# Assessment of Patients' Needs Regarding Bronchial Asthma Self -Care Management

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## Abstract

**Background:** One of the most common chronic illnesses worldwide is asthma. Furthermore, because of the rise in its frequency, intensity, and impacts on several aspects of the individual, family, economic, and health systems. The **aim**: To evaluate patient's level of knowledge and practice regarding bronchial asthma self -care management. **Design**: A descriptive explorative design was used to carry out this investigation. **Setting:** El-Fayoum University Hospital in Egypt's chest department and outpatient clinics for bronchial asthma served as the study's host. **Study sample**: Consisted of A Purposive sample of one hundred adult patients with bronchial asthma over a period of 6 months. Three primary methods were used to collect the data: a questionnaire for patient interviews, a knowledge questionnaire for asthma self-care management, and an observational practice checklist for patients. **Results:** The study participants were 63% male and 70% literate, with an average age of 31.5±7.41. Furthermore, 69% of the study's participants had sufficient understanding of bronchial asthma and how to treat it on their own, and 72% of participants lacked sufficient experience with it. **Conclusion:** Despite most of the patients' insufficient knowledge and experience in these areas, the research question was supported by the favorable correlation between patients' knowledge and practice linked to bronchial asthma and self-care management. **Recommendations:** Develop and implement an educational program for patients with bronchial asthma regarding self-care management based on their requirements.

***Keywords*: Keywords:** Patients', Needs, Bronchial Asthma, Self -Care Management

**Introduction:**

Asthma was classified based on its pathological, physiological, and clinical features. Wheezing and bouts of dyspnea are the main characteristics. The Greek word "aazein," which means "to breathe with an open mouth or to pant," is where the word "asthma" originates **(Global Initiative for Asthma, 2020).**

Worldwide, bronchial asthma is one of the chronic respiratory conditions. The World Health Organization (WHO) estimates that 300 million people worldwide suffer from asthma. It was projected to reach 400 million by 2025, with a yearly mortality rate of over 250.000. Asthma prevalence in Egypt was estimated to be 6.7% in children and 8.2% in adults, with a higher prevalence in males than females. (1.2:1) **(Tarraf et al., (2018).**

Patients must be taught how to manage their asthma, and the importance of recognizing and treating asthma attacks cannot be overstated. Proper inhaler technique, understanding the distinction between short-term and long-term asthma medicine, avoiding triggers in the environment, working with the patient and family to create a written asthma action plan, and encouraging family involvement to offer support are other crucial components of patient education **(Moscatelli, 2020).**

One important aspect of caring for patients with chronic illnesses is self-management. Healthcare professionals advise patients with chronic illnesses, such as severe asthma, to take care of their condition. Healthcare professionals who support self-management give patients the tools they need to control of their health. **(Eassey, 2019).**

The goals of nursing care for asthma include preventing hypersensitivity reactions, managing allergens, keeping airways open,

removing secretions, reducing or eliminating congestion with clear breathing, improving oxygen exchange, comprehending the underlying causes and the recommended course of treatment, and avoiding the development of reversible complications **(Rinnenburger, 2021).**

As a therapeutic intervention, patient education in asthma self-management has arisen to assist patients in managing and comprehending their asthma and, ideally, in being proactive, self-sufficient participants in their asthma care. **(Al-Atawi, 2019).**

**Significance of the study**

One of the most frequent reasons why patients come and are admitted to intensive care units each year is bronchial asthma. Controlling the condition is a crucial component of treating bronchial asthma, and it must be evaluated at first time as a baseline and on a regular basis, especially in primary care settings. **(Abo El-Fadl &Sheta, 2019).**

Bronchial asthma was found to be 6.09%, with a higher incidence in urban regions than in rural ones (6.58 and 5.34%, respectively).This indicates that the problem's scope in our community has significantly increased, highlighting the necessity of efficient preventative and management initiatives **(Ahmed, 2018).**

**Aim:**

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

**Research questions:**

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

## Methodology

**I. Technical design:**

**Research Design:** A descriptive explorative design was adopted.

**Setting of the Study:** The study was carried out at the chest department and outpatient clinics for bronchial asthma of El-Fayoum University hospital in Egypt. The outpatient chest clinic included two rooms and a large waiting area. The chest department in the fourth floor consists of seven rooms. Every room contained eight beds.

