

Assessing Mobile Health Technologies for Medication Compliance and Nutrition Tracking for Possible Use by Kidney Transplant Candidates

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Numerous free or low - cost mobile applications for tracking nutrition and medication compliance have become available in recent years. While these appear to be promising tools, few of them have been examined in clinical studies, and thus limited evidence is available as to the efficacy of these applications. Moreover, levels of engagement with and adherence to these applications tend to differ by age, socioeconomic status, education, and other user - specific factors, and there are even fewer studies that investigate what kind of design appeals to which users. We propose to perform an exploratory study that systematically catalogues and assesses mobile applications designed to assist medication compliance and nutrition tracking. In the process, a team of quantitative and qualitative health researchers, their research assistants, a computer scientist, and a physician at the George Washington University Hospital will classify the design and functionality of the collected applications. Our ultimate goal is to apply for external grants including a NSF/NIH Smart - Connected Health grant to examine the functionality and user - interface design of the mobile applications that are effective for dialysis patients who are waitlisted for kidney transplants. In particular, we are interested in identifying the application features that are effective among minority and patients with a low socioeconomic background. Three types of activities will be undertaken in the proposed project. First, we will survey and catalog existing mobile applications used for tracking nutrition and medication. Second, we will conduct a literature review in the area of mobile health technologies. Third, the multidisciplinary team will meet to discuss classifying the applications, the selection of mobile applications used for interventions in future projects, and specific research designs for those interventions, such as sample size, focus group design, and advantages and disadvantages of developing our own mobile application. The project will also produce two review articles on medication compliance and nutrition tracking applications. In light of the recent explosion of medical applications, comprehensive review articles cataloguing and assessing these numerous applications would help those patients and physicians contemplating the use of these applications.