

Effect of Implementing Educational Guidelines on Knowledge, Practice and Self-care Management of Patient with Bronchial Asthma

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Abstract:

Background: Bronchial asthma is reversible and diffuse airway inflammation. The inflammation leads to obstruction due to vascular congestion, mucosal edema, reducing the airway diameter and contraction of the bronchial smooth muscle that encircles the airways (bronchospasm), which causing further narrowing. **Aim of the study:** This study aimed to evaluate the effect of implementing educational guidelines on knowledge, practice and self-care management of patient with Bronchial Asthma. **Research design:** A Quasi-experimental research design. **Setting:** The study was carried out in the chest department at Benha University Hospital. **Subjects:** A purposive sample of (92 patients) undergoing bronchial asthma was recruited. **Tools of data collection:** Three tools were utilized: **Tool (I):** Patient structured interview questionnaire, **Tool (II):** Observational checklist for patients and **Tool (III):** Asthma Self-Management Questionnaire. **Results:** There was a significant improvement in total patients' knowledge score from (91.1%) unsatisfactory patients' knowledge score pre-educational guidelines implementation to (88.9%) and (83.3%) satisfactory patients' knowledge score post and follow-up of educational guidelines implementation. Also, there was a significant improvement in total patients' practices scores regarding bronchial asthma care from (90.0%) incompetent practice pre-educational guidelines implementation to (86.7%) and (80.0%) competent practice post and follow-up of educational guidelines implementation. Additionally, there was a significant improvement in total patients' self-care management from (86.6%) poor self-management pre-educational guidelines implementation to (88.9%) and (77.8%) good self-management post and follow-up of educational guidelines implementation. **Conclusion:** The educational guidelines were effective in improving patient's knowledge, practice and self-care management. **Recommendations:** Integrating counseling services into asthma clinics or healthcare settings to address the unique challenges faced by patients.

Keywords: Bronchial Asthma, Educational Guidelines, Knowledge, Patient, Practice, Self-care Management

Introduction:

Bronchial asthma is chronic inflammatory disease of airways which develops under the allergens influence “Triggers” associated with bronchial hyper responsiveness and reversible obstruction manifested by attack of dyspnea, breathlessness, cough, wheezing, chest tightness, together with variable expiratory air flow limitation. Asthma mainly depends on severity and type of asthma. It affected 1-18% of population at different countries suffering from air pollution (Savin et al., 2023).

When the patient exposed to triggers of asthma air passages of the lungs to swell and be narrow with accumulation of mucus plug so that the patient can feel unable to breathe. Triggers of asthma classified into indoor allergens as

cockroaches, mites, dust and cigarettes smoking. while outdoor allergens represented in sand, fumes, strong smells chemicals storms, exercise in cold weather, low humidity, occupational sensitizers as chemicals and dusts in work environment. In addition to, viral or bacterial infection to respiratory system as pneumonia or common flu may induce asthma occurrence. Also food additives, drugs as aspirin and bet al blockers and stress is considered trigger of asthma (Chipps et al., 2023).

Types of asthma can be different, which are allergic and non-allergic asthma. Allergic asthma (extrinsic) mainly occurs in persons with history of allergic reaction “heredity” as high fever, dermatitis, eczema and allergic rhinitis. It can be triggered by pollens or dander, dust, mites,

smoking, cold weather, respiratory infection as common cold flu. It also called seasonal asthma which commonly occurs in spring “flowering plants” or in Autumn (**Kawamatawong et al., 2021**).

Non-allergic asthma (intrinsic) mainly triggered by stressor anxiety, smoking, direct contact with chemical substances, cleansing agents, irritant of air and wood smoke, room deodorizing and perfumes. It usually appears later and more common in female. It is very hard to treat. Treatment depends upon restriction of irritants (**Klain et al., 2022**).

Nocturnal asthma mainly takes place at early hours of night which is common among allergies and non-allergic asthma patients and may cause deaths during sleep if not treated well. In addition, Exercise induced asthma occurs during activity in cold and dry weather its Symptoms tends to disappear within 20-30 minutes after exercise stoppage. In addition to status asthmaticus considered sever type of asthma that may cause respiratory distress or apnea (stopping of breathing) (**Pinyochotiwong et al., 2021**).

