Effect of an Educational Program Regarding Self-Care Management Behaviors for Patients with Bronchial Asthma

Dina El-saka Ibrahim[1], Eman Saleh Shahin[2], Hayat Mohamed Abdelkadr[3]

Demonstrator of Medical Surgical Nursing Department [1]; Assist.Prof. of Medical Surgical Nursing Department [2]; Lecturer of Medical Surgical Nursing Department [3]; Faculty of Nursing - Port Said University

ABSTRACT

Background: Bronchial asthma is a highly prevalent chronic respiratory disease which affects more than 300 million persons all over the world with a mortality rate about 250,000 annually. Improvement of clinical outcomes by effective utilization of self-management behaviors has been studied for patients with bronchial asthma. *Aim*: This study aimed to evaluate the effect of an educational program regarding self-care management behaviors for patients with bronchial asthma. *Subject and method*: A Quasi-experimental design was used in outpatient clinics at Al-masah El-bahary hospital. A purposive sample of 103 asthmatic patients was included in the study. Data was collected through Asthma self-care management behaviors for adults questionnaire. *Results*: there was a statistically significant improvement in all dimensions of asthma self-care management behaviors after the program implementation. Also improvement in total self-care management behaviors from (81.6%) uncontrolled behaviors pre-program to (49.5%) controlled behaviors post-program. *Conclusion:* the study results concluded that implementation of the asthma training program was associated with improvement in the use of medication, how to deal with asthma attacks, prevent a recurrent asthma attack, avoidance of the triggers for bronchial asthma, and the use of an inhaler. *Recommendation:* Promotion and enhancement of the self-care management to the patient through showing a picture about triggers, allowed foods, and follow up should be continued after termination of the treatment through the rehabilitation program.

Keywords: asthma, adult patient, self-management behaviors, educational program.

INTRODUCTION

Globally, asthma is ranked as the16th disease among the leading causes of years lived with disability and 28th among the leading causes of the burden of disease, as measured by disability-adjusted life years. From 2011 to 2013, 235–300 million people worldwide suffered from asthma which expected to increase up to reach 400 million in 2025 (***Ghaffari & Aarabi, 2013***).

Asthma is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and intensity. Asthma diagnosis requires the presence of more than one of the respiratory symptoms, worsening of the symptoms at night and exacerbation of the symptoms by a viral infection, exercise, allergens, changing weather or smoke (***Becerir et al., 2014***).

Moreover, the etiology of asthma is increasingly attributed to interactions between genetic susceptibility, host factors, and environmental exposures. These include environmental factors (air pollution, pollens, mold, and other aeroallergens, and weather), host factors (obesity, nutritional factors, infections, allergic sensitization), and genetic factors (***Pavord et al., 2018).***

Self-management is a term applied to any formalized patient education program aimed at teaching skills to optimally control the disease, behavior change, and coping with the disease. The continuum of self-management programs varies from written material only, to more intensive management, including exercise, self-management behaviors, and self-practice education *(**Ali, Abou-Elmaati, 2017).***

As asthma is a controllable disease, the goal of asthma management is to control the disease and allow patients to lead a normal and healthy life that controls the asthmatic attacks ***GINA, (2017).*** To achieve this, patients should use medications correctly and maintain controls for a considerable period of time. This might be achieved if patients receive adequate guidance on how to use medications and receive sufficient knowledge about the disease then provide some exercises about how to use some devices such as inhaler and nebulizer (***Elbur, Alharthi & Alharthi, 2017)***

Although asthma cannot be cured, appropriate management can control the asthma symptoms and enable people to enjoy a good quality of life. Short-term medications are used to relieve symptoms. Medications such as inhaled corticosteroids are needed to control the progression of severe asthma and reduce asthma exacerbation and deaths ***Elbur et al., (2017).***

While, long term goal of asthma education is to reduce asthma morbidity and mortality. Asthma deaths are a relatively rare end; for most asthmatics, the primary aims of education are to improve the quality of life, ability to function, and control of the disease *(Toro-linnehan, 2013).*

Significance of the study:

Based on a recent study finding in port-said city; bronchial asthma is a heterogeneous disease with noncompliance and uncontrolled causes of asthma with a percent of 55% of all study samples and also improper treatment in 32% of asthmatic patients *Farrag et al., (2016).* Therefore, there was a necessary need to design and provide an educational program to improve self-care management behaviors among asthmatic patients.

AIM OF STUDY:-

This study aimed to evaluate the effect of an educational program regarding self-care management behaviors for patients with bronchial asthma.

