Patients' Knowledge& Practice Regarding Bronchial Asthma Self - Care Management

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Abstract

Background: Asthma is a frequent and potentially serious chronic disease that places a considerable burden on patients, their families and society. **Aim:** To assess Patients' knowledge and practice regarding bronchial asthma self -care management. **Design:** A descriptive explorative design was utilized for the conduction of this study. **Setting:** the study was conducted at (chest department & outpatient clinics) for bronchial asthma affiliated El- Fayoum University hospital, Egypt. **Sample of study:** A convenient sample of 100 patients with bronchial asthma **Tools:** Data were obtained through three main tools; Patients' interview questionnaire, patients' knowledge regarding asthma self-care management questionnaire and patients' observational practice checklist. **Results:** Mean age of patients under study was 31.5±7.41, while 63% of the studied patients were males and 70% of them were read and write .Also 69 % of the studied patient's had unsatisfactory level of knowledge regarding bronchial asthma and self-care management and 72% of the studied patients had unsatisfactory level of practice regarding bronchial asthma self-care management. **Conclusion:** Majority of the patients were having an unsatisfactory knowledge and practice regarding bronchial asthma and self-care management, but there was a positive correlation between patients' knowledge and practice which supported the research question. **Recommendations:** Develop and implement an educational program based on patients' learning needs regarding bronchial asthma.

Keywords: Patients' Knowledge, Practice, Bronchial Asthma, Self -Care Management.

Introduction:

Bronchial asthma is one of chronic respiratory diseases worldwide. According to World Health Organization (WHO), asthma prevalence is nearly 300 million patients all over the world. It is expected in 2025 to be 400 million, with mortality about 250,000 annually. In Egypt, asthma is estimated to be 6.7% and 8.2% among children and adults respectively, being more predominant in males than females (1.2:1) *(Tarraf et al., (2018).*

Well-structured asthma education with reinforcing by the health care professional is the key to achieve effective self-care management of asthma. Learning is the transformation of experience into knowledge, skills, and behaviors. Knowledge is also an integral part of life which results in changing of behavior *(WHO, 2019).*

It is important to teach patients how to manage their asthma and to reinforce the importance of asthma recognition and proper treatment of exacerbations at each medical visit. Other essential aspects of patient education include proper inhaler technique, understanding the difference between long-term control and quick-relief medication, avoidance of environmental factors that worsen asthma, development of a written asthma action plan in partnership with patient and family, and encouraging family involvement to provide support *(Moscatelli, 2020).*

Self-management is described as a crucial component of chronic illness care. People with a chronic disease, such as severe asthma, are encouraged by their healthcare providers to learn how to manage their condition. Self-management involves healthcare providers equipping patients with the skills and knowledge to manage their condition. For people living with severe asthma, this includes learning how to monitor their asthma control, adhering to their treatment, avoiding triggers,

planning a regular review with their healthcare provider, being able to recognize and respond to worsening symptoms *(Eassey, 2019).*

Nursing care for asthma focuses on preventing the hypersensitivity reaction, controlling the allergens, maintaining airway patency, clearance of secretions, absence /reduction of congestion with breath sound clear, noiseless respiration, improved oxygen exchange, understanding of causes and therapeutic management regimen and preventing the occurrence of reversible complications *(Rinnenburger, 2021).*

Significance of the study:

Bronchial asthma is one of the most common causes for intensive care units visits and admission for medical seeks each year. One of an important part of treatment of bronchial asthma is the control of the disease and needs to be assessed at its baseline and at routine intervals, particularly in the primary care centers *(Abo El-Fadl &Sheta, 2019).*

In Egypt, the prevalence of asthma in adults is nearly 8.2%, which reflects a significant increase over the last 20 years when compared with a previous prevalence rate of 2.2% in a similar study conducted more than 20 years ago. Bronchial asthma was found to be 6.09% and the prevalence was high in urban areas than in rural areas (6.58 and 5.34%, respectively).This reveals a significant increase in the magnitude of the problem in our community and the need for effective prevention and management programs *(Ahmed, 2018).*

Aim of the Study:

To assess patient's level of knowledge and practice regarding bronchial asthma self - care management.