Diagnosis of asthma: History of patient and physical examination can determine whether symptoms of recurrent episodes of airflow obstruction or airway hyper-responsiveness are present and worsening of symptoms at night or in the presence of environmental stimuli, use spirometry to determine whether airflow obstruction is at least partially reversible after use of a bronchodilator, assessing response to treatment after a change in medication and exclude alternative diagnoses such as chronic obstructive pulmonary disease, chronic allergic rhinitis, congestive heart failure, and other causes e.g., foreign body in trachea (**Arneftis et al., 2023**).

Self-management is based on the concept of self-efficacy, that is, an individual's belief or confidence in the ability to make decisions and engage in behaviors that successfully manage their chronic condition. Asthma self-management refers to what patients do to monitor/control their symptoms and to prevent exacerbations; these factors should be addressed in patient education (**McClatchey et al., 2023**).

Significance of the study:

Asthma is one of chronic respiratory diseases worldwide. In Egypt, asthma is estimated to be

8.2% and 6.7% among adults respectively, being more predominant in males than females (**Alavinezhad & Boskabady, 2018**). In Benha University Hospital documented the admitted number of patients who admitted with bronchial asthma ranged about 110 patients in 2020 and increased into 130 patients in 2021 in Chest department at Benha University Hospital (**Benha Statistics Office, 2021**).

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 (**Eissa et al., 2020**). Educating the patient is a necessary part of giving service with the increase in numbers of population with the chronic diseases. Asthma is one of chronic respiratory diseases worldwide (**Clarke et al., 2020**). So, the application of educational guidelines of bronchial asthma has become even more necessary than before because these patients need follow up continuously.

Aim of the study:

This study aimed to evaluate the effect of implementing educational guidelines on knowledge, practice and self-care management of patient with Bronchial Asthma.

Research hypotheses:

H1: Patient' knowledge score regarding bronchial asthma would be significantly higher after implementation of the educational guidelines than before.

H2: Patient' practice level regarding bronchial asthma care would be significantly improved after implementation of the educational guidelines than before.

H3: Patient' self-management level regarding bronchial asthma care would be significantly improved after implementation of the educational guidelines than before.

H4: There would be significant positive correlation between patient's knowledge, practice and self-management regarding bronchial asthma.

Subject and Method:

Research design:

A Quasi-experimental research design (pre-posttest) was utilized.

Setting:

This study was conducted in Chest department at Benha University Hospital.

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Study subjects:

A purposive sample of (92) patients from the setting mentioned above was recruited. The sample size was calculated based on the previous year's census report of admission in chest department at Benha University Hospital, utilizing the following formula (Yamane, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= sample size (92)

Total number of sample was 92

N= total population (120)

e= margin error (0.05)

Tools for data collection:

Three tools were utilized:

Tool I- A Structured interviewing questionnaire:

This tool was developed by the researchers after reviewing recent related literature (Mohamed & Karamah, 2015) and (Hasan & Mahameed, 2020). It was designed to assess patient' knowledge regarding bronchial asthma care. It consists of two parts:

Part one: Socio demographic data of the studied patients as: age, sex, educational level, exposure to smoke, residence, medical, family history.

Part two: Patient' knowledge regarding bronchial asthma care: It comprised 13 sub items as definition of bronchial asthma, ,causes of bronchial asthma, symptoms and signs accompanying the patient, diagnosis of bronchial asthma, factors that lead to complications of bronchial asthma, complications of bronchial asthma, on-drug treatment methods for asthma, methods of preventing bronchial asthma, drugs used to treat bronchial asthma, the nutritional system necessary for a patient with bronchial asthma, precautions that you must follow when exercising, factors that trigger an asthma attack and types of bronchial asthma.

Scoring system: Each correct answer was given one score and zero score for wrong answer. The total scoring system categorized as the following:

- Satisfactory level of knowledge: more than or equal 75% of total score
- Unsatisfactory level of knowledge: below 75% of total score.

Tool II: Practices observational checklist for patient:

This tool was developed by the researchers after reviewing recent related literature (Asker et al., 2015) and (Farahat et al., 2019). It was used to assess level of patient' practices regarding bronchial asthma care. **It was divided into 6 procedures as follows:**

- **Procedure one:** Breathing exercise which has 21 steps.
- **Procedure two:** Technique of using inhaler which has 11 steps.
- **Procedure three:** Technique of use nebulizer which has 11steps.
- **Procedure four:** Positioning which has 5 steps.
- **Procedure five:** Use of incentive spirometer which has 9 steps.
- **Procedure six:** Peak flow meter use which has 9 steps.

