

Impact of Uncontrolled Asthmatic Disease upon Functional Performance of Patients at Respiratory and Allergy Care Centers in Baghdad City

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Abstract- A descriptive design of study was carried out to measure the impact of uncontrolled asthmatic disease upon functional performance of patients. The present study started from March 28th 2016 to 20th September 2016.

Methodology: A non- probability (purposive) sample of 100 patients who were suffering from uncontrolled asthma diseases and treated in specialist centers according to the criteria (the patient determined with uncontrolled asthma disease, get scored less than 20 on ACT and who visit the specialist centers for asthma to receive medications and follow up for investigation). The data were collected through the utilization of the developed questionnaire and by means of structured of interview method with the subjects who were individually interviewed in the center. The instrument consists of three, parts the first part is socio-demographic characteristics; the second part is to identify the medical history and the third part which consists of five domain (66 items) is to identify the information about the functional performance of asthma patient. The instrument has been validated by (16) experts, each of them has more than (10) years of experience. In specialty, the internal consist reliability is determined by Crohn Bach correlation Coefficient which was $(r) = 0.88$. The analyzed data have been conducted through application of descriptive statistics (frequencies, percentages, mean of scores Standard deviation) and inferential statistics (Chi-squared test).

Results: have shown that the majority of the (60%) patients are always affected by uncontrolled asthma on physical efficiency, the majority of the (50%) patients are sometime effected by uncontrolled asthma on emotional efficiency. (42%) of the patients are sometime affected by uncontrolled asthma on the efficiency of the social function, (69%) patients of the study results are sometime effected by uncontrolled asthma on social and family activities, 54%) patients are sometime effects by uncontrolled asthma on spiritual and religious beliefs and the majority of the study sample (81%) are sometime effects by uncontrolled asthma.

Conclusion: The study indicates that the uncontrolled asthma affects the patients' social and family; emotional behaviors and social; spiritual and religious beliefs. Which indicates the sample were complaining nervousness & anxiety. The study confirms that the asthma affects the patients' physical mobility as well as their work status.

Recommendations: the study is recommended to Initiate specialized asthmatic health care centres to provide a complete quality care for people who have asthma. Diagnosing, treatment & written health information program, equipped with all needed

therapeutic educational facilities such as a lecture room with data show, is recommended to increase the patients' knowledge. It is also recommended to provide a well-educated nursing staff for follow up visits, to Assess, monitor, & review asthma action plan in order to reduce impairment & risk.

Index Terms- Impact, Uncontrolled Asthmatic, Functional Performance.

I. INTRODUCTION

Asthma is a chronic inflammatory disease of the airway that causes reversible obstruction by narrowing and clogging the air passages due to hyper-responsiveness to stimuli (National Heart, Lung, and Blood Institute, 2007). Although the exact cause of asthma is unknown, genetic predisposition and environmental exposure factors seem to be the main cause. The World Health Organization (WHO) reports that 300 million people suffer from asthma, that it is the most common chronic illness among children, and that it occurs in all countries, but over 80% of asthma deaths occur in lower income countries ⁽¹⁾. Asthma is a chronic respiratory disease that can have varying effects on the quality of life of sufferers. The patho-physiology of asthma involves a circular progression of physical manifestations due to airflow obstruction as a result of inflammation of the airways. The types of inflammation differ between patients, even if the same mechanisms (such as allergy) are involved. Patients now respond differently to a variety of stimuli or, even, the same stimuli at different times. At the same time, the response to treatment can also vary greatly (Kemp 2002). Asthma is properly treated, people are well educated about all aspects of their illness and compliant are reduced affected. Those that are not may be severely impaired by chronic airflow limitation. It has been proven by research that the management and control of asthma greatly affects the quality of life of the person living with asthma, and that any level of symptom severity has an impact on quality of life even in people who only experience occasional symptoms ⁽²⁾. Asthma is a public health issue affecting adults and children. Asthma morbidity and mortality is always on the increase worldwide. The burden of asthma in recent years is enormous and the cost to manage asthma increases over time. Even with new and innovative research and practice, asthma cannot be cured; however, it can be managed. With this in mind, asthma management is an imperative part of saving lives for both children and adults.

Translating research into public health practice is challenging as it relates to asthma management because there are many variables. For example, environmental triggers are complex in regards to asthma management. What may trigger one asthmatic (i.e. environmental tobacco smoke) may not affect another^{(3) (4)}.

Objectives of the study

1. To identify the characteristic of uncontrolled asthmatic patients at respiratory and allergy care center in Baghdad city.
2. To find out the relationship of some demographical characteristics of the sample such as age, gender, level of education, occupation and genetic factor with deferent domains of functional performance.