Research questions:

The current study answered the following question:

1. What is patient's level of knowledge regarding bronchial asthma self -care management?

2. What is patient's level of practice regarding bronchial asthma self -care management?

Subjects And Methods

The study was portrayed under the four main designs as follows:

I. Technical design.

II. Operational design.

III. Administrative design.

IV. Statistical design.

I. Technical design:

The technical design includes research design, setting, subjects and tools for data collection.

Research Design: A descriptive explorative design was utilized for the conduction of this study.

Setting of the Study: The study was conducted at (chest department & outpatient clinics) for bronchial asthma affiliated El-Fayoum University hospital, Egypt. The outpatient chest clinic was at the 2nd floor contains two rooms and two big waiting area. The chest department was at the 4th floor, it had seven rooms .There were eight beds in each room.

Subjects: A convenient sample included all available patients (No=100),suffering from bronchial asthma who attending out -patient chest clinics and from both gender with different qualification, and adults were recruited to this study. **A convenient sampling** is defined as a method adopted by researchers where they collect market research data from a conveniently available pool of respondents **(Singh, 2019).**

Data Collection tools

Data were collected using the following tools:

Tool I- Patients' interview questionnaire:
It was adapted from (**Elbanna, 2017**) & **((Abo El-Fadl &Sheta, 2019).**It includes three parts:

Part 1: Socio demographic data:

It was concerned with Socio demographic data such as (age, educational level, residence, income and smoking).

Part 2: Patient' clinical data and medical history:

It was used to assess patients' medical history which includes items related to (onset of disease, duration of bronchial asthma, allergic substances, symptoms of asthma triggers , food condition and investigations).

Tool II- Patients' knowledge regarding asthma and self-care management:

Tool was adapted from *(Mohammed, 2021 & Hansen et al., 2016).*It was used to assess patients' knowledge regarding bronchial asthma and self-care management which included 52 items multiple choice questions classified into ten sections as following:
1. General knowledge about bronchial asthma (8 MCQs).
2. Causes of bronchial asthma (4 MCQs).
3. Medications and devices used in the treatment of bronchial asthma (13 MCQs).
4. Examinations and tests (6 MCQs).
5. Nutritional guidelines for patients with bronchial asthma (4 MCQs).
6. Breathing exercises for patients with bronchial asthma (1 MCQs).
7. Exercises guidelines for patients with asthma (3 MCQs).
8. Home hygiene (2 MCQs).
9. Prevention of asthma (9 MCQs).
10. Complications of bronchial asthma (2 MCQs).

❖ **Scoring system:**

One grade was given for the correct answer and zero for the incorrect answer, with total grade = 52 grades, for total 52 questions.

The total level of patient' knowledge score was categorized as follows:
- ≥70% was considered satisfactory (≥ 36.4 grades).

- <70% was considered unsatisfactory (< 36.4 grades).

Tool III: Patients' observational checklist:

It aimed to assess patients' practice during bronchial asthma attacks. It was adopted from *(Lynn & Lebon, 2018).*It was classified into seven procedures:

Procedure one: Deep breathing exercise included 9 steps.

Procedure two: Coughing exercise which included 6 steps.

Procedure three: Metered dose inhaler with spacer included 16 steps.

Procedure four: Metered dose inhaler in mouth which included 13 steps.

Procedure five: Metered dose inhaler with spacer and mask which included 16 steps.

Procedure six: Dry powder inhaler which included 9steps.

Procedure seven: Small volume nebulizer which included 13steps.

❖ **Scoring system:**

For each step the score was graded as (1) = done, and (zero) = not done. The total score for whole seven procedures of the patients' practice observational checklist (82 steps) as follows:
- ≥70% was considered satisfactory level of practice (≥ 57.4 grades).
- <70% was considered unsatisfactory level of practice (< 57.4 grades).

II. Operational design:

The operational design includes preparatory phase, validity and reliability, pilot study, pilot study, ethical consideration and field of work.

