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Determining the Instructional Effectiveness of an Online Resident Vaccine Curriculum

S. Elizabeth Williams

Shannon Clark  
*Children's Mercy Hospital, sclark2@cmh.edu*

Barbara A. Pahud  
*Children's Mercy Hospital, bapahud@cmh.edu*

Sharon Humiston  
*Children's Mercy, Kansas City, sghumiston@cmh.edu*

Donald Middleton

*See next page for additional authors*

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Authors
S. Elizabeth Williams, Shannon Clark, Barbara A. Pahud, Sharon Humiston, Donald Middleton, and Kadriye O. Lewis

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Determining the Instructional Effectiveness of an Online Resident Vaccine Curriculum

S. Elizabeth Williams, MD MPH; Shannon Clark, MPH; Barbara Pahud MD MPH; Sharon Humiston, MD MPH; Donald Middleton, MD; Kadriye O. Lewis, EdD

Vanderbilt University Medical Center, Nashville, TN, Children’s Mercy Kansas City, Kansas City, MO, Society of Teachers of Family Medicine, Leawood, KS

Background

Immunization education for residents and other healthcare providers is deficient. Recognizing this educational deficiency, we developed four online modules through the collaboration for Vaccine Education and Research (CoVER) project.

Objective

To determine the instructional effectiveness of the CoVER curriculum from the perspectives of medical resident experiences.

Methods

- We conducted focus group interviews with a convenience sample of residents from four pediatric residency programs in the fall of 2018.
- Interviews were conducted in reserved rooms at each institution and facilitated by a moderator.
- 13 key questions were posed which focused on content design, learning engagement, satisfaction with the learning platform, and suggestions for module improvement.
- Supplementary questions were utilized when needed for clarification.
- Interviews were transcribed and analyzed by two independent coders using thematic content analysis as well as partially applying open, axial and selective coding procedures from grounded theory principles.

Results

Residents’ Reflections and Learning Experiences (N=28)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Descriptions</th>
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| Content Design | - Appropriate and sufficient content  
- Clear content presentation  
- Well-selected resources  
- Multimedia integrated content and videos  
- Functional and usable information  
- Assessment attraction (quizzes) |
| Module Structure | - Logical sequencing of the content  
- Relevant small chunks of information  
- Interactive graphics  
- Visually appealing charts and images  
- Well selected multimedia areas with videos  
- Well-structured variety of activities (infographics, simple games, knowledge checks, segmented content design, external links)  
- Integrated supplementary content (pdf articles) |
| Learning Engagement | - Manageable chunk of information  
- Not too heavy  
- Memorable instructional tools  
- Variety of visual images and art  
- Interactive content |
| Perceived Learning and Confidence | - Gaining new knowledge that positively impacted residents' confidence in recommending vaccines for patients  
- Increased confidence in discussing vaccines with parents/patients |
| Perceived Challenges | - A few problems with the Learning Management System (Correction)  
- A few login difficulties  
- User interface for the progress indicator |
| Recommendations for Fixes | - Developing apps for a quick access  
- New website resources  
- Enhanced content for tracking on vaccine communication  
- More modules on specific topics such as how to respond/communicate to vaccine resistant patients and direct examples of common vaccine myths |
| Overall Satisfaction | - Strong modules that the residents had completed so far previously  
- Clear layout and visual design  
- User-friendly design  
- Embedded resources and articles |

CoVER Modules

4 web-based modules focused on key aspects of vaccines and vaccination:
1. Vaccine Fundamentals
2. Vaccine Preventable Diseases
3. Vaccine Safety
4. Hesitancy and Communication

Developed using best practices in instruction design principles derived from ARCS Model, Multimedia Learning, and Cognitive Load Theory.

Conclusions

This qualitative study helped us gain deeper insights into the effectiveness of the methodologies and theory-driven instructional design principles utilized within the CoVER modules.

Results support that well-designed modules produce higher learning satisfaction and positive impact on learners.

Despite overall satisfaction with the modules, technical challenges were identified by participants.

Future Directions

Identified strengths of the CoVER modules will guide our future developments, including usability testing to improve the accessibility of the technical platform.

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