Research Hypotheses:

It is hypothesized that, an application of an educational program improved self-care management behaviors for patient of bronchial asthma.

SUBJECTS AND METHOD:-

-A quasi-experimental study design (pre and post-test) used in this study.

Setting:

-This study conducted in chest outpatient clinic in Al-masah El bahary hospital at Port-Said.

Subjects

-A Purposive sample from patients with bronchial asthma that was available within 6 months and accepted to participate in the current study according to:

Inclusion criteria:

1. Recently diagnosed with asthma (up to one year).

2. Adult patients free from chronic illnesses.

3. Adult patients free from any disability.

Exclusion criteria

1. Patients who had previously taken part in any asthma educational program.

Tools of data collection: The data of the present study was collected by:-

Tool I: Asthma structured interview questionnaire for adult's self-care management behaviors:-

This tool was developed by researcher based on reviewing the recent related literature (***Quaranta, 2013 & Ching, 2015***). It aimed to assess self-care management behaviors for patients with bronchial asthma. This tool was divided into two parts:

Part (I): This part was included Socio-demographic data:

These data ask about the basic and personal description for the subject that includes Patient Name, Age, Gender, Level of education, and Occupation.

Part (II): This part was included Patients general assessment:

A→ Environmental condition: included Number of a family member, Number of rooms, Ventilation, source of dust, smoke, waste, and garbage.

B→ Family history of disease: This part asked about asthma occurrence in the family with their past and present history of the prevalence of asthma.

C→ Present medical history: Present medical history included the duration of diagnosed bronchial asthma, symptoms, common time of an asthmatic attack, frequency of attack, seasonal of an asthma attack, Course of therapy.

Part (III): Adult's Self –management behaviors:

It was developed by the researcher. This tool aimed to assess self-care behavior for patient with bronchial asthma. This was consisting of 55 items divided into 7 dimensions namely Medication, Environment Control, Prevention from recurrent attack, Diet, Triggers, Coping with asthma, Action during Attack. Each statement response measured by two-item scale including (yes = 1) & (no = 0).

Scoring system

according to Desalu et al., (2012) divided into three categories:- self-management behaviors more than 80% means that controlled behaviors, between 60%-80% mean that partial behaviors, less than 60% mean that uncontrolled behaviors.

Tool (II): Asthma assessment checklist:

It was developed by Perry & Potter, (2015) & Williams & Hopper, (2015) & Wilkinson et al, (2016) aimed to assess self-care practice for patient with bronchial asthma. This was consisting of 2 techniques namely how to use a metered-dose inhaler and how to use the

nebulizer. Each statement response measured by two-item scale including (done = 1) & (not done = 0).

Scoring system:- according to Nguyen, Huynh& Chavannes, (2018) divided into three categories named Good practice more than 75%, Adequate practice between 50%-75% and Poor practice less than 50%.

Pilot Study:

A pilot study had been undertaken before starting the data collection phase. It was conducted on 10% of patients with bronchial asthma who meeting inclusion criteria. **Content Validity:**

Content validity was ascertained by a jury group of nine experts. Based on the jury recommendations corrections, addition and/ or omission of some items were done.

Reliability:

Cronbach's alpha test was used to test the tool reliability; the reliability of the questionnaire was 0.956, the following tables show the results of the reliability test for tools of data collection.

Field Work: Data were collected (from October 2018 to June 2019).

The program conducted in three phases:

Phase I: (assessment phase): the researcher started by identification of bronchial asthma patients who met the inclusion criteria of the study. Data were collected using a written questionnaire for each patient that was interviewed individually to fill in the questionnaire.

Phase II: (Implementation phase): The researcher was designed and provided an educational program regarding self-care management for patients with bronchial asthma. The educational program was applied to patients participated in the study (individual or small group ranged from 2 to 3 patients) in a clear and concise manner. The researcher visited a chest outpatient clinic twice-weekly (Saturday and Monday) in the morning shift from 9: am to 12: pm. The researcher applied for the program in one session that session was repeated for each individual patient with bronchial asthma. The session lasted for 30 to 40 minutes.

Phase III: (Evaluation): The program outcome was evaluated for patients with bronchial asthma immediately and after one month of implementation of the program.

Administrative design:

- An official letter was directed from the dean of Faculty of Nursing, Port-Said University to the study hospitals managers. Written permission to conduct the study was obtained

from the director of each setting and the managers of outpatient clinics of the selected hospitals after explaining the purpose of the study to gain their cooperation during the period of the study.

Ethical Consideration:

- Consent was obtained from patients after explanation of the purpose of the study confidentiality and privacy was assured.