II. METHODOLOGY

Design of the Study: A descriptive design of study was carried out to measure the impact of uncontrolled asthmatic disease upon functional performance of patients, the present study started from March 28th 2016 to 20th September 2016.

Setting of the Study: The study was conducted in two centers the first at the Allergy of Baghdad City, AL-Zahra'a Center consultative for Allergy and Asthma, and the second study was conducted at the, Clinic consultative for Chest and Respiratory Diseases.

Sample of the Study: A non- probability (purposive) sample of 100 patients who were suffering from uncontrolled asthma diseases and treated in specialist centers.

Data Collection: The data were collected through the utilization of the developed questionnaire and by means of structured interview method with the subjects who were individually interviewed in the specialist centers for asthma by using the Arabic version of the questionnaire the time for interview of each sample was 15 to 20 minutes , The data collection was performed from June 19th 2016 to July25th 2016.

Study Instrument: Through review of the related literature and studies, the constructed questionnaire is that is used as a mean of data collection. It consists of (3) major parts;

Part I: Is composed of socio-demographic characteristics.

Part II: Is composed of medical history.

Part III: Is composed of the functional performance of asthma patients .

Validity and Reliability: The content validity of the instrument was established through a panel of (16) experts, the reliability of the items were based on the internal consistency of the checklist was assessed by calculating Cronbach s' Alpha which as= 0.88.

Statistical analysis: The statistical data analysis approach by using (SPSS-ver.20) is used in order to analyze and evaluate the data of the study. A descriptive statistical data analysis approach used to describe the study variables : Frequencies and Percentages. Inferential statistical data analysis approach: used by application of the Chi-square test.

III. RESULTS

Table (1): Distribution of the Demographical Characteristics of the sample

Demographic Characteristics	Rating	Patients	
		Frequency	Percentage
Age (years)	20-30	16	16
	31-40	24	24
	41-50	19	19
	51-60	35	35
	61-and more	6	6
	Total	100	100
Gender	Male	47	47
	Female	53	53
	Total	100	100

Level of education	Read and write	30	30	
	Graduate of Secondary	19	19	
	Graduate of High school	4	4	
	Graduate of institute	25	25	
	Graduate of college and above	22	22	
	Total	100	100	
Marital status	Single	15	15	
	Married	82	82	
	Widowed	3	3	
	Total	100	100	
Profession	Governmental employee	43	43	
	Retired	5	5	
	No work	1	1	
	Freelance	26	26	
	Housewife	25	25	
	Total	100	100	
Profession that trigger asthma	I work in factory of wool	Yes	2	2
		No	98	98
	I work in laboratory of chemical materials	Yes	6	6
		No	94	94
	I work in factory of blocks	Yes	5	5
		No	95	95
	I work in factory of cements	Yes	3	3
		No	97	97
Place of resident	Urban	53	53	
	Semi-urban	45	45	
	Rural	2	2	
	Total	100	100	
Monthly Income	Enough	11	11	
	Almost enough	83	83	
	Not Enough	6	6	
	Total	100	100	

This table represents the distribution of the patients demographic data in terms of frequencies and percentage. Results reveals that the highest percentages (35%) of patients are within fourth age groups (51- 60) years old. Elementary graduated patients record approximately (27%) out of the study sample. The majority of the study sample were females (63%) out of (100) patients participated in this study and records (82%) of them are married. Regarding patients professions, results indicate (43%) out of the total number are governmental employed. The highest percentage of patients that trigger asthma are those with no profession at all. Most of the patients reside in urban areas which count to (53%) out of the total number of the study sample. Finally in this table, it is obvious that the majority of the study sample making almost enough monthly income are counted up to (83%).

Table (2): Distribution of the Study Sample regarding the Patients History

Demographic Characteristics	Rating	Patients	
		Frequency	Percentage
Date of disease diagnosis / year	1-10	22	22
	11-21	47	47
	22-32	28	28
	33-43	2	2
	44 and more	1	1
	Total	100	100
How many admissions to hospital due to asthmatic attack	Yes	48	48
	No	52	52
	Total	100	100
Other direct family with asthma	Father	40	40
	Mother	46	46
	other	14	14
	Total	100	100
Body Mass Index	18.5- 25	11	11
	25.5-30	39	39
	30.5-35	27	27
	35.5-40	17	17
	40.5 and more	6	6
	Total	100	100
Are you smoking	Yes	28	28
	No	72	72
	Total	100	100
Do you drink alcohol	Yes	0	0
	No	100	100
	Total	100	100
Do you have diabetic mellitus disease	Yes	14	14
	No	86	86
	Total	100	100
Do you have blood pressure disease	Yes	42	42
	No	58	58
	Total	100	100
Blood group	A	53	53
	B	8	8
	AB	20	20
	O	19	19
	Total	100	100
Do you visit the health care provider	Yes	15	15
	No	85	85
	Total	100	100
Using asthma medication	permanently	11	11
	according to need	89	89
	Total	100	100
Type of treatment you are using	sprayer	55	55

