breath) (Jenkins *et al.*, 2004). Most of other study reported that asthma affects people of all ages (Smeltzer *et al.*, 2008; Basavanthappa, 2009; Lewis *et al.*, 2004; Burrows *et al.*, 1989).

## CONCLUSIONS

Based on the results of the study, the researcher concluded that the majority of the age of the patients were (40-46) year and most of the patients were male and living in rural areas. In addition, it concluded that most of the patients with asthma were married and most of the patients were read and write graduate only. The majority of the patients were government officers with barely sufficient monthly income. Furthermore, most of the patients with asthma have high physical problems such as (Cough (productive, nonproductive, Wheezing, Tight feeling in the chest, Shortness of breathing, Dyspnea (orthopnea, exertional dyspnea, paroxymal nocturnal dyspnea), Weakness, Fatigue, Pale, Tachycardia, Clubbing of the nail, Loss of the weight, Anorexia and Anemia), and moderate on the remaining items. Finally, the findings of the study samples shows that there is strong positive relationship between marital status with [educational level and monthly income and strong positive relationship between level of education with monthly income. The table also shows there is strong negative relationship between age with [monthly income, and residence.

## RECOMMENDATION

Based on the conclusions, the study recommended that efforts should be made to organize specialized teams of health care professionals trained to administer to patients an integrated course combining therapy with the necessary information to help them cope better. In addition, Patients with asthma should undergo tests to identify the substances that precipitate the physical problems. Furthermore, Patients are instructed to avoid the causative agents wherever possible. In addition, a study can be conducted to investigate the physical problems of the patients and employee who have asthma, to develop information and counseling. Knowledge is the key to quality asthma care, Self-care special program upon patients with asthma. The study also concluded that health education should be given to patient and his family about detecting signs and symptoms for asthma. Carrying out other studies to evaluate the patients with asthma on their quality of life. Providing centers for asthma under treatment for giving various services to help



patients with good life in home and community. Finally, the study recommended to carrying out nursing care programmed on patients with asthma during treatment and establish strategies for identifying and treating patients within a context of comprehensive follow-up care, including prior emotional adjustment the presence of environmental support and the offer of planned counseling.

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