Preparatory phase:

It included reviewing of the current and more recent relevant national and international literature reviews and theoretical knowledge of the various related aspects using books, articles, periodicals, magazines and internet in order to develop the data collection tools.

Validity and reliability

Validity of the developed tools was tested using face and content validity. Validity was tested through a jury of 7 experts from critical care nursing department, Ain shams university .The experts reviewed the tools for clarity, relevance, comprehensiveness, and simplicity, minor modification were done.

Tool Reliability:

Reliability of the developed tools was tested using alpha Cronbach's model which is a model of internal consistency and its normal range between 0 and 1(value more than 0.5 denote acceptable reliability).The reliability for these tools was 0.81.

Pilot study:

Pilot study was carried out on ten patients (10%) to test applicability of the study and to test clarity of the designed questionnaires, as well as to estimate the time needed to conduct the study. Some modification on tools were done based on pilot study, some statements were omitted, rephrased and then the final forms were developed. Subjects included in the pilot study were excluded from the main study groups.

The ethical research considerations in the study included the following:

- The research approval was obtained from scientific research ethical committee in faculty of nursing in Ain Shams University before initiating the study work.
- The researcher clarified the objective and aim of the study to the patient's included in the study.
- The researcher assured maintaining anonymity and confidentiality of the subjects' data.
- Patients were informed that they allowed choosing to participate or not in the study and that they had the right to withdraw from the study at any time without giving any reasons.
- Ethics, values, culture, and beliefs were respected.

Field work:

Data were collected within six months from the beginning of August 2021 till end of January, 2022.

Before conducting the study, an exploratory visit was done to outpatient clinics to evaluate the rate of admission and suitable time for collecting data. Moreover, personal communication was done with nurses and physicians to explain the purpose of the study and gain their best possible cooperation.

The researcher started by identification of bronchial asthma patients who included in the study. Data were collected using a written questionnaire for each patient that was interviewed individually to fill in the questionnaire.

Assesse patient's level of (knowledge & practice) regarding to bronchial asthma by using interview questionnaire and patients' observational checklist.

The interview took approximately 30–45 min according to the patients' level of understanding and comfort. Each patient was observed by the researcher during practice using the observational checklist it took about 30-45 minutes. Then, knowledge questionnaire sheet was filled by the researcher it took about 30-35 minutes. The answers were recorded by the researcher.

III. Administrative design

An official permission for collection of data was obtained by sub-mission of an official letter issued from the director of the faculty of nursing at Ain Shams University to the director of Out-Patient Clinics Hospital at El-Fayoum University Hospital. Once the researcher was granted approval and patients were interviewed

individually by the researcher with face-to-face interviews in the waiting area of the clinics.

IV. Statistical design

The collected data were organized, categorized, tabulated and statistically analyzed using the statistical package for social science (SPSS) version (21). Data were presented in tables and graphs. The statistical analysis included; percentage (%), the arithmetic mean ($\overline{X}$), standard deviation (SD) and chi-square (X2 & P-value).

Results:

Table (1): Shows the distribution of the study sample according to socio-demographic data. This table reveals that, 34% of studied subjects aged 30- <40 years with mean age (31.5±7.41). As regards patients' educational level, 70% of studied sample were read and write. Regarding residence, 94% of them living in urban areas and all of them reported that, income not covers treatment costs. Regarding smoking habits they reported that, 58% of them were smokers and 81% of them had foods trigger asthma attack.

Table (2): Shows that, 47% of the studied sample their duration of bronchial asthma were more than five years. Regarding exposure to allergic substances, all of them had exposed to house dust and had shortness of breathing during asthma attack.

Table (3): Shows that, 73% of studied sample had unsatisfactory knowledge regarding general knowledge of bronchial asthma while 70% of them had unsatisfactory level of knowledge regarding causes of asthma and 85% of them had unsatisfactory level of knowledge regarding home sanitation.

Figure (1): Reveals that, 31% of the studied patients had satisfactory level of total knowledge regarding bronchial asthma self-care management, while 69% of them had unsatisfactory level of total knowledge

regarding bronchial asthma self- care management.