Scoring system: One mark for each step correctly done and zero mark for incorrectly done or not done. The total score ranged from 0 to 66 scores. The patients' earned score was summed, converted into percent and categorized into two levels:

- Competent: more than or equal 85% of total score.
- Incompetent below 85% of total score.

Tool III: Asthma Self-Management Questionnaire (ASMQ):

This tool was developed by (Nguyen et al., 2018) to assess patients' level self-care management. It comprises 16 multiple choice questions which measure knowledge of preventive strategies, correct inhaler use, medications (rescue and controller), and use of peak flow meters. It included knowledge of preventive strategies, correct inhaler use, medications (rescue and controller) and use of peak flow meters.

Scoring system:

One point was assigned to each preferred response as (when using your inhaler, you should inhale slowly. For people with asthma, exercise can help improve lung capacity). All points was summed to generate the raw score range 1—16, the raw score was transformed to range from 0 to 100, with higher scores indicating more knowledge of asthma self-management. Knowledge was categorized into the following

levels:

- Good (transformed ASMQ >75).
- Adequate (transformed ASMQ 50—75).
- Poor (transformed ASMQ<50)

Administrative design:

Approval to carry out this study was obtained by submission an official letter from the Dean of the Faculty of Nursing at Benha University to director of Benha University Hospital. This letter explains and clarifies the aim and objectives of the study to obtain permission to conduct the study. The agreement and the aim of the study were explained to each subject. Besides, personal communication was done with nurses and physicians to explain the purpose of the study and gain their best possible cooperation.

Content validity and reliability:

A panel of five specialists from the medical-surgical nursing department at Benha University's Faculty of Nursing undertook the validation process for the instruments content. Adjustments were implemented based on the panel's evaluation of the content's suitability, comprehensiveness, and sentence clarity. For evaluating reliability, Cronbach's alpha test was applied, yielding values of 0.866 for the knowledge regarding bronchial asthma and 0.817 practices observational checklist for patient and 0.904 for Asthma Self-Management Questionnaire.

Ethical considerations:

After securing initial authorization from the Scientific Research and Ethics Committee of the Faculty of Nursing at Benha University (code no. REC-MS-NP 19), (Date 7/10/2023), this research was carried out. Subsequently, formal endorsements were obtained from the head of the chest department at Benha University Hospital and the dean of the Faculty of Nursing. Throughout the study, meticulous attention was given to ethical considerations. All participants were informed about the study's aims, objectives, and their entitlement to discontinue participation at any point. Verbal consent was additionally obtained from the participating patients. Researchers ensured the confidentiality and anonymity of all subjects.

Pilot study:

A pilot study was conducted on 10% of studied patients in order to test the clarity and applicability of the tool and the educational

guidelines, also to estimate the time required for each tool to be filled by the researchers as well as to identify any possible obstacles that may hinder data collection. Based on the result of the pilot study, the necessary modifications were done for more applicable tool to collect data. The patients who were selected for the pilot study were excluded from study subjects.

Field work:

Data collection of the study was carried out through six months, from the beginning of July 2023 to the end December 2023. The researchers attended the study setting in the morning and afternoon shifts for 3days weekly. The study was conducted through four phases:

1- Assessment phase (Baseline data):

Once the aim of the study was explained to the patient in simple words, each patient was individually interviewed using structured questionnaire concerning socio-demographic and medical history assessment and their knowledge regarding bronchial asthma (tool I).

In addition, the patients were asked about using inhaler, nebulizer, peak flow meter, Incentive spirometer, positions and breathing exercises (tool II). Assessing patients' knowledge regarding self-care management measures knowledge of preventive strategies, correct inhaler use, medications (rescue and controller), and use of peak flow meters (tool III).

2-Planning phase:

Once the initial assessment finished, an asthma care was planned and designed based on patient's condition needs. The researchers set up sessions covering general and specific objectives. The educational guidelines were developed from recent literatures, revised and modified based on experts' comments, in order to be implemented using various methods. The educational guidelines resources and facilities were allocated (printed material and location or site of sessions that best serve the learner). The researchers' determined the timetable of sessions with the patients for starting sessions.

3-Implementation phase:

The educational guidelines sessions were implemented in the form of two sessions. The duration of each session took time from 30 to 45 minutes to each patient included in each session. The researchers was available 3 days per week in chest department in the morning in Benha

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University Hospital. Motivation, problem solving and reinforcement techniques were used to enhance an active participation of the patient in the educational sessions.