**Subjects:** All eligible patients (n = 100) with bronchial asthma who attended outpatient chest clinics, regardless of gender or educational background, were included in a convenient sample for this study. Adults were also recruited. Convenient sampling refers to a technique used by researchers to gather market research data from an easily accessible pool of respondents **(*Singh, 2019*).**

**Data collection tools:**

Three tools were used in the current study as the following: **I- Patients' interview questionnaire form:** It was adapted from **Elbanna (2017)** & **El-fadl et al. (2019)** and modified by the researcher to suite the study aim. It includes three parts:

**Part 1: Socio-demographic data:** Socio-demographic information as age, income, residence, education level, and smoking were involved.

**Part (2):** Patient's medical history and clinical data:

It was employed to assess the patients' medical history, taking into account information on the commencement of the illness, the length of the bronchial asthma attack, allergic substances, asthma trigger symptoms, food allergies.

**Tool (II): -** Patient's knowledge regarding asthma and self-care management: This part was adapted from **Mohammed (2021) & Hansen (2016),** and modified by the researcher to suite the study aim. It was used to assess patients' knowledge regarding bronchial asthma and self-care management. It was written in Arabic language

and included 52 questions in the form of multiple-choice questions (MCQ). It was categorized into ten sections as follows:

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 MCQ).
7. Exercise guidelines for patients with asthma (3 MCQs).
8. Home hygiene (2 MCQs).
9. The prevention of asthma (9 MCQs).
10. Complications of bronchial asthma (2 MCQs).

**Scoring:** For a total of 52 questions, one mark was given for a correct response and zero for an incorrect response. The total grade was 52.

The total level was categorized as follows:

- ✓ ≥70% was satisfactory
- ✓ <70%wasunsatisfactory

**Tool (III):** Patient's observational checklist:

Its goal was to evaluate how well patients handled bronchial asthma episodes. The source of adoption was **(Lynn & Lebon, 2018**). It was divided up into seven procedures: **First procedure:** A nine-step deep breathing exercise was offered.

**Second procedure:** a six-step coughing exercise.

**The third procedure**: involved 16 steps using a meter dosage inhaler with a spacer.

**The fourth procedure** Metered dose inhaler in the mouth, requiring 13 steps.

**The fifth procedure**: involved 16 steps and a meter dosage inhaler with a spacer and mask.

**The sixth procedure:** a dry

powder inhaler with nine steps.

**The seventh procedure**: Use a small volume nebulizer, which requires thirteen steps.

**Scoring: (**1) = done and (0) = not done for each stage. The following is the total score for all 7processes (a total of 82 steps) on observational checklist:

√ ≥70% was satisfactory

√ <70% was unsatisfactory

**II. Operational design:**

**Preparatory phase:**

To create the data collection tools, it involved evaluating the most recent and pertinent national and worldwide literature reviews of the different connected aspects through the use of books, papers, periodicals, magazines, and the internet.

**Validity and reliability**

A panel of seven specialists from Ain Shams University's critical care nursing department evaluated the validity of the findings. The tools were examined by the specialists to ensure that they were simple, clear, relevant, and thorough. Some minor adjustments were made.

**Tool Reliability:**

The reliability of tools was tested statistically using Cronbach's Alpha coefficient test which revealed that the tools of the study were reliable as indicated by the value for knowledge and practice, were reliable at 0.795, 0.804 respectively.

**Pilot study:**

Pilot study tools were carried out on a group of 10 patients (10%) to test the applicability of the study and to test the clarity of the designed questionnaires, as well as to estimate the time needed to conduct the tools.

**Ethical considerations**

Before beginning study, the scientific ethical committee of Ain Shams University's college of nursing granted consent for the research and obtained code of ethics for the study **(22.08.02).**

**Field work:**

Six months, from the beginning of August 2022 to the end of January

2023, were used to collect the data. An exploratory visit was made to outpatient clinics prior to the study in order to assess the admission rate and the best time to gather data. Additionally, direct communication was used to inform doctors and nurses about the study's goal and secure their fullest cooperation. First, the individuals with bronchial asthma who were to be included in the study were identified by the researcher. A written questionnaire was used to gather data, and each patient who was interviewed separately was asked to complete it. Assess the patient's degree of knowledge and practice regarding bronchial asthma using the patient's observational checklist and an interview questionnaire. The duration of the interview varied according on the patients' comfort and level of wisdom, ranging from 30 to 45 minutes. Using the observational checklist, the researcher spent 30-45 minutes observing each patient during practice. Next, the researcher filled out the knowledge questionnaire, which took roughly 30-35 minutes. The researcher took notes on the responses.

