

Challenges in Developing Health Behavior Change Support Systems

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Technologies for health behavior change have developed at rapid speeds in the last decade [1]. However, challenges of user access to, and sustained engagement with, are persistent. Behavior Change Support Systems (BCSS) are persuasive systems that have been designed with the intent to influence user behaviors. [1]. Designing BCSS interventions with, and building technology platforms for, the end-users is a major area of research to combat these challenges and achieve the health and user enjoyment outcomes desired. Our session will present a wide range of cutting-edge research addressing the challenges to e-technology use for health behavior change.

First, the construction of a BCSS platform for populations with mental health disparities will be examined. Warren and colleagues report about the process of developing support for an ecosystem of behavioral intervention technologies. Four key functional requirements were identified: identity management, assessment collection and reasoning, usage logging and research protocol workflow support [2]. A window into what sustainable delivery paired with ongoing research studies looks like for end-users who are in deep need of BCSS is provided.

Secondly, we will consider tackling the challenge of user engagement using design strategies. As Dick and colleagues [3] purport, low efficacy of interventions may be due to a lack of end-user involvement in the beginning stages of intervention development. Inclusion of end-users in the process of BCSS design has been shown to increase intervention relevancy for the intended population, boosting user engagement in the intervention itself. Through exploratory workshops consisting of end-users and experts, “personas” for intervention content were created [3]. This is analogous to the stories of virtual patients to impact healthcare provider referral behaviors for an online intervention.

Third, we will examine a potential predictor to user engagement in BCSS; user enjoyment of BCSS. While related, user enjoyment of an intervention may explain user engagement or use of an intervention, revealing an alternate or additional way of determining facilitators, or barriers, to BCSS use. While early on in its development and testing, the Exergame Enjoyment Questionnaire created by

Fitzgerald and colleagues [4] is a promising and exciting start to considering not just if players are using an intervention, but if they’re enjoying it.

Lastly, we will consider the health impact of a well-known BCSS: “Pokemon GO”. In a short three years, some 300 papers have been written on it. Laato and colleagues [5] identified and report on 20 papers which examine the game’s impact on players’ physical activity (PA). This systematic review provides detail on study characteristics, measurement method, change in PA and the duration of the study. Overall, 60% of the studies reported an increase in PA and 30% reported a short-term increase in it [5]. Limitations of studies examining change in PA were short duration, use of self-report, and the majority conducted using an early iteration of the game.

The science of BCSS is progressing. Not only are innovators examining interventions themselves, but ways to support the use, engagement with and access to these games for populations. Future work to further develop design protocols, refined measurement methods, and more rigorous and long-term research of impact for BCSS is needed.

References

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