- The researcher maintain an anonymity of subjects, were allowed to choose to participate or not and they have the right to withdrawal from the study at any time without penalty.

Statistical design:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 21, SPSS Inc. Chicago, IL, USA). For comparison between two means of parametric data, p value of t- test was calculated. For comparison between more than two means of parametric data used F value of ANOVA test. For comparison between two percentages of parametric data, p value of chi-square test was calculated. Correlation between variables was evaluated using Pearson's correlation coefficient (r). Significance was considered if p<0.05 for interpretation of results of tests of significance.

RESULTS:-

Table (1): shows that the age of the studied patient ranged from 40 to 60 years (51.4%). Moreover, about (57.3%) of the studied patients were female. While, about (27.3%) of the studied patient lived in an industrial region. Finally, (56.3%) of the studied patient was note work (58%).

Table (2): illustrates that the studied patients complain from two symptoms from coughing, wheezing and dyspnea (41.7%), also, common time of asthmatic attack at night (48.5%). However, the studied patient suffered from seasonal attacks (81.6%), the common season of an asthma attack in spring (67%) and winter (61.2%). Finally, the studied patients had a family history of bronchial asthma (43.7%).

Table (3): shows that, there is a statistically significant improvement between before program and immediately after the program stage. Also, there is a statistically significant improvement between before program and one month after the program.

Table (4): shows a statistically significant improvement of self-practice level.

Table (5): shows that the highest percentages that cause asthma attack during the program were pollen from the tree (62.1%), flu (56.3%), perfumes (55.3), Cigarette smoke (54.4%) & house dust (53.4%).

Table (6): shows that, there is a significant positive correlation between all phases of the program between self-management behaviors, self-practice, and triggers expect there is no significant correlation in the pre-program stage between self-management behaviors and self-practice also between self-management behaviors and triggers.

Table (7): shows that, there were no a statistically significant differences between self-management behaviors and their personal characteristics pre-program, post-program intervention & after one month of the program.

Table (1): Personal Characteristics of the Study Sample (n=103).

Variable	Patients (n=103)	
	No	**%**
Age in Years		
20<40	36	35
40-60	53	51.4
>60	14	13.6
Range (22-68)	Mean±SD 46.62 ± 5.4	
Gender		
Male	44	42.7
Female	59	57.3
Address		
El-zohor district	26	25.2
El-arab region	16	15.5
El-manakh district	23	22.3
Port-fouad city	10	9.7
Industrial region	28	27.3
Occupation		
Work	45	43.7
Not work	58	56.3

Table (2): Medical and family history of the Study Sample (n=103).

Variable	Patients (n=103)	
	No	**%**
Asthmatic symptoms		
Dyspnea	8	7.8
Cough	21	20.4
Wheezes	31	30.1
two symptoms from previous symptoms	43	41.7
Common time of asthmatic attack		
Night	50	48.5
Day time	41	39.8
Both time	12	11.7
Asthmatic attack frequency		
Once per day	26	25.2
Once per week	23	22.3
Once per month	23	22.3
Seasonal	31	30.2
Are you suffering from seasonal asthmatic attack		
Yes	84	81.6
No	19	18.4
Winter* Yes	63	61.2
No	40	38.8
Spring* Yes	69	67
No	34	33
Family history about bronchial asthma		
Irrelevant	39	37.9
Bronchial asthma	45	43.7
Allergic rhinitis- conjunctivitis- eczema	19	18.4

*the patient of bronchial asthma may be suffered from seasonal asthma attack at more than season.

Table (3): Self –management behaviors during Different Phases of Program Intervention among Studied group (n=103).

Self – management dimensions	Programs phases			P1	P2	P3
	Before program	**Immediate after Program**	**one month after program**			
	Mean±SD	**Mean±SD**	**Mean±SD**			
Medication	0-5 2.58±2.08	2-7 4.52±2.2	1-7 4.33±1.6	0.000*	0.001*	0.477
Coping with asthma	0-3 1.07±1.2	1-3 2.01±1.14	0-3 2.11±1.02	0.000*	0.001*	0.513
Action during attack	0-7 2.66±2.45	2-9 6.6±2.1	1-9 6.9±2.1	0.000*	0.001*	0.252
Environmental control	0-3 1.05±1.06	1-3 2.2±0.76	0-3 1.98±1.13	0.000*	0.001*	0.24
Prevention from recurrent attack	0-9 3.11±3.2	3-10 7.66±2.1	2-10 7.18±2.4	0.000*	0.001*	0.142
Diet and other factors	0-6 2.42±1.6	3-7 4.6±2.2	2-7 5.04±1.3	0.000*	0.001*	0.354
Total	11-32 12.99±7.1	10-39 27.83±7.8	9-39 28.0±7.1	0.000*	0.001*	0.851

*Significant level considered when (P≤0.05)

P1 = differences between before & immediately after

P2= differences between before & one month after

P3= differences between immediately after & one month after

Table (4): Levels of self-Practice during Different Phases of Program Intervention among Studied group (n=103).