Table (4): Shows that, 77% of studied sample had unsatisfactory level of practice regarding metered dose inhaler (MDI) while (75%&74%) of them had unsatisfactory level of practice regarding deep breathing &coughing exercise respectively.

Figure (2): Illustrates that: 28% of the studied patients had satisfactory level of total practice regarding bronchial asthma self- care management, while 72% of them had unsatisfactory level of total practice regarding bronchial asthma self- care management.

Table (5): Illustrates that, there was highly statistically significant difference between the patients' level of knowledge regarding bronchial asthma self- care management and some demographic characteristics; educational level at p- <0.001, while there was statistically significant difference between the patients' level of knowledge regarding bronchial asthma self-care management and demographic characteristics; age, occupation and number of family members at p< 0.006& 0.005& 0.014 respectively.

Table (6): Illustrates that, there was highly statistically significant difference between the patients' level of practice regarding bronchial asthma self- care management and some demographic characteristics; educational level at p- <0.001,while there was statistically significant difference between the patients' level of practice regarding bronchial asthma self- care management and demographic characteristics; age, occupation and at p< 0.020& 0.002& respectively.

Table (7): Illustrates the positive correlation between total knowledge score and total practice among the study group. There was highly statistically significant deference between total knowledge score and total practice score with p-value <0.001.

Part I: Demographic characteristics of the patients under the study.

Table (1): Frequency and Percentage distribution of the studied patients as regards socio-demographic characteristics (n=100).

Characteristics	N	%
Age		
20- <30	30	30.0
30- <40	34	**34.0**
40- <60	20	20.0
60 or more	16	16.0
Mean±SD		31.5±7.41
Gender		
Male	63	**63.0**
Female	37	37.0
Educational level		
Illiterate	27	27.0
Read and write	70	**70.0**
Technical diploma	3	3.0
Place of residence		
Urban	94	**94.0**
Rural	6	6.0
Income per month from the patient's point of view		
cover treatment costs	0	0
Not cover treatment costs	100	**100.0**
Smoking		
Yes	58	**58.0**
No	42	42.0

Table (2): Frequency and Percentage distribution of the studied patients as regards medical health history (n=100).

Items	N	%
Duration of bronchial asthma		
1-3 years	31	**47.0**
3-5 years	22	22.0
More than 5 years	47	31.0
Mean±SD **4.12±3.25**		
Triggers of asthma		
House dust	100	**100.0**
Pet dander	63	63.0
Plastic	38	38.0
Pollen	68	68.0
Hair spray	45	45.0
Pesticides	65	65.0
Wood fire smoke	74	74.0
Car exhaust	73	73.0
Exposure to insects such as cockroach	38	38.0
Using perfume	71	71.0
Dehydration - high humidity	3	3.0
Violent exercise	56	56.0
Exposure to cold weather	91	**91.0**
Emotions	37	37.0
Foods trigger an asthma attack		
Yes	81	**81.0**
No	19	19.0
Symptoms of asthma attack		
Shortness of breath	100	**100.0**
Tightness in the chest	77	77.0
Dry cough	12	12.0
Cough with secretions	97	**97.0**
Rapid heart rate	38	38.0
Increased respiratory rate	59	59.0
Pale face	58	58.0
Wheezing in the chest	94	**94.0**
Choking	14	14.0
Investigations performed		
Yes	100	100.0
No	0	0.0

Part II: Patient's level of knowledge regarding bronchial asthma and self-care management

Table (3): Frequency and percentage distribution of the studied patients' level of knowledge regarding to bronchial asthma and self-care management (n=100).

