

Clinical Research Results Abstract

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Acceptability, feasibility and usability of ALRITE, a mobile health tool to improve diagnosis of acute lower respiratory illnesses in Ugandan children

Laura Ellington¹, Irene Najjingo², Margaret Rosenfeld³, James Stout¹, Stephanie Farquhar¹, Bridget Nekesa², Zaituni Namiya², Agatha Jane Kruse¹, Aditya Vashistha⁴, Richard Anderson¹, Rebecca Nantanda⁵

¹University of Washington, ²Makerere Lung Institute, ³University of Washington - Seattle Children's, ⁴Cornell University, ⁵Makerere Lung institute

Aim: Acute lower respiratory infections (ALRI) are the leading cause of mortality in children under 5 years, with almost all deaths occurring in low-resource settings (LRS). Strong evidence suggests that, among children with ALRI in LRS, pneumonia is over-diagnosed, wheezing is under-diagnosed, and antibiotic prescribing is suboptimal. The World Health Organization Integrated Management of Childhood Illnesses (IMCI) includes guidelines for ALRI consisting of both pneumonia and wheezing illnesses in LRS, yet adherence is poor. We have developed a mobile health decision support tool, ALRITE (Acute Lower Respiratory Illness Treatment and Evaluation), to help health workers adhere to IMCI and differentiate wheezing illnesses from pneumonia. The study goal was to evaluate the feasibility, acceptability, and usability of ALRITE with Ugandan healthcare providers.

Methods: We conducted a formative mixed methods study at two district health centers in Jinja District of Uganda. We performed provider focus groups, individual usability testing, and key stakeholder interviews. We performed preliminary deductive analysis evaluating usability, acceptability, and feasibility of ALRITE.

Results: In January 2020, we enrolled 28 participants (5 clinical officers, 20 nurses, and 3 stakeholders). All participants owned a mobile phone and over half had a smartphone. Smartphone users performed better on usability testing, but all participants improved with practice. Participants reported high acceptability of the app, with simplicity, ease of use, and educational videos as perceived benefits of ALRITE. Concerns around feasibility included duplicate data entry, added time for patient encounters, and access to inhaled bronchodilators for patients presenting with wheezing.

Conclusion: Preliminary results suggest ALRITE is acceptable and usable by frontline providers in these health centers in Uganda. Future directions will include optimizing the ALRITE app based on feedback from the study sites, field testing and evaluation of effectiveness in improving diagnosis, exploring bronchodilator availability, and treatment of ALRI in under-fives.

Declaration of Interest

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