Procedures	Program phases						χ^2 P
	Before program (n=103)		Immediate post program (n=103)		1 month after program (n=103)		
	N	%	N	%	N	%	
Inhaler process:							
Poor	37	35.9	19	18.5	22	21.4	37.13
Adequate	41	39.8	16	15.5	4	3.8	**0.001***
Good	25	24.3	68	66	77	74.8	
Nebulizer process:							
Poor	87	84.5	21	20.4	20	19.4	94.676
Adequate	14	13.6	32	31.1	34	33	**0.001***
Good	2	1.2	50	48.5	49	47.6	
Total level							
Poor	**81**	**78.7**	**22**	**21.4**	**22**	**21.4**	**62.061**
Adequate	**20**	**19.4**	**28**	**27.1**	**39**	**37.8**	**0.001***
Good	**2**	**1.9**	**53**	**51.5**	**42**	**40.8**	

*Significant level considered when (P≤0.05)

Table (5): Factor (triggers) that causes asthma attack during Program Intervention among Studied group (n=103).

Triggers	Not occurred		Occurred	
	No.	%	No.	%
1. Running	58	56.3	45	43.7
2. Cigarette smoke.	47	45.6	56	54.4
3. Being angry.	54	52.4	49	47.6
4. Pollen from tree.	39	37.9	64	62.1
5. Exhaust fumes.	47	45.6	56	54.4
6. Stress at home.	59	57.3	44	42.7
7.				
8. Certain intensive odors	55	53.4	48	46.6
9. Sport activities	52	50.5	51	49.5
10. Perfumes	46	44.7	57	55.3
11. Flu	45	43.7	58	56.3
12. Sinus problem	53	51.5	50	48.5
13. Animal hair	59	57.3	44	42.7
14. House dust	48	46.6	55	53.4
15. Cats	61	59.2	42	40.8
16. Spicy food	44	42.7	59	57.3
17. Milk	60	58.3	43	41.7
18. Meat	54	52.4	49	47.6
19. Egg	55	53.4	48	46.6
20. Fish	53	51.5	50	48.5
21. Chicken	55	53.4	48	46.6

Table (6) Correlation between Self –management behaviors & self-Practice and triggers of asthma in Different phases of Program Intervention among the Studied group (n=103).

Variables		Self –management behaviors		
		Pre program	Immediately Post program	After one month
Self-Practice	Pre program	r = 0.138 p = 0.166	-----	-----
	Immediately Post program	r = 0.038 p = 0.706	r = 0.146* p = 0.04	-----
	After one month	r = 0.121 p = 0.222	r = 0.399* p = 0.000	r = 0.426* p = 0.000
Triggers		r = 0.090 p = 0.412	r = 0.224* p = 0.023	r = 0.074 p = 0.639

Table (7): Relation between Mean Score of self-management behaviors & Personal Characteristics' during Different Phases of Program Intervention among studied group.

Variables	Self-Management Behaviors In Different Program Phases					
	Before program Mean±SD	F value (P)	Immediate after program Mean±SD	F value (P)	One months after Program Mean±SD	F value (P)
Age years:						
20<40	11.83±9.672	0.535	27.08±7.190	0.398	26.87±**7.232**	1.103
40-60	13.94±**10.554**	0.587	28.47±**8.185**	0.673	29.23±**6.766**	0.336
>60	12.35±**8.332**		27.21±**8.645**		27.00±**8.15**	
Address:						
El-zohor district	13.14±9.47	1.369	27.65±7.66	0.504	28.15±8.19	0.272
El-arab region	14.88±**8.48**	0.263	29.01±**9.05**	0.681	27.23±**6.87**	0.846
El-manakh	10.17±**8.24**		**27.47±6.67**		28.56±**6.15**	
Port-fouad city	13.81±**9.24**		26.31±**7.27**		28.87±**8.46**	

Industrial region	10.02±**9.24**			28.00±**9.23**			29.08±**5.59**		
Educational level:									
Illiterate	12.50±9.53		0.201	26.50±**8.53**		0.358	29.00±**5.41**		2.045
Read and write	12.31±**9.30**		0.895	26.56±**8.80**		0.784	27.06±**8.90**		0.120
Secondary educa.	15.39±**10.86**			31.39±**6.65**			28.26±**5.01**		
University	12.41±**8.72**			28.41±**6.79**			27.66±**7.87**		
Chi-square test	%	χ^2	**P**	%	χ^2	**P**	%	χ^2	**P**
Occupation:-									
work	43.7	0.462	0.794	43.7	1.725	0.422	43.7	0.350	0.839
not work	56.3			56.3			56.3		
Gender									
Male	42.7	0.882	0.643	42.7	1.86	0.395	42.7	1.286	0.526
Female	57.3			57.3			57.3		

*Significant level considered when (P≤0.05).