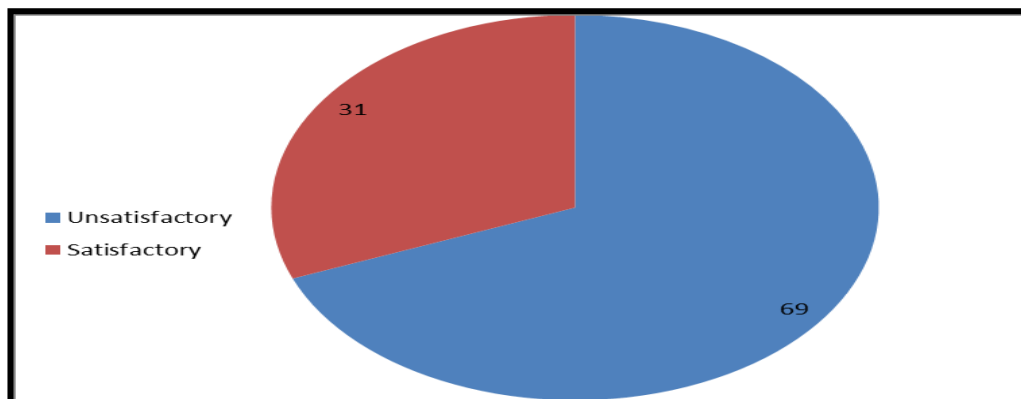| Items | Level of Knowledge | | | |
| | Satisfactory | | Unsatisfactory | |
	N	%	N	%
1-General knowledge about bronchial asthma	27	27	73	**73**
2-Causes of bronchial asthma	30	30	70	**70**
3-Medications and devices used in the treatment of bronchial asthma	33	33	67	67
4-The examinations and tests that performed for patient with bronchial asthma	33	33	67	67
5-Nutritional guidelines for patients with bronchial asthma	34	34	66	66
6-Breathing exercises for patients with bronchial asthma	40	40	60	60
7- Exercises guidelines for patients with asthma	36	36	64	64
8- Home sanitation	15	15	85	**85**
9- Prevention of asthma	33	33	67	67
10- Complications of bronchial asthma	31	31	69	69

Figure (1): Percentage distribution of the studied patients' total level of knowledge regarding bronchial asthma and self-care management (n=100).

Part III: Patient's level of practice regarding bronchial asthma and self-care management

Table (4): Frequency and percentage distribution of the studied patients' practice regarding to bronchial asthma and self-care management (n=100)

| Items	Level of practice			
	Satisfactory			**Unsatisfactory**
	N	%	N	%
Deep breathing and coughing exercise				
A-Deep breathing exercise	26	26	74	**74**
B-Coughing exercise	25	25	75	**75**
Patient's administration of Asthma Medication (PAAM)				
A-Metered dose inhaler (MDI)with spacer	23	23	77	**77**
B- Metered dose inhaler (MDI) in mouth	27	27	73	73
C-Metered dose inhaler (MDI) with spacer and mask	25	25	75	75
D- Dry powder inhaler(DPI)	32	32	68	68
F- Small volume nebulizer (SVN)	42	42	58	58
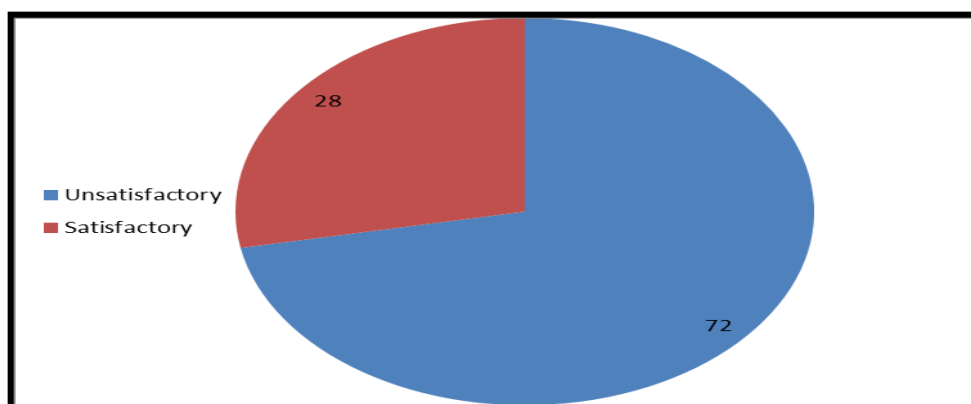
Figure (2): Percentage distribution of the studied patients' total practice regarding bronchial asthma and self-care management (n=100).

