INCREASING ENGAGEMENT IN EHEALTH INTERVENTIONS USING PERSONALIZATION AND IMPLEMENTATION INTENTIONS

OVERSIGHT FOR MOBILE APPLICATIONS THAT ASSESS AND TREAT MENTAL ILLNESSES

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SOCIOTECHNICAL SYNTHESIS

Electronic delivery of traditional therapy has immense potential to increase accessibility of treatment for mental illnesses. The MindTrails program uses Cognitive-behavioral modification for interpretation to decrease the users' general anxiety symptoms through online sessions. My capstone team and I introduced new features focused on personalization and goal-setting to the existing MindTrails Web program alongside prototyping this program to be run on a mobile application for a smartphone. The MindTrails program is based in a traditional form of therapy and is the focus of an ongoing study to understand the efficacy of cognitive-behavioral therapy delivered electronically. Individually, I researched standards that all mobile applications are held to and how health apps are regulated. I found that there is a gap in oversight for mental health apps and proposed that there should be a standard way to develop and assess a mental health app so that there is more transparency and trust in this form of electronic therapy. My technical project and STS research project are tightly connected as my technical project is a great example of the type of apps that I based my regulation research in.

Mental health apps have the potential to reach people seeking in-person therapy that may have faced high barriers to traditional treatment. The MindTrails program was facing high dropout rates after the first session. The capstone team aimed to increase user engagement with the program by creating more personalized scenarios and by giving users the ability to set goals. To increase personalization, the team decided to allow the user to choose which domain they will work on during each session and each scenario would be more applicable to them based on their information. For example, if the user is a student, they will be faced with a situation that describes a new class rather than a new job. The team also added goal-setting features by having the user copy down implementation intentions throughout the session that they can look back on

after the session is over. Additionally, the team created a prototype of the program as a mobile app.

After creating a prototype of the MindTrails app, the team recruited people for remote interviews about the new design and features. The pilot study was a set of open-ended and Likert scale rating questions to gain insight on how users interact with the new features and app. Due to unforeseen circumstances as a result of the COVID-19 outbreak, the team was only able to host the user study, virtually, for one week. For future work, teams should focus on developing an algorithm for personalizing the MindTrails scenario content and conduct additional user studies before developing the app.

My STS research question is about who should provide oversight for mental health applications and how should they set the standards? In order to increase transparency and reliability of these apps, the risk and responsibility of using these apps must be shifted off of the consumer and distributed amongst other organizations in the network. I introduced case studies, compared regulations for health apps, and listed the stakeholders using Actor-Network Theory to provide evidence that there is room for oversight.

In conclusion, app developers should be required to self-identify their app in the tiered levels of credibility based on upstream, midstream, and downstream categorizations, which should be available to the user before downloading the app. Additionally, primary care doctors should be able to prescribe their patients apps that they have reviewed. These recommendations are based off of the Australian case study by Lisa Parker and colleagues in 2019, “The ‘Hot Potato’ of Mental Health App Regulation: A Critical Case Study of Australian Policy Arena” with a piece about the importance of the role of primary care doctors, “The Role of Family

Physicians," by Benjamin Miller and Benjamin Druss in 2013. This multi-faceted conclusion calls for more attention from multiple stakeholders to better this technology to its full potential.

In conclusion, electronic delivery has potential in increasing accessibility of mental healthcare, but could benefit from more research into the efficacy of these apps and what features work or do not work. Oversight must be put in place to ensure that the technology reaches this potential with concern for the users' health as the central goal.

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