Session (1): Theoretical session

Explanation of the reasons and importance of the program and give an explanation about: anatomy of respiratory system, definition of bronchial asthma, causes of asthma, symptoms of asthma, types of asthma, complication of asthma, treatment of asthma and self-care management for patient of asthma.

Session (2): Practical session

Second session included applying using nebulizer, inhaler, cough and breathing exercises using incentive spirometer and correct positions enhancing breathing.

Different teaching and learning methods were used during the sessions which included discussion, demonstration and re-demonstration; instructional media included mobile video and printing handling pictures which presented in clear and concise form.

4- Evaluation phase:

It aimed to evaluate the effect of educational guidelines on knowledge, practice and self-management of patients with asthma after 3 months and follow up after 1 month.

Statistical analysis:

Data were fed to computer and analyzed using statistical program social science (SPSS) soft were package version 20.0 to evaluate the patients under the study. The statistical analysis included number (N), mean and stander deviations (SD), percentage %, chi square (χ^2), ANOVA test. For all statistical tests done the threshold of significance was fixed at the 5% level (Pearson chi square). A Pearson chi-square >0.05 indicates no significant result, when the Pearson chi-square <0.05 indicates a significant result and the Pearson chi-square is the degree of significance.

Results:

Table (1): Displays the socio-demographic characteristics of patients with bronchial asthma. The table shows that shows that, 44.4% of the studied patients aged between (40-<50) years old, with mean age of (40.22 ± 6.34) years; males were more prevalent and constituted near to two thirds of the studied patients. Regarding the educational level, one third of them have secondary education. Regarding crowding index nearly half of them have >2 crowding rate.

Table (2): Displays the patients' medical history. The table shows that 40.0% of the studied patients had asthma since one to three years and 86.7% of them hospitalized due to illness in last winter

Table (3): Shows that, there was a significant improvement in total patients' knowledge score at post phase of educational guidelines implementation with a highly statistically significant difference at ($P = < 0.001$) between pre, post and follow up implementation of an educational program.

Figure (1): Shows that, (10.0%) of the studied patients had competent level of practices regarding bronchial asthma care at pre educational guidelines implementation phase. While (86.7%, 80.0%) of them had competent practice level at post and follow up phases of implementation of the educational guidelines.

Figure (2): Shows that, (6.7%) of the studied patients had good level of total self-care management pre-implementation of the educational guidelines. While it changed to (88.9%) post implementation of the educational guidelines and (77.8%) after three months of educational guidelines of implementation with statistical significance difference at ($P = < 0.001$).

Table (4): Shows that there was a highly a significant statistical positive correlation between patients' knowledge, practice and self-care management regarding bronchial asthma at pre, post and follow-up phases of the educational guidelines.

Table (1): frequency and percentage distribution of the studied patients according to their socio demographic data (n=92).

Socio demographic data	No.	%
Age (Years)		
20 -<30	7	7.8
30-<40	37	41.1
40 -< 50	40	44.4
50 — 60	6	6.7
Mean ± SD 40.22 ± 6.34		
Gender		
Male	57	63.3
Female	33	36.7
Education level		
Illiterate	18	20.0
Read and write	27	30.0
Secondary education	30	33.3
High education	15	16.7
Occupation		
Employee	25	27.8
Housewife	30	33.3
Craft work	29	32.2
A worker in a carpet or textile factory, bakeries, mills or farms	6	6.7
Crowding index		
<1	18	20.0
1-2	32	35.6
>2	40	44.4

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Table (2): Frequency and percentage distribution of the studied patients medical data (n=92).

Items	No.	%
Duration of disease		
< 1 year	32	35.6
1-<3 years	36	40.0
3 -< 5 years	18	20.0
≥ 5years	4	4.4
Mean ± SD 2.78±1.01		
The average number of hospitalizations due to illness during last winter		
One time	78	86.7
Twice	11	12.2
Three times or more	1	1.1
How many times did the bronchial asthma occur last winter?		
One time	77	85.6
Twice or more	13	14.4

Table (3): Comparison between the studied patients regarding to their total knowledge regarding bronchial asthma at pre, post and follow-up phases of educational guidelines (n=92).

Levels of total knowledge	Pre-intervention		Post-intervention		Follow-up		(p ₁)	(p ₂)	(p ₃)
	No.	%	No.	%	No.	%			
Satisfactory	8	8.9	80	88.9	75	83.3	X ² =115.2 P=0.000**	X ² =1.161 P=0.281	Fr =150.1 p=0.000**
Unsatisfactory	82	91.1	10	11.1	15	16.7			
Mean ± SD	2.18±2.10		11.17±2.75		10.48±2.34		t=20.34 P=0.000**	t=1.806 p=0.073	F=282.9 P=0.000**

X²: Chi-square test. Fr= Friedman test t= Paired t.test. F= ANOVA Test. p= p-value

No significant at p >0.05. * Significant at p < 0.05. **Highly significant at p < 0.001.