	burner	6	6
	pills	29	29
	injection	10	10
	Total	100	100

This table demonstrate that the age of (11-12) years is considered the age of disease diagnosis which count to (47%) of patients who are diagnosed at this age . Proportion of (52%) of the patients with asthma attack not admitted to hospital. Concerning family, mother patients who have asthma record the (46%) of the study sample. Regarding smoking status, (72%) of patients in general are not smokers. In the same table, the proportion of all patients participated in the present study do not drink alcohol which records (100%). In addition, most of the study samples do not have diabetic mellitus and blood pressure diseases which count up to (86% and 58%) respectively. Regarding patient's blood groups, results indicate (53%) of the study sample are (A) blood groups. In general, (85%) out of the total number of the study sample do not visit the health care provider, and (89%) of patients use asthmatic medication when needed Concerning treatment types, results indicate (55%) of patients use sprayer methods.

Table (3): Distribution of Patients' Effects by their Uncontrolled Asthma

Effect Uncontrolled Asthma	Scale	Frequency	Percentage	M.S.	S.D.	Effect
	Never	0	0			
	Sometime	81	81			
	Always	19	19			
	Total	100	100			

M.S.= Mean of score, Cut off point (0.66), Never (mean of score 1-1.66), Sometime (mean of score 1.67-2.33), Always (mean of score 2.34 and more), S.D= Stander Deviation.

This table shows that the majority of the patients (81%) are sometime affected by uncontrolled asthma.

Table (4): Statistical Association between the Patients' Demographic Characteristics and Uncontrolled Asthma

Demographic Characteristics	Rating	Overall			χ^2	D.f	p-value
		Never	Sometime	Always			
Age (years)	20-30	0	2	14	2.197	4	0.700 NS
	31-40	0	3	21			
	41-50	0	4	15			
	51-60	0	9	26			
	61-and more	0	1	5			
Gender	Male	0	41	6	2.239	1	0.135 NS
	Female	0	40	13			
Level of education	Read and write	0	22	8	4.048	4	0.542 NS
	Graduate of Secondary	0	14	5			
	Graduate of High school	0	4	0			
	Graduate of institute	0	22	3			
	Graduate of college and above	0	19	3			

Marital status	Single	0	13	2	1.176	2	0.555 NS	
	Married	0	65	17				
	Widowed	0	3	0				
Profession	Governmental employee	0	38	5	7.621	4	0.106 NS	
	Retired	0	5	0				
	No work	0	1	0				
	Freelance	0	21	5				
	Housewife	0	16	9				
Profession that trigger asthma	I work in factory of wool	Yes	0	1	1.274	1	0.259 NS	
		No	0	80				18
	I work in laboratory of chemical materials	Yes	0	5	0.023	1	0.881 NS	
		No	0	76				18
	I work in factory of blocks	Yes	0	5	1.235	1	0.267 NS	
		No	0	76				19
	I work in factory of cements	Yes	0	3	0.725	1	0.394 NS	
		No	0	78				19
	Place of resident	Urban	0	42	11	0.619	2	0.734 NS
		Semi-urban	0	37	8			
Rural		0	2	0				
Monthly Income	Enough	0	9	2	0.030	2	0.985 NS	
	Almost enough	0	67	16				
	Not enough	0	5	1				

χ^2 = Chi-square, Df= Degree of freedom, P-value= Probability value

This table reveals that there is a non-significant association between the patients' demographic characteristics and uncontrolled asthma at p-value more than 0.05.

IV. DISCUSSION

Part I: Discussion of the Socio Demographic Characteristics and Clinical Data among uncontrolled Asthma

The findings of the present study indicate that the majority of the study subjects are within (51-60) years old, and most of them are females. This result is agreed with (Dean et al., 2010), where they conducted an Internet-based survey which was administered to adult caregivers of children aged 6-12 years with moderate to severe asthma. Their results indicate that the majority of the study subjects are females.

Regarding to the level of education, the study findings indicate that most of the study subjects are elementary graduates. In addition, the study findings also indicate that most of the study subjects are married, their professions, are government employed and workers at wool factory. The study sample also shows that most of the people chosen come from urban area and their monthly income is enough to some extent. Moreover, the majority of the study subjects have almost enough monthly income.