DISCUSSION:

Bronchial asthma self-management education is essential to control bronchial asthma. This might be achieved if patients receive adequate guidance on how to use medications and receive sufficient knowledge about the disease then provide some exercises about how to use some devices such as inhaler and nebulizer ***Elbur, et al., (2017)***

The result of the current study revealed that more than half of the studied patients were female; most of female have poorly controlled asthma as they were mostly exposed to house dust mite. The finding also supported with ***Elbanna, Sileem, Bahgat& Ibrahem, (2017)*** the half of the studied patients was female.

Additionally, their age falls between **40-60** years old which might explain that most of the bronchial asthma patients were an old adult. This result is consistent with ***Nguyen, Huynh & Chavannes (2018)*** which found that approximately half of the studied patients their age fall between 36-60 years old. While, more than one-quarter of patients were lived in an industrial region that is the trigger for the patient with bronchial asthma and lead to recurrent attack for patients.

The current study findings showed that, less than half of the studied patients suffered from two symptoms and more e.g. Dyspnea, Cough, and Wheezes. Moreover, this finding is in agreement with ***Tageldin, Wagih & Maher, (2015)*** of the symptoms of bronchial asthma associated with more than one symptom e.g. wheeze, dyspnea, cough.

Also, the current study findings showed that, near than half of the studied patients that the common time of asthma attack was at night, this might be due to the airways tend to narrow during the sleep, which may cause increased airflow resistance. However, the result is disagrees with ***Elbanna et al., (2017)*** who found that, patients with bronchial asthma during the intervention program had a high mean score for day time symptoms, not nocturnal symptoms.

The current study revealed that, the majority of the studied patients had asthmatic attack frequency at seasonal. This might be due to some patients of bronchial asthma increased the symptoms at a certain time of the year. So, bronchial asthma can be triggered by changes in the environment, knowing which seasons attack.

Further, more than half of the studied patients suffered from a seasonal asthma attacks in winter. This might be due to the cold air causes asthma symptoms. When the air enters the airway, the air can cause the airway spasm. This causes coughing, wheezing, a tight chest, and breathlessness. Also, more than of the studied patients suffered from seasonal attacks in spring. This might be due to the pollen air in spring which causes an asthma attack.

The current study showed that, near than half of the studied patients had a family history of bronchial asthma. Conversely, this finding disagrees with a study of ***Elbanna et al., (2017)*** who found that, more than half of the studied patients didn't have a family history of bronchial asthma.

The current study showed that, there was a statistically significant in medication dimension between pre-program and one month after the program. While, there was no statistically significant between pre-program and immediately after the program. This may be reflecting that, the studied patient of bronchial asthma uses asthma medication regularly after the program. Also, this study may reflect the impact of disease chronicity and the need for daily maintenance medications.

However, this result is confirmed by ***Boulet et al., (2015)*** who found that, there was significant improvement in using appropriate medication between pre-program and one month after the program implementation.

The current study showed that there was a statistically significant difference between pre-program and immediately after the program in coping with asthma dimension. This may be referred to that the studied patient understood how to cope with asthma exacerbation. However, this result agrees with the study of ***Kotwania, Chhabra, (2012)*** which confirmed that symptoms of asthma control showed improvement earlier in patients who were given educational intervention.

The current study showed that, there was a statistically significant improvement during the attack between pre-program and immediately after program implementation. This may be effective of the educational program and the patients understood how to identify asthma symptoms exacerbation and take an active role to manage asthma during the attack.

However, this result is inconsistent with the study of ***Jeanette, (2013)*** that significant improvement in asthma control during the attack was observed after asthma education.

As regard to environment control, the finding of the present study indicated that there was a statistically significant difference between pre-program and immediately after the program implementation. This might be referred to that the studied patient with bronchial asthma understood the program and applied the instructions appropriately to the removal of the allergic substance from the place and avoid secondhand smoke.