P₁: p value for comparing between **pre and post** intervention.

P₂: p value for comparing between the in **post and Follow-up** intervention.

P₃: p value for comparing between the **three sessions**.

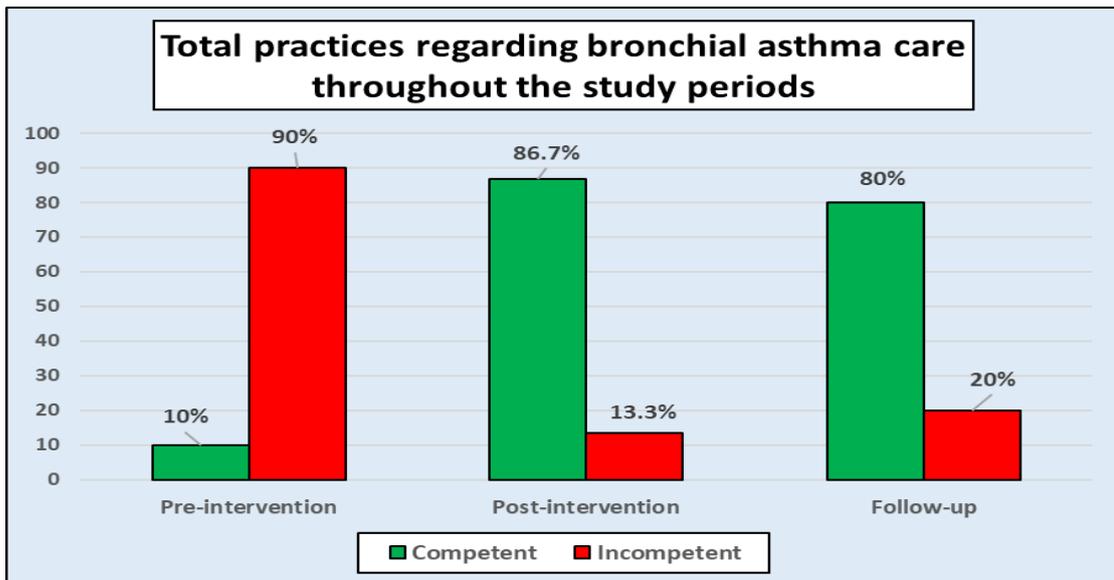


Figure (1): Total Percentage distribution of total patients' practices regarding bronchial asthma care at pre, post and follow-up phases of educational guidelines (n=92).