The study findings indicate that most of the study subjects' disease diagnosed (11-21) years, are admitted to hospitals due to asthmatic attack and direct family with asthma. Also, the study subjects are obese their body mass index (30.5- 35), most of them are smokers, no diabetic mellitus disease, nor high blood pressure, and most of them have blood type (A group); the finding also show that most of the study subject visit health care providers, and intake asthma medication when needed. Naturally, this would not give them asthma control and in turn they would require appropriate medication like sprayer treatment. These results are supported by (Kempe, et al., 2014) where they conducted a cross-sectional study, asthma patients aged 18-75 were randomly selected from primary and secondary health care centers. Postal questionnaires were sent to 1,675 patients and the response rate was 71%. A total of 846 patients from primary and 341 patients from secondary care were evaluated. Data were collected using a questionnaire and review of medical records. Their results indicate that the majority of the study subjects are more than 50 years old, smokers, employees in a risky

environment, use inhaler bronchodilators, and from urban residential area, with low educational level, and good economic status⁽⁵⁾. (Eisner, et al., 2000), prospectively studied 242 with asthma, aged 18-50 years, recruited from a random sample of allergy and pulmonary physician practices in Northern California to identify risk factors for subsequent hospitalization. Their results indicate that the majority of asthmatic patients; are of 50 years old and more; They are married; and the most common of them are females⁽⁶⁾.

Part II: Discussion the Impact of Uncontrolled Asthma upon the patients' Performance.

The study results indicate that there is a sometimes effect of uncontrolled asthma on patients' functional performance. Mancuso, et al., 2015, mentioned that asthma affects the patients functional status as well as the patients' quality of life⁽⁷⁾. Peters, et al., 2006, studied 300 million people who are affected by asthma worldwide and the burden is likely to rise substantially in the next few decades. Estimates of the prevalence of asthma range from 7% in France and Germany to 11% in the USA and 15-18% in the United Kingdom. Approximately 20% of these patients have severe asthma, of which 20% is inadequately controlled. Patients with inadequately controlled severe persistent asthma are at a particularly high risk of exacerbations, hospitalization and death, and often have severely impaired quality of life and functional performance⁽⁸⁾.

Part III: Discussion of the Relationship between Uncontrolled Asthma for Patients' Performance and their Socio Demographic Data

The study results show that there is a Non-significant association between the patients' demographic characteristics and the levels of performance of uncontrolled asthmatic patients, except with the patients' body mass index. This result might be occur the asthma refers to a pathological and allergic problem and affect people with different educational and social classes so their demographic data may not affect asthmatic circumstances. Also Narry, et al., 2014, assessed the relationship between asthma, body mass index (BMI) and aerobic performance, as

indicated by a shuttle test. They found that there is a significant impact of the patients' body mass index on patients' performance⁽⁹⁾.

The study results shows that there is a significant association between the patients' demographic characteristics profession & place of residence and emotional efficiency. Meng, et al, 2008, conducted a study entitled "Uncontrolled asthma means missed work and school, emergency department visits for many Californians". They found that the Californians suffering from frequent asthma symptoms have higher rates in missing school or work due to their asthma, in visiting the emergency department or urgent care for their asthma, and they rated their overall health as fair or poor. Improvements in access to health care, asthma management and avoidance of triggers can help these Californians reduce the severity of their asthma burden. So there is a significant impact of the patients' levels of performance and their profession⁽¹⁰⁾. A study that confirm the risk factors for asthma; they found that there is a significant relationship between the levels of performance and even the uncontrolled asthma and the place of residency⁽¹¹⁾.

V. CONCLUSIONS

- [1] The study results confirmed the majority of the patients with uncontrolled asthma are those with an advanced age and female patients.
- [2] The study indicates that the majority of the study sample level of education are of primary education and that there is little opportunity for them to develop their level of education.
- [3] Most of the uncontrolled asthma patient occupation are governmental employed.
- [4] The study indicates that the uncontrolled asthma is most likely to occur among urban residents than those in rural.
- [5] The study results confirmed that most of asthmatic patients have no chronic disease such as (DM and BP).
- [6] The study indicates that nervousness & anxiety are the most common psychological problems that the asthmatic patients experience.
- [7] The study indicates that the uncontrolled asthma affects the patients' social and family life; emotional and social behavior; spiritual and religious beliefs. thus indicating that the chosen sample were complaining of nervousness and anxiety.
- [8] The study confirms that the asthma affects patients' physical mobility as well as affect their work status.

RECOMMENDATIONS

- [1] Initiate a specialized asthmatic health care centres to provide a complete quality care for people who have asthma. Diagnosing, treatment & written health information program equipped with all needed therapeutic

educational facilities such as lecture room with data show, to increase the patients' knowledge.

- [2] Provide a well-educated nursing staff for follow up visits, to Assess, monitor, & Review asthma action plan for reducing impairment & risk.
- [3] A mass media approaches should be employed by the ministry of health to increase the patients' awareness about how to control asthma.
- [4] Further studies should be conducted to involve national levels in order to assess the incidence of uncontrolled asthma and to compare the levels of performance between the controlled and uncontrolled asthma.

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