

An Intervention Using A 10-Item Quiz For Educating Patients With Asthma On Their Disease And Its Treatment In The Waiting Area: How Well Did The Patients Do?

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ABSTRACT

Background: Patients' understanding and knowledge of their illness and its management have a direct impact on the outcome of care. This is particularly true of chronic illnesses like Bronchial Asthma. Opportunities for educating patients with asthma are numerous but are not well-utilised. One such opportunity exists in asthma clinics patients' waiting rooms.

Method: A 10-item quiz was handed to patients attending a specialized asthma care clinic in Khartoum on arrival. The patients were requested to read the quiz and tick what they believed was the appropriate answer from a list of possible answers. Only a yes or no answer is possible. The answered quiz was then handed to the clinic receptionist who would immediately provide the patient with the same list of questions but with the correct answers clearly highlighted and explained.

Results: 143 patient encounters were recorded. 84 were female patients (58.7%). Age ranged between 12-75 years with a mean of 35 years. Nineteen percent of patients believed that asthma is a psychiatric illness, 51% that it leads to many psychiatric problems and 81% that it causes chronic problems with aging. Thirty percent felt that avoiding allergens/irritants is not important and 47% that antibiotics are helpful to treat exacerbations. Seventy four percent believed inhalers lead to addiction and 77% that steroid inhalers cause serious side-effects.

Conclusion: As in many other studies, knowledge about asthma and its treatment in this cohort of Sudanese patients is poor. Hopefully, the answered quiz has helped in making these patients better educated on their illness.

Keywords: Asthma control, patient knowledge.

The global burden of Bronchial Asthma (BA) particularly in developing countries is on the increase^{1,2}. Approximately 300 million people worldwide have asthma, and its prevalence seems to

increase by approximately 50% every ten years^{1,2}. In a prevalence study on wheezing as a marker symptom for bronchial asthma in Sudan, a 12.5% rate was found in the 13-14 years olds³. BA is not a benign disease and has clearly had a serious impact on national health care systems expenditure in developed countries, patient's quality of life and more importantly has a noteworthy mortality risk^{1,2,4,5}. International asthma guidelines emphasize the importance of a comprehensive asthma care delivery service⁶. All guidelines highlight the importance of patient education as a critical element towards improving care outcomes^{6,7}. Despite the accessibility and availability of these guidelines on the World Wide Web, BA care remains suboptimal in many countries¹.

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Numerous educational tools and a multitude of opportunities for delivery are available to asthma care providers. These include paper-based, electronic and audiovisual media. Paper-based, written, education materials are the most commonly employed medium for conveying knowledge to the patients. Utilizing patient's waiting time in clinics for health education is an excellent opportunity that unfortunately is not always utilized.

The aim of this intervention was to improve asthma patients' basic knowledge about their disease and medications prior to their encounter with the specialist. Data collected during this exercise is portrayed and its public health relevance is discussed.

METHODS:

This was a prospective study whereby a 10-item quiz was handed to all patients attending a specialist asthma care clinic in Khartoum, Sudan on arrival and prior to being seen by the pulmonologist. No formal consent was signed by the participants. However agreeing to answer the quiz was taken as a consent to participate. A quiz format was used as market research has confirmed that question and answer style are preferred to narrative advice in attracting the reader's attention. The quiz, a reproduction from an educational book on asthma was used after securing permission from its author⁸. Its content has a direct bearing on asthma care outcomes and cost of care. The patients were requested to read the quiz and tick what they believed was the appropriate answer. Only a yes or no answer is possible. The answered quiz was then handed to the clinic receptionist who would immediately provide the patient with the same list of questions but with the correct answers clearly highlighted and explained. An Arabic version of the quiz and its answers was used (Table 1). To avoid duplication, patients were provided with the quiz only on their first encounter with the service.

RESULTS:

143 patient encounters were recorded. 84 were female patients (58.7%). Age ranged

between 12-75 years with a mean of 35 years. The results are shown on table 2.

A third of participants believed patients with asthma do not get better and another third that avoidance of allergen exposure does not help to improve their symptoms. Almost 20 percent believed that asthma is a psychiatric disease and more than half were of the opinion that asthma leads to many psychiatric problems. Close to a half of the participants felt that antibiotics are useful for treating an asthma exacerbation. Around half of the participants felt that patients with asthma or their parents exaggerate asthma severity. Most believed that asthma leads to serious long-term problems as patients get older and that the use of inhalers leads to addiction. More than 75% of participants believed that the use of steroid inhalers would lead to serious side-effects.