**III. Administrative design**

An official letter from the dean of faculty of nursing, Ain Shams University to the head of the El-Fayoum University Hospital's Out-Patient Clinics for permission to collect data. As soon as the researcher received approval, she conducted in-person interviews with each patient in the clinic waiting area.

**IV. Statistical design**

The statistical program for social science (SPSS) version 21 was used to arrange, classify, tabulate, and statistically analyze the collected data. There were graphs and tables with the data. Data was displayed in the form of mean and standard deviation, percentage (%), and chi-square (X2 & P-value) were all included in the statistical analysis.

## Results

**Table (1)** displays the distribution of the research sample according to socio demographic data. According to the study's mean age of 31.5±7.41, 34% of the participants were under 40 years old. 70% of the patients in the study could read and write. 94% of respondents to this survey indicated they were city dwellers and that their pay did not cover the cost of their medical care. In terms of smoking behaviors, they stated that 81% of them experienced food-triggered asthma attacks and 58% of them were smokers.

**Table (2)** shows that among the study group, 47% had bronchial asthma for more than five years. Regarding allergic material exposure, after being exposed to household dust, all of them had trouble breathing during an asthma attack.

**Table (3)** shows that 73% of the group under analysis knew too little about the causes of bronchial asthma, 70% knew too little about the causes of asthma individually, and 85% knew too little about home sanitation**.**

**Figure (1)** reveals that while 69% of the study's patients had inadequate levels of general knowledge about managing their bronchial asthma, 31% of the patients had adequate levels of knowledge overall.

**Table (4)** 77% of the study group had not utilized a metered dosage inhaler (MDI) to an acceptable degree with 75% and 74% respectively, of them had not engaged in deep breathing and coughing exercises. 28% of the patients in the study had a satisfactory level of overall practice for managing their bronchial asthma, whereas 72% of them had an unsatisfactory level of overall practice.

**Figure (2)** the patients' awareness of certain demographic information and bronchial asthma self-care management was significantly different.

**Table (5)** the educational level was at p- <0.001, for instance. The patients' level of knowledge regarding the self-care treatment of their bronchial asthma and their demographic factors, including age, occupation, and the number of family members, showed a statistically significant difference at p< 0.006& 0.005& 0.014, respectively.

**Table (6)** shows that the patients' level of practice managing their bronchial asthma on their own was significantly different from a few demographic traits, such as educational level (p- <0.001), and there was also a statistically significant difference between the patients' level of practice and demographic traits, such as age, occupation, and p< 0.020& 0.002, respectively, regarding the management of their bronchial asthma.

**Table (7)** demonstrates the positive relationship between the study group's total practice and overall knowledge score. With a p-value of less than 0.001, the difference between the total knowledge and total practice scores was highly statistically significant.

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

| Features | 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): Distribution of study participants according to their medical history (n=100).**

| Items | N | % |
|---|---|---|
| **Duration of bronchial asthma attack** | | |
| 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 |

**Table (3): Frequency and percentage distribution of the studied patients' level of knowledge regarding 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 |

