Original Article

Effectiveness of Educational Program on Self-Management Behaviors of Asthmatic Patients

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ABSTRACT

Objective: To evaluate the effectiveness of educational program on self-management behaviours of the asthmatic patients.

Study Design: Quasi experimental study

Place and Duration of Study: This study was conducted at the Rehmat Ward, DHQ Hospital Faisalabad from 1st May 2020 to 31st October 2020.

Materials and Methods: Thirty six patients were enrolled by using purposive sampling technique in current study. After taking the consent all the mild to moderate asthma patients of both genders were controlled in current study. Educational intervention was provided for 4 months from their day of admission to discharge and follow up visit at chest department. Patients knowledge and self-management behaviour was assessed by asthma Self-Management Behaviour measures Questionnaire (ASMQ) and the Asthma Quality of Life Questionnaire (AQLQ).

Results: The findings of current study reveal that out of 36 participants 17 were between the age group 15-30 years and 19 were in the age from 31-60, majority 24 (66.7%) patients were male and 41.7% have completed their education till middle. The findings showed that there was a significant difference between the pre and the post interventional knowledge's score (16.0 vs 24.5), Quality of life (63.0 vs. 28.5) and self-management behaviour (27.0 vs. 23.5) among patients (p value <0.001).

Conclusion: The educational intervention appears to be an effective method to improve asthma control self-management behaviours, disease knowledge, quality of life, and self-efficacy in asthma patients.

Key Words: Asthma, Intervention programme, Education, Self-management skills

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INTRODUCTION

Asthma is most severe chronic illness among all diseases and the leading cause of disability and morbidity affecting all age group worldwide. There is an increase of global prevalence of allergic diseases which results in increase economic burden.[1] Asthma has affected all age groups, which is almost 334million population across the world. According to research asthma case prevalence has reported greater times it has been estimated that asthma patients will be increased by 100million globally by the year of 2025.[2]

In China, the incidence of asthma was 4.2%, which is generally 45.7% population in which 1.1% population which is account for 13.1 million is adults and has air flow limitation due to under diagnosed and under treatmemt.[3]

The prevalence of adult self-reported asthma is around 1.8 per cent, according to the Indian National Family Health Survey.[4] Asthma prevalence estimates in Pakistan at 4.3% in the global asthma burden report. Asthma prevalence in Asia has been shown to range from 0.7% to 11.9 % but there were also significant differences in the definition of asthma.[5] The triggering stimuli such as smoke, dust, pollens, cold and hot food items, tobacco, extraneous exercise, perfumes, pet dander, humidification in air, emotional instability causes hypersensitive to airway. When the patients is exposed to theses triggers the patients suffers severe asthmatic attack in which airway inflamed followed by spams, shortness of breath, cough and other symptoms occurs.[6]

Knowledge is the acquisition of behavioral change, knowledge, skills and attitudes by learning as an action and process. Improving the patient's quality of life is the major concern in chronic disease. Asthma control approaches not only concerned with recovering patients vital functions such as improving breathing circulation and managing airway but also enhance their quality of life by restricted adherence to disease triggering stimuli.[7] Lack of knowledge, poor self-management skills are contributing factors of severity among

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asthmatic patients. No doubt effective medicines and treatment cover the symptoms but in some cases resistance develop due to disease severity, patients adherence to prescribed treatment and lack of awareness about disease.[8] A study conducted by Gree (2017) has confirmed that, although people with asthma strongly want to know about their disease, they do not want to take the lead decisions in exacerbation. For health professionals, this presents a problem because the most recent guidelines recommend greater autonomy in decision making with the help of written action plans for patients.[9] There was an evidence of successful and effective self-management programs implemented in other nations, such as Australia, that focused on the important role of effective education can play in decreasing asthmatic symptoms and consequently reducing doctor visits.[10] Effective education provided by nurses to patients suffering with asthma should focus on enabling these patients to improve their knowledge, practices, and asthmatic control measures and enhance their awareness of how to avoid triggers of asthma attacks.[11]

The asthmatic patients have no knowledge regarding asthma self-management. Poor understanding regarding disease control can results in underutilization of healthcare facilities and increase disease mortality and morbidity and financial burden. Both the nurse as well as patients plays a vital role for the management of the disease. Thus, there is need for nursing intervention program to provide and improve basic patient's knowledge regarding self-management behaviors to improve the quality of life of patients with asthma and lessen the severity of symptoms and reduce the burden of disease. Therefore this study was conducted to evaluate the effectiveness of educational program on self-management behaviours of the asthmatic patients.