DISCUSSION:

Out of eight possible reasons for poor asthma control (continuous exposure to allergens or irritants, poor drug compliance or inhaler technique, blunted patient perception of asthma severity, general lack of knowledge on asthma, inadequate therapy, and wrong diagnosis), six are directly related to patient understanding of asthma and its treatment⁹. Poor knowledge about asthma and under-treatment are clearly associated with poor control and excessive use of healthcare resources especially emergency care visits^{10,11,12,13}. On the other hand, asthma education programs have been shown to improve knowledge, self-management skills, morbidity and mortality^{14,15,16}. Two systemic reviews confirmed that emergency room visits are also reduced^{16,17}. This was again the finding of a more recent systematic review with metaregression investigating the use of complex interventions that reduced the use of the emergency services by patients with Asthma exacerbations¹⁸. Educational interventions and skills training resulted in a 23% and 36% reduction in emergency services use respectively¹⁸. The findings of this primarily an educational endeavor to

Table 1: Asthma Quiz and its Answers

اجوبة استبيان الربو {حساسية الصدر}

Answers to the Asthma Quiz

All answers to the questions are (NO). ALL the Questions denote patients wrong beliefs about Asthma.

التوضيح Explanation	العبارة Statement	م
اغلب حالات الربو تتحسن ويكون التحسن أسرع عند استخدام الأدوية المناسبة. Most cases of Asthma improve and the improvement is faster when using the correct therapy.	لا يحس مريض الربو بتحسن Patients with Asthma Do not get better	1
اغلب حالات الربو يتم علاجها بسهولة بالانتظام على البخاخ الواقي و تبقى حالات نادرة يصعب علاجها. Most cases of Asthma can be easily treated by being regular on preventive inhaler therapy. Rare cases remain difficult to treat.	يصعب عادة علاج الربو Asthma is generally Difficult to Treat	2
الربو مرض ناتج عن التهاب وتهيج في القصبات الهوائية وليس مرضا نفسيا وإنما احد مثيراته النواحي النفسية. Asthma results from inflammation of the airways and is not a psychiatric disease. Psychiatric disease is however, one of its exacerbaters.	الربو مرض نفسي Asthma is a Psychiatric Illness	3
الربو لا يؤدي إلى مشاكل نفسيه تذكر إذا كان التحكم فيه جيدا. Asthma dose not lead to significant psychiatric disease if it is well-controlled.	الربو يؤدي إلى مشاكل نفسيه كثيرة Asthma Leads to Many Psychiatric Problems	4
إن أهم الجوانب العلاجية لمرضى الربو هو تجنب مثيرات الحساسية العديدة التي تؤثر على المريض إذا أمكن تحديدها . The most important treatment intervention for patients with Asthma is to avoid the many allergy precipitants that may be the cause of the patient's symptoms.	لا يساعد تجنب مثيرات الحساسية على تحسن الربو Avoiding Allergens/Irritants Do not Improve Asthma Symptoms	5
اغلب حالات الربو تنتج عن احد مثيرات الحساسية أو من التهاب فيروسي. لذا لا يحتاج المريض عادة إلى مضاد حيوي. Most cases of asthma exacerbations result from either exposure to allergens or viral infection. For these reasons, antibiotics are not needed for its treatment.	تستخدم المضادات الحيوية عند حدوث أزمات الربو Antibiotics are Used to Treat Asthma Exacerbations	6
إذا كان التحكم في مرض الربو جيدا، فإنه بإذن الله لا يؤدي إلى مشاكل ذات أهمية . If control of Asthma is very good, then by God's grace, Asthma will not lead to serious health issues.	الربو يؤدي إلى مشاكل مزمنة عند الكبر Asthma Leads to Chronic Problems with Aging	7
في الغالب أن مريض الربو أو والده لا يستطيعوا تحديد حدة أزمة الربو بدقة، وفي الغالب يكون تقديرهم لحدة أزمة الربو اقل من الحدة الحقيقية للربو. Mostly, patients with Asthma or their parents fail to appreciate the severity of Asthma. The majority underestimate how bad an Asthma exacerbation is.	يبالغ مريض الربو أو والده في تحديد حدة أزمة الربو Asthmatics or their Parents Exaggerate Asthma Severity	8
المريض لا يتعود البخاخ، وإنما الذي يحدث انه عند استخدام بخاخ الربو يتحسن المريض و عندما يتركه أو لا ينتظم عليه تعود أعراض الربو إلى سابق عهدها فيظن المريض انه اعتاد البخاخ . Patients with Asthma donot get addicted to their inhalers. What happens is that when they stop using their inhalers on getting better, Asthma symptoms recur and the patient tends to think that he/she got addicted to the inhaler.	البخاخ يؤدي إلى أن يتعوده المريض Asthma Inhalers Lead to Addiction	9
لا يؤدي البخاخ الحاوي على الكورتيزون إلى مشاكل صحية تذكر . Inhalers containing steroids donot lead to significant health problems.	البخاخ المحتوي على الكورتيزون يؤدي في العادة إلى مشاكل صحية كثيرة Generally Speaking Steroid Inhalers Lead to Serious Health Problems	10