In agreement with the present results, ***Elbanna et al., (2017)*** go in the same way and reported that, there was a statistically significant improvement in the level of environmental control between pre-program and immediately after the program. While, the result disagrees with the study of ***Gajanan, Fernandes, Avuthu& Hattiholi, (2015)*** who showed that improved knowledge about environment control alone does not improve the level of asthma control.

As concerning to prevention from recurrent attacks, the current study revealed that, there was highly a statistically significant improvement between pre-program and immediately after the program. This may be referred to that the studied patient of

bronchial asthma had a lack of knowledge about to manage asthma exacerbation while after implementation of the program the patient is known steps about preventing the recurrent attack.

Furthermore, this result is agreed with ***Hassan et al., (2013)*** who found that, there was a significant decrease in the recurrence and the severity of the main bronchial asthma symptoms (nocturnal waking, morning symptoms activity limitation, shortness of breath, and wheezing) and less recurrence for an asthma attacks after the implementation of the educational program for the patients with bronchial asthma.

Concerning diet, the present study revealed that, there was a statistically significant between pre-program and immediately after the program. This refers to the studied patient understood the intervention and found personalized food allergy between the patient. Therefore, this result is accordance to ***Kondo et al., (2014)*** which said that, there was a statistically significant difference between the elimination of the allergy food and effective therapy for food allergy who concluded that, Sensitivity to allergens and clinical symptoms of allergies vary in each patient with food allergies.

The current study revealed that, there was a statistically significant difference between all phases of the program about self-care management of asthma. This may be due to the effective training of asthmatic patients on the use of inhaler technique and achieving better control of asthma symptoms. Indeed, this result goes in the same line with ***Hassan et al., (2013)*** which reported that, the proportion of patients achieving better control of asthma symptoms increased after the implementation of the educational program.

However, the results are in disagreement with ***Arora et al., (2014)*** which reported that the proper device handling training may not only significantly improve symptoms control but might also allow dose reduction in the long term.

The current study revealed that, there is a statistically significant difference between all phases of the program in all items in practice technique. This may be due to the patient of bronchial asthma used nebulizer to control severe asthma during an acute exacerbation.

Further, *Ahmed & Kafl, (2017)* stated that there is a statistically significant difference between pre-program and post-program and pre-program and follow up in practice level of the studied patients regarding asthma in all items.

The current study elicited that, more than half of the studied patients stated that the most common triggers for asthma attack were pollen from the tree, flu, perfumes, Cigarette smoke, and house dust that are triggers for an asthma attack. Goes In the same line, the study of *Dharmage, et al., (2019)* confirmed that the most common risk factors for asthma attack were pollen allergen, respiratory viral infection, Cigarette smoke, and house dust.

As regard to correlation between self-management behaviors and self-practice, the current study showed a significant positive correlation between immediately post-program self-management behaviors and self-practices. This may be due to patient with bronchial asthma had a better technique in using the inhaler and nebulizer to control asthma symptoms or using regularly as treatment of asthma. Furthermore, this result agrees with *Nguyen et al., (2018)* which found that, a positive relationship between asthma self-management and asthma control practice.

The current study showed that, there was no statistically significant relation between self-management behaviors and Personal Characteristics for the patient with bronchial asthma that included Age, Gender, Home location, and Educational level. This may be due to bronchial asthma occurring in all age. In addition, the result of *El-Gilany, El-Desoky, El-Hawary & Farrag, (2018)* showed that, there was no relation between asthma and gender.

Also, this result is confirmed with *Carey, (2013)* who found that, there is no difference in asthma management and the educational level of asthmatic patients. Furthermore, stated that there is no difference in asthma management education and the gender of asthmatic patients.

CONCLUSION:-

Based on findings of the present study, it can be concluded that:

The results of the present study demonstrated that improvement self-care management behaviors for patient with asthma, the use of medication, how to deal with asthma attacks,

prevent a recurrent asthma attack, and avoidance the triggers for bronchial asthma patients after implementation of the program. In general, the studied sample improved markedly in the practice of the inhaler after the implementation of the program.

RECOMMENDATION:-

Based on the finding of the present study, it is recommended to:

- Promotion and enhancement of the self-care management to the patient through show picture about triggers, allowed foods, and follow up should be continued after termination of the treatment through the rehabilitation program.
- Providing regular training about the using of inhaler and nebulizer.
- Facilitating simulation labs if possible to observe and demonstrate intervention and educations including the progress of the disease, diet, exercise, medication side effects, and lifestyle modification.

For further researches:

- Studying the patient's satisfaction after implementation of the applied program.
- Prospective follow-up studies are needed to develop and refine interventions to improve patient's adherence to treatment and prevent further deterioration.