MATERIALS AND METHODS

This quasi experimental study was conducted at Rehmat Ward, DHQ Hospital Faisalabad. A total of 36 patients were enrolled by using purposive sampling technique in current study. After taking the consent all the mild to moderate asthma patients of both genders were controlled in current study. The exclusion criteria were medical students and professionals, comorbidities like heart disease, kidney failure, pregnant females, or patients currently taking any psychotic medication along with asthma. The data was collected from asthmatic patients from chest ward of DHQ hospital Faisalabad. Researcher keeps in contact to patients during the hospital stay and after discharge through a weekly meeting in conference room of ward and through telephone for any information and caring for asthma at home. Educational intervention was provided for 4 months from their day of admission to discharge and follow up visit at chest department. Patients were guided to fulfil the educational requirements. Patient's demographic data was collected. Asthma Self-Management Behaviour measures Questionnaire (ASMQ) adopted tool consists of 30 items, which measures the control of asthma was assessed by patients' response 1 as very often, 2 as sometimes, and 0 as never. The correct response was marked as "1" and incorrect response was marked as "0". The level of knowledge was further be classified on the base of score obtained, Poor knowledge <50%, Moderate knowledge: 51-75%, Adequate knowledge: >75% and the Asthma Quality of Life Questionnaire (AQLQ) tool contains 20 items was used to assess the asthma-related quality of life. The participants quality was assessed by rating 1 as not at all, 2 as mildly, 3 as moderately, 4 as severely and 5 as very severe and quality was be described as poor, average and good. The participants quality was be described as poor, average and good. It was categorized a Poor Quality: <50%, Fair Quality: 51-70%, Good Quality: >75%. These tools were developed by Mancuso CA, in 2009 used to assess patient's knowledge and Quality of life.[12] After 4-month intervention the same questionnaire, used to collect post intervention data.

Phase I: Intervention was divided into 2 phases. In first phase the participant was introduced about the program after the self-introduction of researcher. Written and informed consent was taken and patient demographic data was recorded.

Phase 1I: The pre intervention data was assessed through structured schedule questionnaire. Patient's self-management behaviours were assessed using Asthma Self-Management Questionnaire (ASMQ), asthma quality of life questionnaire was used.

Phase III: In phase III patients were given intervention through educational programme which lasts for 16 weeks. The duration of each session ranged between 30-45 minutes. At the beginning of each session researcher starts by giving a summary about previous session and explaining the objective new one. Different strategies were used including brain storming, instructions, lectures, role play and group discussions. After 4-month of intervention post-test data was collected through same instrument. Intervention was developed by a book publish by Registered Nurses' Association of Ontario in 2017, with the title of Adult Asthma Care: Promoting Control of Asthma. [13]

Data was entered and analysed by using SPSS version 21. Frequencies and percentages were calculated for demographic data such as gender, age, occupation, disease onset, educational level, smoking history and housing condition. Dependent t-test was applied to find the mean differences of e self-management behaviours of asthmatic patients before and after the intervention. Differences was considered statically significant if $p \leq 0.05$.

RESULTS

Seventeen were between the age group 30-45 years and 19 were in the age from 46-60. Majority of the participants were males 24 (66.7%). 41.7% participants were having middle education level, whereas only 3 participants have completed their matriculation. Moreover, the remaining 13 (36.1) participants were illiterate and 5 (13.9%) having primary level of education. Only 4 (11.1%) who were not working whereas 20 (55.6%) and 12 (33.3%) were labors and drivers respectively. 52.8% of the participants never smoked while 33.3% smoke sometimes and 13.9% smoke very often. The majority of the patients were suffering from more than 6 months 61.1% and almost 58.33% were living in congested and non-cemented house while 41.7% were having well ventilated and cemented house (Table 1).

Table No.1: Demographic variables of the study participants (n=36)

Variable	No.	%
Age (years)		
30 – 45	17	47.2
46 – 60	19	52.8
Gender		
Male	24	66.7
Female	12	33.3
Education		
Primary	5	13.9
Middle	15	41.7
Matric or above	3	8.3
Illiterate	13	36.1
Occupation		
Labourer	20	55.6
Driver	12	33.3
Do not work	4	11.1
Smoking Status		
Never	9	52.8
Sometime	12	33.3
Very often	5	13.9
Asthma Duration		
3 to 6 months	14	38.9
> 6 months	22	61.1
Housing Condition		
Well ventilated and cemented house	15	41.7
Congested and non-cemented	21	58.3

Table 2 indicates that in the pre-interventional phase the majority of the participants 32 were having poor knowledge while only 4 participants were having the moderate knowledge. The findings showed that there was a significant difference between the pre and the post interventional knowledge's score among participants regarding the asthmatic self-management behavioras evident by p<0.001. Moreover, when self-management behavior is categorize into uncontrolled, partial and controlled behavior; results shows that in both pre and post group none of the participant showed the controlled behavior. In pre group majority of the participants showed the uncontrolled behavior 97.2% while in post group the patients showed the uncontrolled and partial behavior as 38.1% and 61.1% respectively. The findings revealed that there was a significant difference between pre and post interventional score of self-management behavior among participants as evident by p<0.001.

