Telehealth Interventions for Pediatric Asthma Management

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BACKGROUND

Asthma is a chronic disease of the airways involving airway inflammation and remodeling. It includes both genetic and environmental elements as causative factors. Exacerbations are related to increased acute symptoms, decreased quality of life, and asthma fatalities (Papi et al., 2018).

National and state objectives underscore the importance of asthma management, which is supported through effective asthma education. What remains unknown is if telehealth technology is an effective way to deliver asthma education.

This inquiry has led to the PICO question, in pediatric patients with asthma (P), how does telehealth asthma education (I) compared to standard care (C) impact asthma management and adherence?

PsychINFO, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), and The Cochrane Library were extensively searched.

Ten studies were retained for evaluation and synthesis. The appraised body of evidence is relevant to interventions for asthma management and helps determine if telehealth is an effective way to deliver asthma education to patients and their caregivers.

Appraised Body of Evidence

<table>
<thead>
<tr>
<th>Studies</th>
<th>Year</th>
<th>LOE</th>
<th>Design</th>
<th>Mean Age</th>
<th>Attrition</th>
<th>Country</th>
<th>n participants</th>
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</thead>
<tbody>
<tr>
<td>Bender et al.</td>
<td>2015</td>
<td>I I</td>
<td>RCT</td>
<td>8.1</td>
<td>10%</td>
<td>USA</td>
<td>1756</td>
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<tr>
<td>Halterman et al.</td>
<td>2016</td>
<td>I I</td>
<td>RCT</td>
<td>7.8</td>
<td>&lt;1%</td>
<td>USA</td>
<td>2018</td>
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<tr>
<td>Johnson et al.</td>
<td>2016</td>
<td>I I</td>
<td>RCT</td>
<td>13.9</td>
<td>&lt;1%</td>
<td>USA</td>
<td>400</td>
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<tr>
<td>Kolmodin et al.</td>
<td>2017</td>
<td>I I</td>
<td>RCT</td>
<td>22.4</td>
<td>&lt;1%</td>
<td>USA</td>
<td>98</td>
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<tr>
<td>MacDonnell et al.</td>
<td>2018</td>
<td>I I</td>
<td>RCT</td>
<td>15.1</td>
<td>&lt;1%</td>
<td>USA</td>
<td>50</td>
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<tr>
<td>Kosse et al.</td>
<td>2019</td>
<td>I I</td>
<td>RCT</td>
<td>28.1</td>
<td>&lt;1%</td>
<td>USA</td>
<td>523</td>
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<tr>
<td>Koufopoulos et al.</td>
<td>2019</td>
<td>I I</td>
<td>Q E</td>
<td>8.4</td>
<td>52%</td>
<td>NL</td>
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<tr>
<td>Kourmpagioti et al.</td>
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<td>I I</td>
<td>RCT</td>
<td>13.7</td>
<td>12%</td>
<td>UK</td>
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<tr>
<td>Lin et al.</td>
<td>2019</td>
<td>I I</td>
<td>RCT</td>
<td>7.95</td>
<td>0</td>
<td>NL</td>
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<tr>
<td>Le et al.</td>
<td>2018</td>
<td>I I</td>
<td>CRT</td>
<td>9.6</td>
<td>&lt;1%</td>
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</table>

Project Objectives

This inquiry has led to the PICO question, in pediatric patients with asthma (P), how does telehealth asthma education (I) compared to standard care (C) impact asthma management and adherence?

Summary of Findings

The evidence supports the use of telehealth technology to help support and improve pediatric asthma management.

Telehealth for the management of asthma can effectively increase medication adherence and asthma control.

The synthesis supports telehealth asthma education that is engaging to both patient and caregiver and includes multiple interactions to promote behavior change.

Future Directions

The Model for Evidence-Based Practice Change will guide the implementation of this telehealth asthma education project at the project site. A search for current evidence will be ongoing during this project as new evidence is expected to be reported in the coming year.

REFERENCES


Koufopoulos, T. J., Conner, M. T., Gardner, P. H., & Kellar, I. (2016). A web-based and mobile health social support intervention to promote adherence to inhaled asthma medications: Randomized controlled trial. Journal of Medical Internet Research, 18(6), e122. https://doi.org/10.2196/jmir.4863