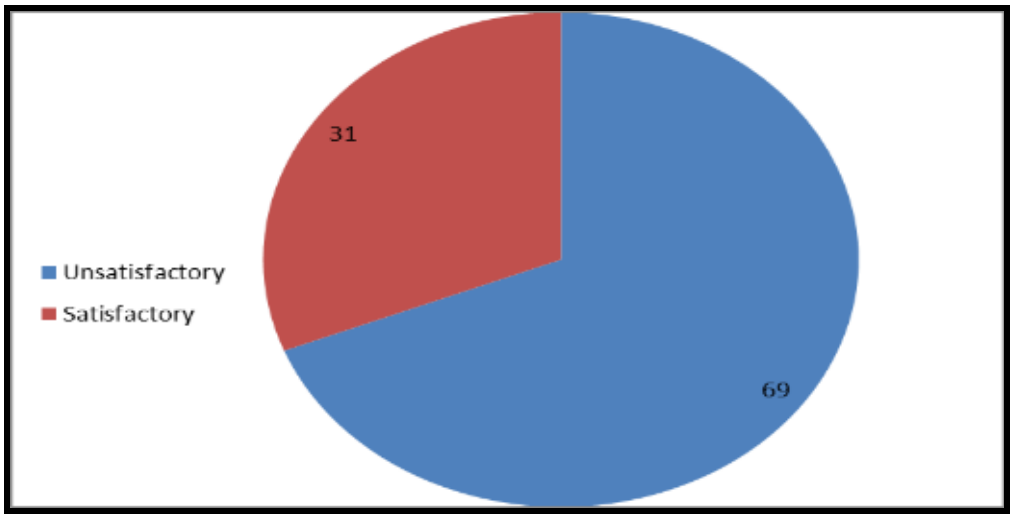


**Figure (1): Percentage distribution of the studied patients' total level of knowledge regarding bronchial asthma and self-care management (n=100).**

**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 |

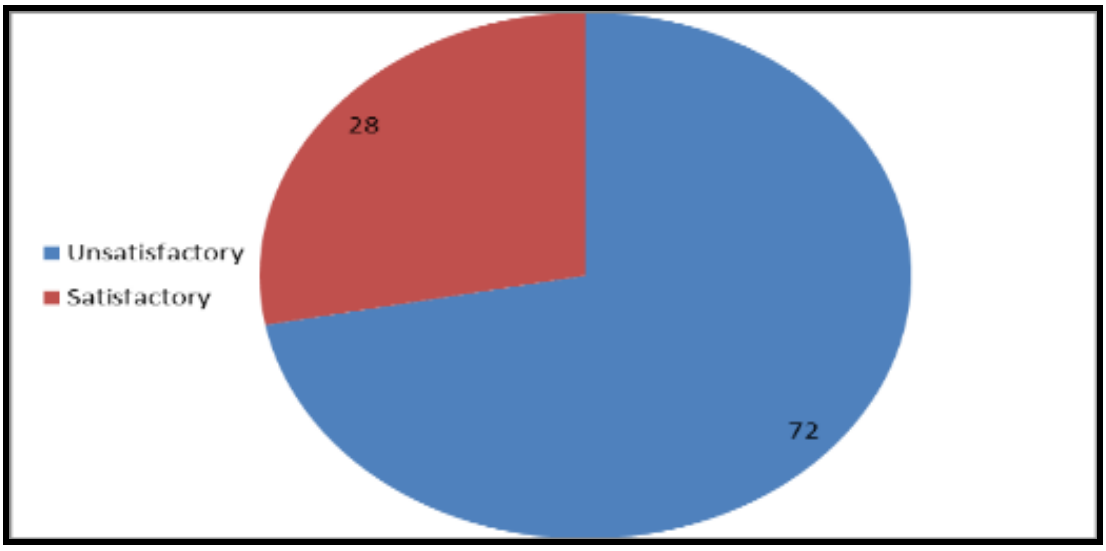


**Figure (2): Percentage distribution of the studied patients' total practice regarding bronchial asthma and self-care management (n=100).**

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

| Items | Total knowledge | | | | | |
|---|---|---|---|---|---|---|
| | Satisfactory | | Unsatisfactory | | Chi-square | |
| | N | % | N | % | $X^2$ | P-value |
| **Age** | | | | | | |
| 20- <30 | 15 | 50.0 | 15 | 50.0 | 12.617 | 0.006* |
| 30- <40 | 11 | 32.4 | 23 | 67.6 | | |
| 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 | 77.918 | <0.001** |
| read and write | 25 | 92.6 | 2 | 7.4 | | |
| 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 | 8.596 | 0.014* |
| 3-5 | 1 | 4.8 | 20 | 95.2 | | |
| 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).**

