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Evaluating Dental Health Professionals about People with Intellectual and Developmental Disabilities

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Background
Dental schools and dental hygiene programs are required to incorporate specialized training in their programs to serve people with special needs, however people with intellectual and developmental disability (I/DD) continue to experience poor oral health outcomes. Access to clinicians with the desire and skill to care for people with I/DD remains a challenge. There is a need to understand the best approaches to improve access, and to reduce disparity in oral health, for this vulnerable population representing approximately 1-3% of the general population. Researchers are systematically investigating the literature to uncover evidence of effective approaches to improve access and to support good oral health behaviors. These approaches should be integrated into educational curricula.

The key question: "Do professional educational experiences impact providers (dentists, hygienists and others) attitudes toward (willingness), or ability to treat individuals with I/DD?"

Methods
The systematic review included databases such as PubMed, as well as gray literature. Broad search terms were used to uncover interventions to improve both access to oral health and support good oral health behaviors in individuals with I/DD. Initial results yielded 4,854 articles. Title and abstract screening excluded 4,354 articles that did not meet the inclusion criteria. Literature searching resulted in approximately 400 articles for full text review, and 125 for data abstraction. To uncover the state of evidence, a systematic literature review was performed to identify relevant publications. A search of the literature was conducted using a combination of PubMed, Ovid, and Google Scholar. The search was limited to articles published in English and published after 1990. The search terms included "intellectual disability" and "oral health." The search was conducted in October 2019.

Results
Fifteen articles were identified to have a clear I/DD population definition, intervention, and outcome. Articles were reviewed in detail with structured abstraction of results entered into the AHRQ Systematic Review Data Repository. Interventions measured:
1. Assess educational experience/knowledge acquisition: curriculum for orthodontists, dentists, & hygienists
2. Assess attitudes toward treating persons with I/DD
3. Assess an educational model: virtual patient, service learning, interprofessional model
4. Assess comfort/satisfaction with technique or materials: behavior management, available information, experience

Interventions were delivered by lecture (3), virtual patient models (2), case base learning (1), service learning (1) and combination video/text based (1). Length of interventions ranged from a 45 minute lecture to an 8 hour practicum. Sample size ranged from 23 to 568 and studies surveyed a variety of student and professionals.

Quality of Evidence
Using questions adapted from The Community Guide Data Abstraction Form, clinical experts provided an interpretation of external validity, while a research methodologist accomplished a separate review of internal validity. Few studies rated "good" for both internal and external validity.

<table>
<thead>
<tr>
<th>Study Subjects</th>
<th># of Studies</th>
<th>Outcomes</th>
<th># of articles containing the outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (dental, hygiene)</td>
<td>6</td>
<td>Curriculum related (i.e., content, satisfaction)</td>
<td>9</td>
</tr>
<tr>
<td>Dentists</td>
<td>3</td>
<td>Education/Knowledge (i.e., gained, experience)</td>
<td>6</td>
</tr>
<tr>
<td>Individuals with I/DD</td>
<td>2</td>
<td>Attitudes/Beliefs (i.e., perception)</td>
<td>5</td>
</tr>
<tr>
<td>Orthodontists, Hygienists, Nurse Practitioners, Other health providers</td>
<td>1 each</td>
<td>Behavior Management (i.e., knowledge, experience, comfort)</td>
<td>4</td>
</tr>
<tr>
<td>Ten of the 15 studies were surveys, measuring 38 total outcomes.</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Conclusions
Exposure to individuals with I/DD, whether that be through curriculum, practical experience, or other means has a positive impact on a providers attitudes toward treating individuals and including individuals with I/DD in their practice. There are limited studies to describe the impact of educational interventions toward this population. Further research and evaluation is needed.

Notes:
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