The Society of Behavioral Medicine's 46th Annual Meeting & Scientific Sessions, San Francisco, CA, March 26 - 29, 2025

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Paper Session 17: Digital Health
"Behavioral Mechanisms Driving the Uptake and Sustained Use of Digital Health Interventions in a Multicultural Population"

Imperial B, Friday, March 28, 1:00 PM-1:50 PM

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Digital health interventions (DHIs) can offer personalized health behavior support, at scale, and on demand. Yet, the uptake of DHIs remains poor amongst vulnerable or minority groups and attrition is a problem that threatens their effectiveness. Taking a systems thinking approach, this qualitative study aimed to (1) better understand the mechanisms of action that underpin DHI use by a multiethnic and diverse group of adults, and (2) suggest evidence-based actions that can be taken to address the issue of uptake and sustained use of DHIs by everyone in society.

A qualitative study was conducted whereby lay facilitators approached adult patrons at seven public eateries (Hawker Centers) in residential areas of Singapore to engage in a short informal interview. A semi-structured topic guide was used to explore the daily motivations and barriers towards uptake and sustained use of DHIs. Data were analyzed using inductive thematic analysis followed by deductive mapping to behavior change theory, using the Theory and Techniques Tool, to identify the mechanisms of action (MoA) and effective behavior change techniques (BCTs) that influence DHI uptake and use. Lay facilitators interacted with 118 individuals who discussed both positive and negative perceptions and experiences regarding the use of DHIs. Five themes that explain DHI usage were identified: (1) awareness, (2) appraisal of value, (3) accessibility, (4) trust, and (5) user experience. Themes were mapped to 15 MoAs and 29 corresponding BCTs that could inform strategies to improve uptake and use of DHIs. Community-based promotion of credible and accessible DHIs alongside behavioral cuing and digital literacy training could overcome perceived barriers towards DHI uptake. Brief counseling integrated within primary care services and routine screening programs could assist individuals in their appraisal of DHIs and motivate their uptake and use. Variable rewards that link to individuals' core values could motivate longer term DHI use. Finally, DHI designers should not underestimate the importance of simple and gamified user experiences, as well as features that support feedback processes and behavioral cueing, to ensure sustained use.

The design and wide-scale implementation of accessible, motivating, trustworthy, and user-friendly DHIs, that are promoted widely in community settings, will address barriers to uptake and sustained use by diverse and vulnerable communities and narrow the digital divide.