REFERENCE:-

Abd El-Wahab E.W., *Farag H.M.*, *El-Nimr* N.A., *& Saad El-Dein H.A.*, *(2016)*. Asthma Triggers and Control among Adults in an Egyptian Setting. Journal of Pulmonary Medicine,1(1).

Ahmed S.A, Kafl R.H, (2017). Outcome of Self-Management Training On Quality Of Life And Self-Efficacy In Patients With Bronchial Asthma, IOSR Journal of Nursing and Health Science, Volume 6, Issue 5, PP 01-11.

Ali W, Abou Elmaati H, (2017). Self-Management Program to Improve Asthma Knowledge and Inhaler Technique among Adult with Asthma. IOSR J Nurs Heal Sci [Internet]. 2016 [cited 2017 Aug 7]; 5(2):37–47.

Arora P, Kumar L, Vohra V, Sarin R, Jaiswal A, Puri M.M, Rathee D, Chakraborty P, (2014). Evaluating the technique of using inhalation device in COPD and Bronchial Asthma patients, Science Direct, Respiratory Medicine 108- 992:998

Becerir T, Akcay A, Duksal F, Ergin A, Becerir C & Guler N, (2014). Prevalence of asthma, local risk factors and agreement between written and video questionnaires among Turkish adolescents. *Allergol Immunopathol.* 42(6): 594– 602.

Boulet L.P, Boulay M.E, Gauthier G, et al., (2015). Benefits of an asthma education program provided at primary care sites on asthma outcomes, Respir. Med. 109, 991: 1000.

Carey S (2013). What is the Current Level of Asthma Knowledge in Elementary, Middle, and High School Teachers? Doctoral Dissertation of Tennessee State University

*Ching L., (2015).*The Development and Testing of a Self-management behavior Model for Patients with Chronic Obstructive Pulmonary Disease. Doctoral dissertation in Nursing, The Chinese University of Hong Kong.

Desalu O.O, Fawibe A.E & Salami A.K, (2012). Assessment of the level of asthma control among adult patients in two tertiary care centers in Nigeria. Journal of Asthma. 49(7): 765-772

Dharmage S.C, Perret J.L & Custovic A, (2019). Epidemiology of Asthma in Children and Adults. Front. Pediatr. 7: 246.

Elbanna R, Sileem A, Bahgat Sh, Ibrahem G, (2017). Effect of bronchial asthma education program on asthma control among adults at Mansoura district, Egyptian Journal of Chest Diseases and Tuberculosis 66,561:569.

Elbur A, Alharthi B, Alharthi S (2017). Self-management and control of asthma among adult patients in King Faisal medical complex Taif, KSA. *Int J Res Pharm Sci.*; 7(1):24–29.

El-Gilany A, El Desoky T, El-Hawary A.K, Farrag M, (2018). Quality of life of children with bronchial asthma and their caregivers: A hospital-based study, PROGRESS IN MEDICAL SCIENCES, VOL 2, NO. 1, PAGE 1–8.

Farrag M. A., Al Adawy E. R., Farid M. M., (2016). Reassessment of Cases of Uncontrolled Bronchial Asthma in Port-Said Chest Hospital. Egyptian Journal of Hospital Medicine. 68 (2), 1169-1175.

Gajanan G, Fernandes N, Avuthu S, Hattiholi J, (2015). Assessment of knowledge and attitude of bronchial asthma patients towards their disease, J. Evol. Med. Dent. Sci. 4 (90),15508: 15514.

Ghaffari J& Aarabi M, (2013). The prevalence of pediatric asthma in the Islamic Republic of Iran: a systematic review and meta-analysis. *J Pediatr Rev.*; 1(1): 2– 11.

GINA, 2017. Global Initiative for Asthma. Global strategy for asthma management and prevention. Available from: http://ginasthma.org/2017-gina-reportglobal-strategy-for-asthma-management-and-prevention/. Accessed August 01, 2018.

Hassan Z.M, Riad N.M, Ahmed F.H, (2013). Effect of Buteyko breathing technique on patients with bronchial asthma, Egyptian Journal of Chest Diseases and Tuberculosis, 61-235: 241.

Jeanette T.L, (2013). Evidenced based asthma education intervention for adults in a primary care setting using self-management guidelines. Doctor of Nursing Practice (DNP) Capstone Projects, Paper 27. http://scholarworks.umass. edu/nursing_dnp_capstone/27.

Kondo N, Kuwabara M, Matsui E, Kodama H, Kumada M, et al…., (2014). Personalized medicine for bronchial asthma and allergies, Personalized Medicine Universe 3, 11:14.