Part V: Relations between patients' Scio-demographic characteristics and total knowledge score regarding bronchial asthma and self-care management (n=100).

Table (5): Relations between patients' Scio-demographic characteristics and total knowledge score regarding bronchial asthma and self-care management (n=100).

	Total knowledge					
	Satisfactory		Unsatisfactory			Chi-square
	N	%	N	%	X^2	P-value
Age						
20- <30	15	50.0	15	50.0		
30- <40	11	32.4	23	67.6	12.617	0.006*
40- <60	5	25.0	15	75.0		
60 or more	0	0.0	16	100.0		
Gender						
Male	16	25.4	47	74.6	2.499	0.114
Female	15	40.5	22	59.5		
Marital status						
Married	28	29.8	66	70.2	1.077	0.299
Unmarried	3	50.0	3	50.0		
Educational level						
Illiterate	3	4.3	67	95.7		
read and write	25	92.6	2	7.4	77.918	<0.001**
Technical diploma	3	100.0	0	0.0		
Occupation						
Employed	21	44.7	26	55.3	7.760	0.005*
Unemployed	10	18.9	43	81.1		
Place of residence						
Urban	31	33.0	63	67.0	2.868	0.090
Rural	0	0.0	6	100.0		
Number of family members						
1-3	5	35.7	9	64.3		
3-5	1	4.8	20	95.2	8.596	0.014*
5 or more	25	38.5	40	61.5		

Table (6): Relations between patients' Scio-demographic characteristics and total   practice score regarding bronchial asthma and self-care management (n=100).

| | Total practice | | | | Chi-square | |
| | Satisfactory | | Unsatisfactory | | | |
	N	%	N	%	X²	P-value
Age						
20- <30	13	43.3	17	56.7		
30- <40	10	29.4	24	70.6	9.844	0.020*
40- <60	5	25.0	15	75.0		
60 or more	0	0.0	16	100.0		
Gender						
Male	15	23.8	48	76.2	1.483	0.223
Female	13	35.1	24	64.9		
Marital status						
Married	25	26.6	69	73.4	1.532	0.216
Unmarried	3	50.0	3	50.0		
Educational level						
Illiterate	3	4.3	67	95.7		
read and write	22	81.5	5	18.5	65.548	<0.001*
Technical diploma	3	100.0	0	0.0		
Occupation						
Employed	20	42.6	27	57.4	9.316	0.002*
Unemployed	8	15.1	45	84.9		
Place of residence						
Urban	28	29.8	66	70.2	2.482	0.115
Rural	0	0.0	6	100.0		
Number of family members						
1-3	5	35.7	9	64.3		
3-5	1	4.8	20	95.2	7.140	0.060
5 or more	22	33.8	43	66.2		

Table (7): Correlation between patients' total knowledge score and total practice score regarding bronchial asthma and self -care management (n=100).

| Items | Total Knowledge | |
	R	P-value
Total practice	0.372	<0.001*

Discussion:

The discussion of the findings covered main parts:

Regarding the socio-demographic characteristics of the studied sample and medical history**,** the current study revealed that, more than one-third of them ranged between 30- <40 years with a mean value (of 31.5±7.41), while less than one-third of the total sample age was 20-30, unfortunately, at this age, of this disease, of middle adulthood, characterized by work and being productive persons for both the family and society which effects on their production and their income. In, addition many patients at this age have a poor prognosis, with a faster decline in lung function and more severe persistent airflow limitations which affect on

self -management outcomes *(Cunha et al., 2019).*

This finding was in accordance with *Eissa et al.,(2020)* Who conducted a study about "Outcome of An Educational Program on Bronchial Asthma Self-Management" mentioned that ,three quarters of the studied sample were in the age group 18-35 years with mean value (27.38 ± 12.280).This wasn't in agreement with *Ibrahim et al.,(2019)* who studied" Effect of an Educational Program Regarding Self-Care Management Behaviors for Patients with Bronchial Asthma" reported that, more than half of the studied were among the age group of 40-60 years.