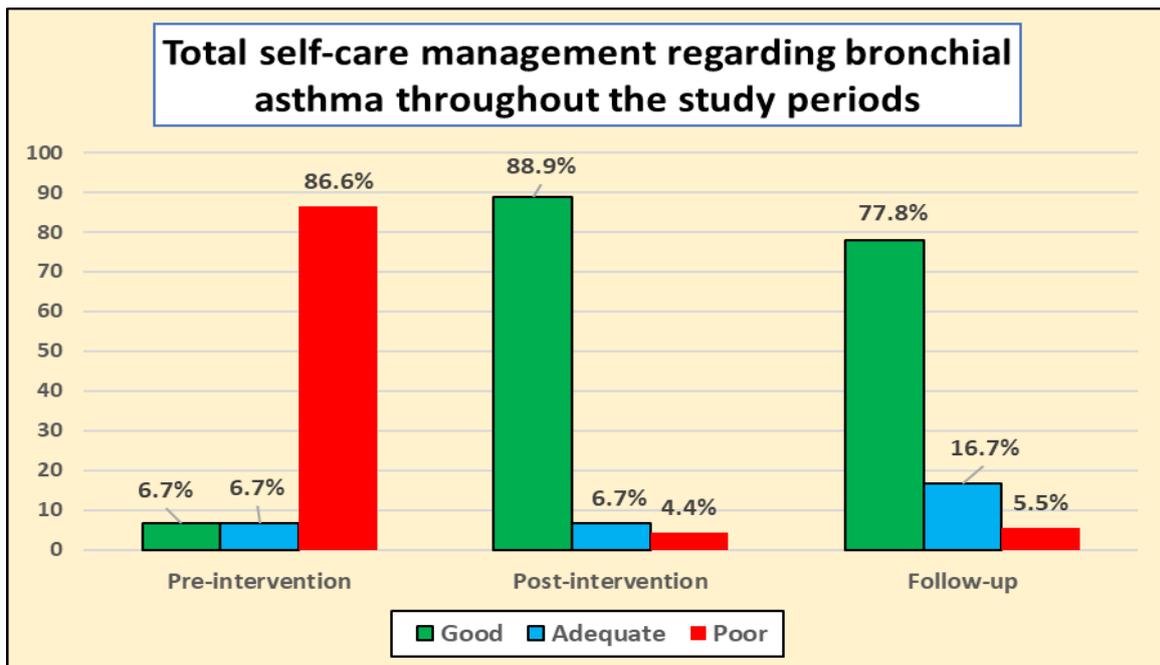


Figure (2): Total Percentage distribution of total patients' self-care management regarding bronchial asthma at pre, post and follow-up phases of educational guidelines (n=92).

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Table (4): Correlation between total patients knowledge, practice and self-care management regarding bronchial asthma at pre, post and follow-up phases of educational guidelines (n=92).

Variables		Total patients knowledge			Total patients self-care management		
		Pre-intervention	Post-intervention	Follow-up	Pre-intervention	Post-intervention	Follow-up
Total patients knowledge	r				0.827	0.796	0.678
	p				0.000**	0.000**	0.000**
Total patients practice	r	0.898	0.895	0.790	0.928	0.902	0.757
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**

Correlation is significant at the 0.01 level (2-tailed).

Discussion:

Bronchial asthma is a chronic respiratory condition that affects millions of individuals worldwide. Effective management of asthma relies not only on medical interventions but also on the knowledge, practice, and self-care management skills of patients. Patients who are well-informed about their condition and engage in proper self-care practices can achieve better asthma control, improved quality of life, and reduced healthcare utilization (**Talaat et al., 2023**). This study aimed to evaluate the effect of implementing educational guidelines on knowledge, practice and self-care management of patients with bronchial asthma.

Regarding socio demographic characteristics of the studied patients, the current study results showed that, less than a half of the studied patients were aged 40 < 50 years, with Mean age 40.22 ± 6.34 years and less than two thirds of them were males. This result is consistent with **Nguyen et al., (2018)** in a study entitled “Knowledge on self-management and levels of asthma control among adult patients in Ho Chi Minh City” which found that approximately half of the studied patients their age fall between 36-50 years old. Also, nearly two thirds of studied subjects were males.

Regarding the educational level, one third of them had secondary education. From the researchers’ point of view, this finding may be due to the wide portion of rural gave high

regards for education where there is no interest for education verifying that reasonable percent of studied patients had secondary and university education. On the same line **Al Elbur & Alharthi, (2017)** in a study entitled “Self-management and control of asthma among adult patients in King Faisal medical complex Taif, KSA”, who stated that the educational level of his study subjects was secondary education

Regarding the occupation, the current study revealed that, one third of studied patients were housewives. Also, more than half of them reside in rural areas. This result is in congruence with **Ali & Abou Elmaati, (2017)** who stated that more than half of studied patients were unemployed, but more than three quarters of them were resident in urban areas. From the researchers’ point of view that study setting is in a rural governorate as the majority of them are working at home in agricultural duties and were resident around Benha city and their high exposure to dust, animal dander and pollen.

Regarding crowding index less than half of them scored >2. Overcrowding is another risk factor for asthma among the study subjects **Alagamy et al., (2019)** in a study entitled “The Effect of Bronchial Asthma Self-Care Management Model on Older Adults Coping with their Daily Living Activities” who revealed that, more than three quarters of patients were lived with three to five family members or relatives in the same home. Also,

this is supported by **Baker et al., (2021)** in a study entitled “Infectious diseases attributed to household crowding in New Zealand” and indicated that in which household crowding increases the risk of infectious diseases spreading such as asthma.

Regarding past and present medical history of studied patients, in relation to duration of disease less than half of studied patients suffered the disease 1-<3 years, with 2.78 ± 1.01 mean years. Concerning the average number of hospitalizations due to illness during last winter the majority of them admitted one time, also the majority of them had one time occurrence of bronchial asthma occur last winter, and the majority of them wake up from sleep due to bronchial asthma one time.

This is in agreement with **Talaat et al., (2023)** in a study entitled “Effect of Educational Program on Patients with Bronchial Asthma Regarding Self-Care Management” who indicated that more than one-third of participants were asthmatic for 1-3 years.