empower patients with more knowledge of their asthma, are of major significance both to the patients and to the health service as a whole. Essential knowledge regarding what asthma is and means to bring it under control are deficient. A good proportion felt that asthma is a psychiatric disease and that allergen avoidance is not useful. Unless patients understand and are made fully aware that asthma is caused by a chronic inflammation of the airways, that exposure to allergens contributes significantly to the aforementioned and that avoidance of exposure if at all possible is the corner stone for controlling symptoms, acceptable management outcomes will not be realized^{6,7}. Bronchodilator inhaler therapy for the relief of symptoms and steroid-containing inhalers for controlling the inflammation remain the two mainstay components of treatment⁶. Again and like in many other studies^{19,20,21}, Sudanese patients with asthma believed that these inhalers particularly steroid –containing ones, lead to addiction and to other serious side-effects. However, the percentage of patients with these misconceptions is much higher in our study than in Saudi patients¹⁶ (around 50%) and Canadian patients²⁰ (59%). This might be related to the level of education of patients as there is a clear correlation between the later and the presence of negative perceptions about steroid inhalers in asthma¹⁹. These assertions are clearly refuted by evidence²² and are associated with reduced drug compliance, poorer treatment outcomes and higher personal and public health expenditure^{10,11,12}. Similarly, patients' misconceptions about the use of antibiotics during asthma exacerbation when evidence confirm that these are mostly allergen or viral infection induced, will inevitably increase healthcare cost and may contribute to the increasing antibiotic resistance. Several studies have confirmed that patients with asthma have a serious tendency to underestimate the severity of their symptoms^{6,23}. This is mirrored in this study by the belief by our patients that patients with asthma over-estimate their disease severity. This is a complex issue and can only be

Table (2): Results of the Asthma Quiz (Number of Patients 143)

Item	No (%) Answering Positively	Unfilled Forms
Patients with Asthma Do not Get better	43 (30.5%)	2
Asthma is generally Difficult to Treat	52 (37.7%)	6
Asthma is a Psychiatric Illness	27 (19.4%)	4
Asthma Leads to Many Psychiatric Problems	71 (51.4%)	5
Avoiding Allergens/Irritants Do not Improve Asthma Symptoms	42 (30.3%)	9
Antibiotics are Used to Treat Asthma Exacerbations	64 (47.1%)	7
Asthma Leads to Chronic Problems with Aging	110 (81.9%)	10
Asthmatics or their Parents Exaggerate Asthma Severity	73 (55.7%)	12
Asthma Inhalers Lead to Addiction	104 (74.8%)	4
Generally Speaking Steroid Inhalers Lead to Serious Health Problems	101 (77.1%)	12

resolved by proper patient education on asthma and how to objectively assess the severity of their disease such as by a composite of symptoms or by assessing their peak flow rate^{6,7}. To that end all asthma guidelines recommend the use of home self-management plans by patients to gauge asthma severity and self-manage accordingly^{6,7}.

CONCLUSIONS:

There are many obstacles in the care of patients with asthma that are associated with poor asthma control. Based on our findings, knowledge on asthma in Sudanese patients is poor and may directly compromise further the limited available health care resources. Education on asthma, its pathogenesis, its medication and its prognosis; is and should be a primary public health undertaking as asthma has become a common chronic illness with a significant health and economic impact. For the treating physician, organizational change in asthma clinics to ensure proper asthma education is a patient right issue that should not be ignored. Our simple intervention assisted us in conveying important pieces of knowledge to our patients and may hopefully lead to better management outcomes.

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