| Items | Total practice | | | | | |
|---|---|---|---|---|---|---|
| | Satisfactory | | Unsatisfactory | | Chi-square | |
| | N | % | N | % | $X^2$ | P-value |
| **Age** | | | | | | |
| 20- <30 | 13 | 43.3 | 17 | 56.7 | 9.844 | 0.020* |
| 30- <40 | 10 | 29.4 | 24 | 70.6 | | |
| 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 | 65.548 | <0.001* |
| read and write | 22 | 81.5 | 5 | 18.5 | | |
| 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 | 7.140 | 0.060 |
| 3-5 | 1 | 4.8 | 20 | 95.2 | | |
| 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 current study indicated that almost one-third of the participants fell between the ages of 30 - 40years in terms of the medical history and socio-demographic aspects of the sample under inquiry. On the other hand, the patient's age between 20 - 30 made up less than one-third of the sample. Unfortunately, this age group is linked to middle adulthood, which is characterized by employment and contributing to the family and community, all of which have an effect on their productivity and income. Furthermore, a lot of patients in this age range have bad prognosis because their chronic airflow limitations are more severe, and their lung function deteriorates faster **(Cunha et al.2019)**

This finding agreed with **Eissa et al., (2020)**, who conducted a study about" Outcome of An Educational Program on Bronchial Asthma Self-Management" and mentioned that more than one-third of the studied sample was in the age group 18-35 years with mean value (27.38 ± 12.280). While, this finding was contradicted 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" and reported that more than half of the studied patients were among the age group of 40-60 years.

With respect to the patients' level of education, the present results demonstrated that over two thirds of the patients under analysis could read and write, but over one-fourth of the patients were illiterate. These results were not universally agreed upon.

**A study by Elbur and Alharthi, (2017)** titled "Self-management and control of asthma among adult patients" found that over half of the participants with bronchial asthma had high level of education. This result could be explained by the fact that patients with lesser educational backgrounds may have trouble to understanding the key ideas of health education. Moreover, they don't have

many possibilities to learn about the disease and its treatment. This finding should be considered when creating future educational interventions to improve the disease prognosis for patients with lower educational attainment.

Additionally, these results were refused by **Abo El-Fadl & Sheta (2019),** who found that over two thirds of patients with bronchial asthma were illiterate in their study on the "Effect of an Educational Program Regarding Self-Care Strategies for Patients with Bronchial Asthma on Their Knowledge and Practice."

The results of the study show that those with BA are more likely to live in urban areas than in rural ones. According to a study by **Ibrahim et al. (2019),** "Effect of Self-Management Program on Knowledge Practice, and Self Efficacy" revealed that urban dwellers had a higher notification rate than those living in rural areas. This suggests that urban populations are more vulnerable to BA because of population density, and that outdoor pollution may be a significant contributing factor to these occurrences. Compared to rural areas, the outdoor air in metropolitan areas contains higher concentrations of dangerous gas and fine particulate matter.

The results of the study done by **Bayomi (2018)** regarding the "Effect of Nursing Intervention Program on Nurses Knowledge, Practices and Patients Outcome with Bronchial Asthma" were in conflict with the findings of the study, which revealed that over seventy five percent of the participants were from rural areas.

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

The bulk of the cohort under research, as per the current study, smoked cigarettes, with daily smoking rates ranging from one to two packs. More than half of the study participants were active smokers who smoked more than two packs of cigarettes per day, according to a **study** by **Mishra et al. (2017)** regarding the "Role of Adult Asthma Education in Improving Asthma Control and Reducing Emergency Room Utilization".

Additionally, **Barrie (2020),** who carried out research on "Risk Factors that Predict Asthma Among Adult, Foreign-Born African Americans in California,"didnot found statistically significant correlation between tobacco use and asthma. Most patients in this study had allergies to particular foods, such fish and eggs, according to the study's findings. This could be the consequence of the bronchi increased histamine sensitivity, which occurred immediately after consuming specific foods. This result supported by **Abo El-Fadle & Sheta (2019)** that certain meals may aggravate asthma.

A patient's demands and health are mostly determined by the length of their BA disease, which may have an effect on their quality of life. In this study, more than one-third of the patients had bronchial asthma for more than five years. This might occur from the chronic nature of the disease condition. This was consistent with the findings of **Gare, Godana, and Zewdu (2020),** who discovered that the sickness lasted for five years. These findings, however, were at odds with those of **Bayomi (2018),** who claimed that most of the study group had bronchial asthma for over ten years.

The two biggest causes for asthma episodes that patients mentioned are exposure to cold and dust from dwellings, according to the current study. In keeping with this, study by **Dharmage, Perret, and Custovic, (2019)**titled

"Epidemiology of Asthma in children and Adults" established that the most common risk factors for an attack were house dust, cigarette smoking, respiratory virus infections, and pollen allergens. The results showed that over two thirds of the patients in the study had inadequate knowledge about bronchial asthma and self-care management. This speaks to the patients' understanding of asthma and how to manage their own care.

