

CUSTOMIZING A USER-CENTRIC MOBILE APP TO ADDRESS COVID-19 PEDIATRIC VACCINE CAREGIVER CONCERNS

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BACKGROUND. The low uptake of COVID-19 vaccines among children and adolescents, primarily driven by parental concerns, presents a critical public health challenge. In many regions of the United States, vaccine coverage remains suboptimal, particularly among young children. Despite recommendations for COVID-19 vaccination in children aged six months and older, as of May 3, 2023, the CDC recorded, only 13% of US children under 5 years old, 39% of 5–11-year-olds, 68% of 12–17-year-olds have received at least one dose of the vaccine.

SIGNIFICANCE OF THE PROBLEM. The underutilization of COVID-19 vaccines in this population underscores the need to address parental concerns and informational gaps to enhance vaccine acceptance.

HYPOTHESIS, PROBLEM, OR QUESTION. We aimed to develop a parent/caregiver-directed mobile application (app) known as the COVID-19 Vaccine Uptake app, tailored to address the specific informational needs and concerns related to COVID-19 vaccination.

EXPERIMENTAL DESIGN. The development process involved three key phases: designing the core app structure, customization according to user demographics, and incorporation of local clinic-specific information. Subsequently, the app underwent two rounds of user acceptance testing with parents representative of the target user group. Phase 1 assessed task completion, A/B version comparisons of core content, overall usability, workload, and trust. Phase 2 aimed to validate the improvements made based on Phase 1 feedback. Usability metrics collected were ease of use, user satisfaction, trust, and cognitive load.

RESULTS. Thirteen users participated in the user acceptance testing, with 11 providing feedback in English and 2 in Spanish. An impressive 95% of users found the app easy to use, 85% expressed satisfaction with the app, and 73% regarded it as a reliable source of information. Users reported low mental, temporal, and cognitive demands. Primary usability concerns included a preference for scrolling rather than clicking to access new content and a desire for increased visibility of references supporting app content. Most users reported enhanced trust in the information provided, particularly when associated with local clinic providers and branding.

CONCLUSIONS. Parents and caregivers strongly agreed that the COVID-19 Vaccine Uptake app was easy to use, satisfied their information needs, and was a trustworthy information source. Employing user-centered design principles led to the development of a user-friendly app that effectively delivered information and instilled trust among participants. The app holds promise as a valuable tool in addressing vaccine hesitancy and promoting vaccine uptake among children and adolescents.