As regard patients' educational level the present result indicated that, more than two thirds of the studied patients could read and write, while more than one fourth were illiterate. These findings were disagreed with *Elbur, & Alharthi ,(2017),* whose study was about "Self-management and control of asthma among adult patients" stated that, more than half of patients with bronchial asthma had high level of education. This result could be explained by the fact that less educated patients may not easily understand key messages provided in health education. In addition, they have few chances to come across information about the disease and its management. This finding should be considered in the design of future educational intervention to improve the disease outcome among less educated patients.

Also these findings were contradicted with *Abo El-Fadl &Sheta, (2019),* Who conducted a study about "Effect of an Educational Program Regarding Self-Care Strategies for Patients with Bronchial Asthma on Their Knowledge and Practice" stated that, more than two thirds of patients with bronchial asthma were illiterate.

Concerning to residence, the study findings showed that, urban area had higher incidence of BA than those living in rural area. These results are supported by *Ibrahim et al., (2019),* Who conducted a study about "Patients with Bronchial Asthma: Effect of Self-Management Program on Knowledge Practice, and Self Efficacy" stated that, the highest

notification rate are found among urban residents compared with rural areas. This reflects that, the populations of urban areas are more exposed to BA because of overcrowding and environmental outdoor pollution may be a main reason for these phenomena. A higher concentration of harmful gas and fine particular matter is present in outdoor air in urban area than rural .These results contradicted with *Bayomi, (2018),* Who conducted a study about" Effect of Nursing Intervention Program on Nurses Knowledge, Practices and Patients Outcome   with Bronchial Asthma" reported that, more than three quarters of studied subjects were from rural areas.

The current study showed that, all of the studied sample had insufficient monthly income. This supported by *Barakat,(2017),* Who conducted a study about "the effect of risk factors on BA elderly health-related quality of life at Assiut university hospital in Egypt" mentioned that, majority of the participants had insufficient income**.**

The present study revealed that, more than half of the studied sample were cigarette smokers , in relation to amount of smoking range from (1-2 packs /day)   in the study of *Mishra et al., (2017),* Who conducted a study about "Role of Adult Asthma Education in Improving Asthma Control and Reducing Emergency Room Utilization" reported that, more than half of the study participants were active smokers and used more than two packs in the day.

Also *Barrie, (2020),* Who conducted a study about "Risk Factors that Predict Asthma Among Adult, foreign-born African Americans in California" reported that, there was no significant association between tobacco smoking and asthma status.

The present study illustrated that, the majority of studied subjects had allergy to certain foods as (fish and eggs). This could be due to increase bronchial responsiveness to histamine, which increased immediately after ingestion of some foods. This finding was in accordance with *Abo El-Fadle &Sheta (2019),* who stated that some foods could trigger asthma.

The duration of BA disease is an important determinant of patients' health, needs and consequently might have an influence on their quality of life. In the present study, more than one third of the studied subjects had bronchial asthma duration more than five years. This may be due to the chronicity of the disease. This was in agreement with **Gare, Godana & Zewdu , (2020),** who found that, the duration of illness was 5years.However, these results were disagreed with **Bayomi , (2018),** who reported that the majority of studied sample their duration of asthma were more than ten years.

The current study elicited that, the studied patients stated that, the most common triggers for asthmatic attack were house dust and exposure to cold. This was at the same line, with the study of **Dharmage , Perret & Custovic,(2019),** Who conducted a study about "Epidemiology of Asthma in and Adults" confirmed that, the most common risk factors for the attack were pollen allergen, respiratory viral infection, Cigarette smoke, and house dust.

