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Pankhuri Jha

Thomas Jefferson University, pankhuri.jha@students.jefferson.edu

Jessica F. Most, MD

Thomas Jefferson University, jessica.most@jefferson.edu

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Increasing Patient Confidence in Managing Asthma using Asthma Action Plans

Pankhuri Jha, BS, Jessica F Most, MD

Asthma is a common illness affecting 8% of the US population and costing \$81.9 billion per year.^{1,2} Due to its chronic and variable nature, asthmatics need frequent medication adjustments, making management challenging for both physicians and patients. Studies show that patients can control their asthma using an asthma action plan (AAP), which includes directions for daily self-assessment, baseline medications and steps to facilitate detection and treatment of an exacerbation. Self-management education using AAPs is associated with a reduction in hospital admissions and ED visits by 40% and 20%, respectively.³ Despite evidence that AAPs are efficacious, the underlying reason for their success is not well understood.⁴ One hypothesis is that AAP implementation can increase patient confidence in managing asthma; however the literature regarding this topic is limited. Thus, the aim of our study was to determine whether AAP implementation leads to increased patient confidence in managing asthma.

Patients with a physician diagnosis of asthma without a current AAP at the time of their specialist visit were recruited to participate. An eight-question Likert Scale survey developed previously was used to gauge confidence regarding asthma management.⁵ At the initial visit, each patient completed the survey and received a personalized AAP along with a peak flow meter. Asthma control was assessed pre and post-AAP implementation using the Asthma Control Test (ACT), a validated measure of asthma control. A score of 19 or greater on the ACT indicates good control. The success of AAP implementation in increasing patient confidence and asthma control was determined by comparing pre and post-survey responses and ACT scores.

We recruited 71 patients, 17 of whom were excluded for lack of follow-up. Of the 54, 25 (46%) had severe, 21 (39%) had moderate and 8 (15%) had mild asthma. The mean patient age was 55.8 years and 63% were females (34/54).

Patient confidence using a peak flow meter increased by 45%, with 48% (26/54) rating confidence at ≥ 3 (4 being 'strongly agree that I am confident') at the initial visit to 93% (50/54) post-AAP implementation. Fifteen percent more patients felt confident managing asthma symptoms during an exacerbation, with 95% (51/54) rating confidence at ≥ 3 . The same 15% increase was observed when gauging patient confidence in knowing personal asthma triggers, with 89% (48/54) rating confidence at ≥ 3 . Recognizing asthma symptoms and confidence in preventing asthma

symptoms from occurring saw a 4% increase and 9% increase, respectively after AAP education. The mean pre and post-AAP Likert Scale survey scores were 23.28 and 25.70, respectively. AAP implementation was associated with significantly higher mean scores ($p=.0001$).

ACT data was available for 47/54 (87%) patients. Mean pre and post-AAP ACT scores were 18.49 and 20.11 respectively, and 68% (32/47) of patients scored a ≥ 19 on the follow-up ACT. AAP education was associated with significantly higher mean ACT scores ($p=.0043$).

There is limited data examining the direct relationship between AAP implementation and patient confidence in managing asthma. Our study is the first that demonstrates AAP administration directly increases patient confidence in managing asthma while improving asthma control. Limitations to our study include the variable time interval for follow-up and the lack of ongoing assessment to account for the variable nature of asthma control.

We found that AAP implementation was beneficial to our patient population in increasing self-reported confidence in asthma management and improving asthma control. With an increasing reliance on telemedicine visits during the COVID-19 pandemic, the importance of self-management has been brought to the forefront. AAPs are a simple and effective tool that permit physicians to hand control over care to their patients and are instrumental in promoting self-management.

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