Kotwania A, Chhabra S.K, (2012). Effect of patient education and standard treatment guidelines on asthma control: an intervention trial, WHO South- East Asia J. Public Health 1 (1) 42: 51.

Mammen J, Rhee H, (2012). Adolescent asthma self-management: a concept analysis and operational definition, Pediatr. Allergy Immunol. Pulmonol. 25, 180–189.

*Nguyen V.N, Huynh T.T, Chavannes N.H, (2018).*Knowledge on self-management and levels of asthma control among adult patients in Ho Chi Minh City, Vietnam International, Journal of General Medicine: 11, 81: 89.

Pavord I.D, Beasley R, Agusti A, Anderson GP, Bel E, Brusselle G, et al, (2018). After asthma: redefining airways diseases. *Lancet.* 391:350–400. doi: 10.1016/S0140-6736(17)30879-6.

Perry A. G, Potter P. A, (2015). Mosby's Pocket Guide to Nursing Skills and Procedures, eighth edition. Mosby, an imprint of Elsevier, Inc.

Quaranta J., (2013). The performance of the school nurses' asthma management behaviors in relationship to their asthma knowledge, asthma attitude and asthma self-efficacy, Doctoral dissertation. Graduate School of Binghamton University. State University of New York.

Tageldin M.A, Wagih K, Maher O, (2015). Study the pattern of bronchial asthma among outpatients clinic at Sohag and Akhmeem Chest Hospitals, Egyptian Journal of Chest Diseases and Tuberculosis, 64, 313–323

Toro-linnehan J, (2013). Evidenced Based Asthma Education Intervention For Adults In A Primary Care Setting Using Self-Management Guidelines.

Wilkinson J. M, Treas L. S, Barneft K. L, & Smith M. H, (2016). Procedure Checklists for Fundamentals of Nursing, (3$^{rd\ Ed}$.). F. A. Davis Company. Philadelphia.

Williams L. S, Hopper P. D, (2015). Understanding medical surgical nursing − Fifth edition. F.A. Davis Company, Philadelphia.

تاثير برنامج تعليمى عن سلوكيات الرعايه الذاتيه لمرضي الربو الشعبي فى مستشفى المصح البحرى ببورسعيد

دينا السقا ابراهيم [1] ، ايمان صلاح شاهين [2] ، حياة محمد عبد القادر [3]

معيده بقسم التمريض الباطنى والجراحى[1] ، أستاذ مساعد دكتور التمريض الباطنى والجراحى[2] ، مدرس التمريض الباطنى والجراحى [3] ـ كليه التمريض ـ جامعه بورسعيد.

الخلاصه

الربو الشعبي هو مرض تنفسي مزمن منتشر للغاية يصيب أكثر من 300 مليون شخص في جميع أنحاء العالم بمعدل وفيات يبلغ حوالي 250،000 سنويًا. **هدف البحث:** تهدف هذه الدراسة إلى تقييم تأثير برنامج تعليمي علي سلوكيات الرعاية الذاتية للمرضى الذين يعانون من الربو الشعبي. **طرق وأدوات البحث:** دراسه شبه تجريبي ، تضمن عينة غرضيه من 103 من مرضى الربو من العيادات الخارجيه بمستشفى المصح البحري في بورسعيد . وتم جمع البيانات باستخدام استبيان عن الرعايه الذاتيه لمرضي الربو الشعبي. **النتائج:** يوجد تحسن ذو دلاله احصائيه فى جميع سلوكيات الرعايه الذاتيه الخاصه بمرضي الربو الشعبي بعد تطبيق البرنامج التعليمى. **الاستنتاجات:** وقد خلصت الدراسه على انه بعد تنفيذ البرنامج التدريبي لمرضي الربو الشعبي وجدا تحسن فى استخدام الدواء ، وكيفية التعامل مع نوبات الربو ، ومنع نوبة الربو المتكررة ، وتجنب مسببات الربو الشعبي ، واستخدام جهاز الاستنشاق. علاوة على ذلك ، توجد فروق ذات دلالة إحصائية بين سلوكيات الرعايه الذاتيه والممارسة الذاتية قبل وبعد تنفيذ البرنامج. **التوصيات:** يجب مواصله تعزيز الرعايه الذاتيه لمرضي الربو الشعبي من خلال عرض صور لهم عن المهيجات والاطعمه المسموح بها والمتابعة بعد إنتهاء العلاج. أيضا ، توفير تدريب منتظم حول استخدام أجهزة الاستنشاق البخاخات.