This ignorance might be caused by the lack of educational programs and resources on the disease and its consequences. This outcome was very similar to that of **Roach & Bhaskaranand (2019),** who claimed that a well-designed course on asthma care is an efficient approach to increase public health awareness and confidence with asthma. The findings of a study by **Gare et al. (2020)** titled "Knowledge, Attitude, and Practice Assessment of Adult Asthmatic Patients towards Pharmacotherapy of Asthma at Jimma University Specialized Hospital" also ran counter to these findings, as the study revealed that misconceptions regarding asthma are common and asthma patients have low knowledge of the disease. Strategies to increase understanding and awareness about the illness are needed to improve disease management.

Regarding the general understanding of bronchial asthma, the current study's findings indicate that around more than two thirds of patients of patients lacked sufficient knowledge related to effectively manage of bronchial asthma. It supports the findings of **Elbur & Alharthi (2017),** who said that overall, patients' responses to the asthma self- care management revealed notable deficiencies in their knowledge, the roles played by various medications, and how to prevent asthma attacks. The present study's findings found that the patients' awareness about proper home hygiene was insufficient. The

study's conclusion supported the assertion made by **Ibrahim et al. (2019)** that all the patients' total knowledge was unsatisfactory regarding environmental control.

Regarding the asthma practices of the patients, the current study's findings demonstrated that, although most of the sample under investigation lacked practice in all areas of asthma and self-care management, over one fourth of them had sufficient experience related a metered dose inhaler (MDI) with Spacer. The low quality of treatment may be caused by hospital doctors' frequent overwork and lack of time for each patient. This finding is consistent with a study by **Hassan et al. (2021)** on the Buteyko Breathing Technique: According to "The Golden Way for Controlling Asthma," asthma self-management is low in many countries in terms of both knowledge and practices. of asthma patients), Metered Dose Inhaler these. Moreover, with reference to the self-learning package's inhaler practice

Regarding the relationship between the sociodemographic characteristics of the research subjects and the overall knowledge score, the results of this study showed that there was no statistically significant relationship found between both male and female. However, there were a statistically significant associations found between knowledge and patients demographic characteristics, as well as statistically significant differences between patients' total levels of knowledge, occupation, and number of family members. These findings suggest that educated patients have higher knowledge scores. This finding may be explained by the increased likelihood of insufficient knowledge among those with low earnings, no employment, and insufficient education. Therefore, higher education leads to better careers, sufficient income, and improved health.

The findings aligned with a study by Madhushani & Subasinghe (2016) titled "Knowledge Attitudes and Practices of Asthma: Does It Associate with Demographic Factors of Adult Patients?" The study found that a number of studies have demonstrated a relationship between patients' education and their comprehension of asthma, with a higher education level being associated with more knowledge. The findings of this study indicate how certain variables in the study group and overall practice relate to one another. The total practice level and educational level of the patients differed statistically considerably ($p<0.001$). Furthermore, there was a statistically significant difference in the age, employment, and total level of practice of the patients at $P <0.05$. Thus, the educated patients, who are between the ages of 30 and 40, have a high practice score. In contrast, Barrie (2020) disapproved of these results, claiming that no significant relationships were seen between the study factors of age, education, residence, and duration of illness and asthma. Regarding the association between total knowledge and total practice, the current study's findings showed a very statistically significant relationship (p-value <0.001) between the total knowledge score and the total practice score. **Nguyen, Huynh, and Chavannes (2018)** found a positive correlation between asthma self-management and asthma control practices, which further validated this conclusion.

## Conclusion

The current study's results found the following conclusions: The knowledge, practice, and demographic data of the study participants were shown to be positively correlated. About two thirds of the patients did not know enough about managing their bronchial asthma and self-care, and more than two thirds of them did not practice enough.

## Recommendation

- A periodic educational program should be provided for patients and their family members to prevent the occurrence of complications and improve patients' knowledge, practice, and self-care strategies.
- Nursing educators and clinical facilitators must incorporate strategies regarding asthma self-care management into the ICUs, and chest departments and use learning opportunities.
- Developing a simplified and comprehensive booklet including basic information about asthma self-care management for patients.

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