Regarding patients' knowledge about bronchial asthma at pre, post and follow-up implementation of educational guideline shows that the majority of studied patients had unsatisfactory knowledge pre intervention, but the majority of them had satisfactory knowledge post intervention, while most of them had satisfactory knowledge follow up the intervention.

From the researchers' point of view this could be due to the shortage of awareness of guidelines and data sources concerning bronchial asthma. The improvement in patient knowledge about bronchial asthma in post and follow up intervention than pre intervention was due to implementation of educational guidelines regarding bronchial asthma which answering the hypothesis one: which is patient' knowledge score regarding bronchial asthma will be significantly higher after implementation of the educational guidelines of bronchial asthma than before.

This is in agreement with **Kumar et al., (2019)** supports the current study results as sampled subjects had poor knowledge on bronchial asthma. **Madhushan & Subasinghe (2016)** in a study “Knowledge attitudes and practices of asthma” established that only 34%

of their patients had good knowledge of asthma.

Additionally, **Talaat et al., (2023)** indicated that all the patients had unsatisfactory total knowledge at pre intervention of the program. After the implementation of the program, patients' knowledge demonstrated significant improvement, which continued during the follow-up phase with no remarkable decrease in the knowledge level.

Regarding total patients' practice, the majority of them had incompetent practice pre intervention, post and follow up intervention the majority of them had competent practice. There was a statistical difference in patients total practices regarding bronchial asthma care pre, post and follow up intervention and between the three phases

From the researchers' point of view, the improvement in patient practice about bronchial asthma in post and follow up intervention than pre intervention was due to demonstration and re-demonstration of educational guidelines regarding practice of asthmatic patient which answering the hypothesis two: patient' practice level regarding bronchial asthma care will be significantly improved after implementation of the educational guidelines than before intervention.

These results agreed with **Eissa et al., (2020)** who reported that that there was significant improvement in technique of inhaler use and breathing exercise.

Additionally, **Shahin & Abdelkadr, (2019)** stated that there is a statistically significant difference between all phases of the program in all items in practice technique. And this may be due to the patient of bronchial asthma using nebulizer to control severe asthma during an acute exacerbation.

Regarding patients self-care management pre, post and follow-up implementation of educational guideline shows that the majority of studied patient had good practice regarding self-care management items as the effect is taking two prescribed puffs from the inhaler twice a day, the meaning of not experiencing symptoms of a chest attack post intervention (92.2%), while, the majority of them had good practice regarding bronchial asthma attacks, what should asthma patients do about exercise, and action if you take a dose of steroid tablets for a week

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follow up intervention.

From the researchers' point of view this may be due to the effective training of asthmatic patients on the use of inhaler techniques and achieving better control of asthma symptoms during implementation of the educational guidelines. The improvement in patient self-care management about bronchial asthma in post and follow up intervention than pre intervention which answering the third hypothesis: patient' self-management level regarding bronchial asthma care will be significantly improved after implementation of the educational guidelines than before.

On the same line **Shahin & Abdelkadr, (2019)** stated that there was a statistically significant difference between all phases of the program about self-care management of asthma. Additionally, on the same line **Alagamy et al., (2019)** in a study entitled "The Effect of Bronchial Asthma Self-Care Management Model on Older Adults" which revealed that there was highly statistically significant progression in the level of self-care knowledge of the study subjects post the implementation of the intended asthma self-care management model in relation to all aspects of asthma in adults.

Concerning correlation between total patients knowledge, practice and self-care management regarding bronchial asthma at pre, post and follow-up implementation of educational guideline the current study result shows that there was a highly statistically significant correlation between total patients knowledge, practice and self-care management throughout all phases of intervention.

From the researchers point of view these correlations are statistically significant, meaning that improving patients' knowledge, practice through implementation of educational guidelines which in turn led to improvements in their self-management behavior, which is answering hypothesis 4: there will be significant correlation between patient' knowledge, practice and self-management regarding bronchial asthma. Overall, these findings are encouraging, and that the intervention was successful in achieving its goals.

On the same line, **Mohamed & Mohamed, (2023)** in a study entitled "Effect of training program regarding knowledge and self-care practices on patients with bronchial asthma" reported that there is a strong correlation between patients' knowledge and behavior scores both before and after the intervention program, as well as a strong correlation between patients' practice scores and behavior scores before and after the program.