Table 2: Comparison of pre and post knowledge and self-management behavior categories

Variables	Pre-intervention	Post-intervention	z-value	p-value
Knowledge				
Poor	32 (88.9%)	5 (13.9%)	-5.076	< 0.001
Moderate	4 (11.1%)	8 (22.2%)		
Adequate	-	23 (63.9%)		
Self-Management Behavior				
Uncontrolled	35 (97.2%)	14 (38.1%)	-3.854	< 0.001
Partial	1 (2.8%)	22 (61.1%)		
Controlled	-	-		

DISCUSSION

Asthma regular care is thought to include an important role for self-management education. The failure to utilize human behavioral processes and motives in operating educational programmes is related to the failure to train patients for managing chronic diseases. Therefore, to improve the efficacy of educational interventions for self-management, effective behavioural techniques are required. [14]Therefore the objective of the study is to evaluate the effectiveness of educational program on self-management behaviours of the asthmatic patients.

In the present study educational intervention was provided for 4 months from their day of admission to discharge and follow up visit at Chest Department. Patients were guided to fulfil the educational requirements. Patient's demographic data was collected. Asthma Self-Management Behaviour measures Questionnaire (ASMQ) the Asthma Quality of Life Questionnaire (AQLQ) tool were used. Pre and post intervention data was collected. The findings of current study reveal that out of 36 participants 17 were between the age group 15-30 years and 19 were in the age 31-60, majority 24 (66.7%) patients were male and 41.7% have completed their education till middle.

According to the National Health Interview Survey, 13% of children aged 0 to 17 in the United States had asthma at some point in their lifetimes in 2007. Children (9.5%) have a greater annual prevalence of asthma as compared to adults (7.7%).[15] Around 14% of children worldwide have asthma, and in adult population, this is increasing. Particularly among lower socioeconomic levels with less access to appropriate

treatment, asthma is a serious domestic and worldwide health issue that is now rapidly increasing.[16]

In this study knowledge of self-management behavior of patients were also observed. The findings showed that there was a significant difference between the pre and the post interventional knowledge's score and self-management behaviour among participants regarding the asthmatic self-management behavior as evident by (p value <0.001). Furthermore, there was a significant increase in the median knowledge scores, after the intervention with median difference was 8.5 from the pre-scores.

A pilot randomized controlled trail was conducted on the WEB-BASED Asthma self-management system. The objective of the study was to compare the web-based asthma control system and usual care on asthma control, behavior, knowledge and quality of life among patients. Patients were divided into two groups. Group A was given web-based intervention and group B usual care. The results of study revealed that the from baseline to 3 months intervention there was significant improvement in quality of life, self-reported symptoms, knowledge and behavior in web-based asthma control program as compared to control group.[17] Similar to our findings, a recent evaluation of systematic reviews revealed that the studies conducted on an adult population preferred the web-based intervention on asthma-related quality of life as well as on self-reported symptoms and asthma control. Self-reported asthma control frequently overstates the impact of therapies, according to prior research.[18]

Another study was conducted in 2021 on educational program on asthma patients. The results showed that in terms of asthma control, asthma self-management, and asthma knowledge and awareness, patients in the intervention group showed significant improvement than control group. Patient activation was very high in this group. These findings also support the current study which shows significant improvement in self-management behavior, knowledge and quality of life among asthma patients.[19]

A nurse led asthma control intervention study was conducted for school going children. It was reported that there was significant improvement in the knowledge of asthma symptoms and daily activities at 6 and 12th week follow-up. For school-aged children with asthma, self-management is a challenging task, but nurses can offer essential learning opportunities and continuity of care.[20]

A quasi experimental study was conducted on self-management behaviour on asthma patients to evaluate the effect of educational program. 103 patients were enrolled in study the results showed the significant improvement before and after intervention. Patients showed 49.5% controlled behavior as compared to baseline data. The study concludes that these educational programme have significant impact on patients behavior.[21]

CONCLUSION

The educational intervention appears to be an effective method to improve asthma control self-management behaviours, disease knowledge, quality of life, and self-efficacy in asthma patients. A better understanding of the differences between knowledge and behavior and the factors that affect them could result in asthma educational interventions that are more successful. By encouraging and supporting changes in health behavior, giving patients with chronic diseases timely access to health information and individualized notifications when action is required may enable people to self-manage themselves more effectively.

Author's Contribution:

Concept & Design of Study:	Sidra Nadeem
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