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Leveraging the Biopsychosocial Model of Health to Assess Perceived Relevance of Digital Health: Scale Development

TREO Talk Paper

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Abstract

Chronic disease is the leading cause of death and disability and the leading driver of annual healthcare costs (\$3.5 trillion in annual healthcare costs (CDC 2019)) in the United States. Digital health interventions (DHIs), defined as health interventions delivered via smartphones and websites, hold great potential for patient's self-management of chronic health conditions across the continuum of care. Despite the potential of DHIs, challenges preventing the full realization of the DHI benefits still exist. One of the major challenges is low user engagement, which involves both behavioral (i.e., offline engagement outside the context of DHI) and technological (i.e., usage) engagement with DHIs (Birnbbaum et al. 2015; Yardley et al. 2016).

The Information Systems (IS) and Human-Computer Interaction (HCI) disciplines informed various technological and behavioral aspects of user engagement with DHI. The IS research focused on the overall impression of technology (e.g., whether an app is perceived as useful) concerning user's intent to adopt and continue to use technology, while the field of persuasive technology in HCI attempted to understand specific features that might be driving user engagement with health behaviors (i.e., health behavior change resulting from technology use). Even though various aspects of user engagement were informed by IS and HCI (resulting in various instantiations of DHIs), the issue of problematic user engagement prevails. One possible explanation for problematic user engagement is DHI's failure to feel relatable to patients (Birnbbaum et al., 2015). Studies report that current DHIs fail to account for and reflect user's experiences of illness, despite patient's reports that they are interested in engaging with DHIs, as long as these tools feel relevant to their health and illness experiences.

Although the concept of relevance received significant attention in various disciplines (e.g., information science, philosophy, communications, marketing), it is not clear what relevance means in the context of DHI design. Therefore, this study aims to develop a psychometrically sound and robust measure of digital health design relevance from the patient's perspective. As relevance is concerned with the state of being closely connected or appropriate, its conceptualization in health should center around the patient's illness experiences. The biopsychosocial model of health supports the idea of the centrality of person's private experiences (biological, psychological, and social influences) forming patient's illness perception (Kusnanto et al. 2018). This study will leverage the biopsychosocial model of health to inform the scale development process to reflect end-user's health and illness experiences.

References

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