This agrees with the **Ghozali, & Urrohmah, (2023)** who found that, most participants had a low level of knowledge, followed by a good level of knowledge. Regarding the levels of asthma control, followed by partially controlled, and controlled after intervention. In terms of the relationship between two variables patient knowledge of self-management and asthma self-management levels, the results highlight a relationship between the patient's knowledge of self-management and levels of asthma.

On the same line **El-Fadl & Sheta (2019)** in a study entitled "Effect of an Educational Program Regarding Self-Care Strategies for Patients with Bronchial Asthma on Their Knowledge and Practice" revealed that there is high statistically significant correlation between patients' knowledge and self-care management.

Conclusion:

Based on the findings of the current study, it can be concluded that, patients' knowledge, practice and self-care management had significantly improved post and follow up implementation of the educational guidelines regarding bronchial asthma.

Recommendations:

- Implementing regular follow-up sessions with asthma patients to monitor their progress in knowledge, practice, and self- management.
- Integrating counseling services into asthma clinics or healthcare settings to address the unique challenges faced by patients.
- Further studies should be conducted to explore the effectiveness of multifaceted interventions for asthma patients.
- Replication of the study on larger probability sample from different geographical distribution for generalization of results.

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تأثير تطبيق الإرشادات التعليمية على المعرفة والممارسة وإدارة الرعاية الذاتية لمريض الربو القصبي

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الربو القصبي هو التهاب متقلب ومنتشر في مجرى الهواء. يؤدي الالتهاب إلى انسداد بسبب احتقان الأوعية الدموية، والوذمة المخاطية، وتقليل قطر مجرى الهواء وتقلص العضلات الملساء القصبية التي تطوق المسالك الهوائية (تشنج قصبي)، مما يسبب المزيد من التضيق. **الهدف من الدراسة:** هدفت هذه الدراسة الي تقييم تأثير تنفيذ الإرشادات التعليمية على المعرفة والممارسة والعناية الذاتية للمرضى الذين يعانون من الربو الشعبى. **تصميم البحث:** تم استخدام تصميم شبه التجريبي لإجراء الدراسة. **مكان البحث:** أجريت هذه الدراسة في قسم الصدر بمستشفى جامعة بنها. **عينة الدراسة:** تم استخدام عينة غرضية (٩٢) من المرضى الذين يتلقون العلاج في المكان المذكور أعلاه. **أدوات جمع البيانات:** تم استخدام ثلاث أدوات: الأداة (١): استبيان المقابلة المنظمة للمريض، الأداة (٢): قائمة المراجعة الرصدية للمرضى والأداة (٣): استبيان الإدارة الذاتية للربو. **النتائج:** و قد أسفرت النتائج على أن المعرفة الإجمالية، كان (٩١٪) من المرضى الذين تم دراستهم يمتلكون معرفة غير مرضية قبل تطبيق الإرشادات التعليمية ، وكانت (٩٨,٨٪) منهم يمتلكون معرفة مرضية بعد تطبيق الإرشادات التعليمية ، بينما كانت (٨٣,٣٪) منهم يمتلكون معرفة مرضية بعد متابعة تطبيق الإرشادات التعليمية. بالنسبة لممارسات المرضى الإجمالية كانت (٩٠٪) منهم يمتلكون ممارسة غير مرضية قبل تطبيق الإرشادات التعليمية وكانت (٨٦,٧٪) منهم يمتلكون ممارسة مرضية بعد تطبيق الإرشادات التعليمية ، وكانت (٨٠٪) منهم يمتلكون ممارسة مرضية بعد متابعة تطبيق الإرشادات التعليمية بالنسبة لمستوى إدارة المرضى لأنفسهم، كان (٨٦,٦٪) من المرضى الذين تم دراستهم يمتلكون مستوى إدارة سيء قبل تطبيق الإرشادات التعليمية ، وكان (٨٨,٩٪) منهم يمتلكون مستوى جيد لإدارة أنفسهم بعد تطبيق الإرشادات التعليمية ، بينما كانت (٧٧,٨٪) منهم يمتلكون مستوى جيد لإدارة أنفسهم بعد متابعة تطبيق الإرشادات التعليمية. **الاستنتاج:** كانت المبادئ التوجيهية التعليمية فعالة في تحسين معرفة المريض وممارسته وإدارة الرعاية الذاتية. **التوصيات:** دمج الخدمات الاستشارية في عيادات الربو أو أماكن الرعاية الصحية لمواجهة التحديات الفريدة التي يواجهها المرضى.