Enhancing Trauma Patient Experience Through Education and Engagement: Development of a Mobile Application

Benjamin Randolph Childs, BS*; Anna Marie Swetz; Brendan Andres, BA; Mary Alice Breslin, BA; Sarah Hendrickson, MEd; Timothy A. Moore, MD; Vanessa P. Ho, MD, MPH; Heather A. Vallier, MD MetroHealth System, Cleveland, OH, United States*

Purpose: The purpose was to determine the feasibility of using an open-access mobile device application to improve patient education and engagement during recovery after trauma.

Methods: A patient education app was developed to provide basic information regarding injury, treatment, and recovery for orthopaedic and other injuries at a 5th grade reading level. Providers, patients, and families were made aware of the app in an urban, public academic Level-I trauma center. Surveys were obtained regarding experience with the app. Decision to use or not use the app, age, satisfaction, reasons for not using the app, and desired improvements were gathered from the survey. Analytical data regarding downloads were collected from the app retailer.

Results: The app was downloaded 314 times from Google Play and Apple stores. User sessions (individual app uses) were split in a bimodal distribution between those who used the app for greater than 2 minutes (36%) and those who used for less than a few seconds (40%). Pages in the app were viewed 3952 times in 2 years. Patients visited "My Injury", "Recovery Timeline", and "FAQ" most often. The majority (55%) of users rated it as helpful or extremely helpful on a 5-point Likert scale. Surveys revealed that 48% of those offered the app used it, and that 68% of users were patients, 23% spouses, and 9% other family members. There was no gender difference in app participation, both 48%. Participation was less in those age ≥55 years (12% vs 68%, $P < 0.001$), also reflected in mechanism of injury with 82% of those admitted for motor vehicle collision versus 9.1% of those who fell from standing, using the app, $P < 0.001$. 17% of patients did not have a device to use the app. Most patients without phones had them damaged or lost during their trauma. Suggestions for improvements included more information on nonorthopaedic injuries and Spanish language.

Conclusion: There was strong interest in this simple and free patient education app. Over one-third of user sessions were greater than 2 minutes, and a majority of patients reported high satisfaction. Despite a relatively low-income population, 5 of 6 patients had access to an app-capable device. Nearly half of patients downloaded the app when offered. Those above age 55 years were less likely to use the app. This represents an innovative opportunity for education and engagement of our patients and their families.

See the meeting app for complete listing of authors' disclosure information.