As regard to patients' level of knowledge regarding asthma and self -care management, the findings indicated that, more than two thirds of studied patients had unsatisfactory level of knowledge regarding bronchial asthma and self -care management. This lack of knowledge could be attributed to the lack of educational programs and unavailability of information resources about the disease and its effect. This result was widely close to **Roach & Bhaskaranand, (2019)**, who stated that, a well-designed course on asthma management is an efficient scheme to improve public health knowledge and confidence on asthma. These results also contradicted with **Gare et al., (2020),** Who conducted a study about" Knowledge, Attitude, and Practice Assessment of Adult Asthmatic Patients towards Pharmacotherapy of Asthma at Jimma University Specialized Hospital" reported that, knowledge about asthma is poor among asthma patients and misconceptions are prevalent. Strategies are needed to increase education and awareness about the disease in order to improve disease management.

As regard to general knowledge about bronchial asthma, the current study revealed that

nearly three quarters of patients had unsatisfactory level of knowledge regarding asthma self -care management. It agrees with **Elbur & Alharthi,(2017)** who reported that overall, patient's responses to the items of asthma self- management revealed wide gaps in knowledge of asthmatic patients about the disease, the role of various medications and strategies to prevent asthma attacks. For example, the recruited patients had poor knowledge about the technique of using the inhaler with regard to the steps taken during the use of the device.

In relation to level of knowledge about home hygiene, the current study mentioned that patients under study had unsatisfactory level of knowledge. The finding of study was in accordance with **Ibrahim et al., (2019),** who stated that, all of the patients' total knowledge was unsatisfactory regarding environmental control.

As regard to patients' practice related to asthma, the present study revealed that, more than one fourth of studied sample had satisfactory level of practice regarding Metered dose Inhaler (MDI) with Spacer while majority of them had unsatisfactory level of practice regarding all items of asthma and self- care management practice. The inadequate level of practice may be due to that physicians working in hospitals are often overloaded, implying that the time available for each patient is limited, this result is congruent with that of **Hassan et al., (2021)**, Who conducted a study about" Buteyko Breathing Technique: The Golden Way for Controlling Asthma" stated that, in many countries, although levels of asthma self-management are low (regarding both knowledge and practices of asthma patients), these could be improved by means of education.as well regarding inhaler practice through the self-learning package.

As regards to relations between patients' demographic characteristics, patients' level of knowledge, patients' practice.

Concerning the relation between the total knowledge score and the socio-demographic characteristics of the studied subjects, this study

finding detected highly statistically significant associations between knowledge and demographic characteristics, statistically significant difference between patients total level of knowledge ; occupation and numbers of family members which means that the educated patients lead to high score of knowledge, However, no statistically significant relation was found between males and females. This finding may be explained as unsatisfactory knowledge was common among low level of education, who could not find work and with low income. So, better education means better occupation, enough income, and more health.

These results were congruent with *Madhushani & Subasinghe (2016)*, entitled «Knowledge Attitudes and Practices of Asthma: Does It Associate with Demographic Factors of Adult Patients? », which stated that, many studies have demonstrated a relationship between asthma knowledge and patients' education, in which a higher education level was associated with more knowledge.

As detected from this study, results regarding to the relation between total practice and some variables in the study group. It pointed highly statistically significant difference between the patients total level of practice; educational level at p<0.001. Also there were statistically significant difference between patients total level of practice; age and occupation at P <0.05. Which means that the educated patients, age 30-40, has high score of practice. While *Barrie, (2020)*, contradicted with these results, as he reported that no significant associations between asthma and study Variables as age, education, residence, duration of illness.

As regard to correlation between total knowledge and total practice, the current study showed that, there was highly statistically positive correlation between total knowledge score and total practice score with p-value <0.001. Furthermore, this result was supported *by Nguyen, Huynh& Chavannes,s (2018),* Whose founded that, there was a positive correlation between asthma self- management and asthma control practice.

Conclusion:

Based on the result of the current study; it could be concluded that:

The results revealed that, about 69% of study patients had unsatisfactory level of knowledge regarding bronchial asthma and self -care management and 72% of patients had unsatisfactory level of practice and positive correlation between patient' knowledge, practice and demographic data.

Recommendation:

✓ Develop and implement an educational program based on patients' learning needs.

✓ Future research should be conducted to examine patients' perception, knowledge and practices regarding asthma and self-care management.

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