Evaluation of a Web-based Educational Tool on Work-Related Asthma

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Introduction
- The electronic web-based educational tool to assess patients’ knowledge on work-related asthma was developed by researchers at the University of Toronto and McMaster University.
- The primary purpose of the educational tool is to disseminate knowledge of key definitions, common causes, symptoms of asthma and the necessary measures to take if asthma is suspected.

Background
- Asthma is a chronic inflammatory disease of the airways.
- Asthma is responsible for common symptoms such as cough, wheezing, and difficulty breathing.
- Work-related asthma (WRA) encompasses Occupational asthma (caused by work) and work-exacerbated asthma (in those with coincidental onset of asthma).
- Education of those with asthma may allow earlier recognition of WRA.

Objectives
- To ascertain the level of knowledge of work-related asthma from a sample of asthmatic patients in a tertiary clinic population.
- To test whether this web-based tool through http://www.workrelatedasthma.ca is effective in adequately educating patients on the fundamentals of the disease.
- To determine if specific demographic characteristics (i.e., gender, age) play a role in the level of knowledge of asthmatic patients.

Study Design
- To be a candidate for this study, the inclusion criteria included patients previously diagnosed with asthma, fully competent in English comprehension (reading and writing) and over the age of 16.
- Participants were provided with a questionnaire that inquired about the patient’s personal characteristics, asthma severity and knowledge-based questions on work-related asthma.
- Following the preliminary questionnaire, the electronic web-based tool was introduced to the patient and a summer research student described how to navigate through it.

Methods

Participants

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Participants (N=34)</th>
<th>Mean ± SD</th>
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</thead>
<tbody>
<tr>
<td>Male/female</td>
<td>11/23</td>
<td></td>
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<tr>
<td>Age (years)</td>
<td>50.7 ± 17.2</td>
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<tr>
<td>Age Range (years)</td>
<td>22-83</td>
<td></td>
</tr>
<tr>
<td>Time since Diagnosis (years)</td>
<td>21.8 ± 16.9</td>
<td></td>
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<tr>
<td>Working (yes/no)</td>
<td>23/11</td>
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As depicted in Figure 1, the post-score performance was significantly higher than average compared to the pre-score performance, with a P < 0.01.
- Participants who indicated that asthma did not play a role in their daily lives performed better on the pre web-tool questionnaire, yielding a P value < 0.05.
- Participants who had been admitted to the emergency room for their asthma at least once showed a significant increase in improvement rates between their pre- and post web-tool scores.
- The majority of candidates expressed satisfaction with the web-tool used.

Results Cont’d

Discussion
- As reflected by the improvement of performance (p = 0.001), this web-based tool was effective in educating asthma patients of their illness and concepts surrounding work-related asthma.
- It can be reasonably inferred that those patients who indicated that asthma did not interfere with their lives (and scored better prior to exposure to the tool) may be more knowledgeable of their illness and even have a higher rate of treatment adherence.
- These data produced by this study may be useful for future research in exploring the most effective and efficient way of educating patients about asthma.
- It is hoped that enhanced awareness of asthma via educational tools will mitigate the delay between the onset and diagnosis of work-related (potentially in schools and workplaces).

References