Introduction to Health Behavior Change Support Systems

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More than ever, behaviour change perspectives play a significant role in healthcare management and personalized care. Health behavior change support systems (HBCSS) assist in disease prevention, health promotion and healthcare management [1]. To date, many studies have published with the HBCSS perspective [2], and have applied this perspective to persuasive technologies in biomedical informatics [3,4], health education and consumer engagement [5-7].

For our 2021 mini-track, six peer-reviewed manuscripts were accepted and further the science around HBCSS. Topics include health behaviour promotion, identifying the determinants of trust in information technology, and provide primary task support such as tailoring, personalization and behaviour change support through nudging users.

Chung et al. [8] presented health behaviour change support in breaking established habits and promoting healthy behaviours. The paper presented the theory-driven design principles for preventive action in the context of disease outbreaks.

Rahman et al. [9] studied Generation Z and Millennials' views on trust in healthcare technology, perceived benefits of technology and comfort with disclosure of personal health information. A healthcare technology trust calculus model is presented in their study and validated using quantitative data analysis.

Merrill et al. [10] pilot tested a smartphone application on a personalized feedback intervention for heavy alcohol users. This study reports the feasibility and acceptability of this personalized feedback for this population.

Self-management education for advanced cancer pain management was developed through a four-phase iterative process and was usability tested by Azizoddin et al. [11]. The study demonstrated health behaviour change support through a patient-centered mobile health application could improve a patient's experience in cancer pain management.

Ostern et al. [12] proposed a gamified design for adhering to Tuberculosis treatment. The application will support patient empowerment and community building. The paper presented their study on gamified system development using a design science research methodology.

Zetterholm et al. [13] presented their design thinking study on primary prevention of virus transmission during pandemics and how mobile solutions could assist in behavior change by utilizing the Nudge Theory.

Using an innovative combination of behavioural theory and mobile technology design, these papers present the contribution of HBCSS in multiple areas. Topics include disease self-management, support and empowerment for various populations, including those with a need for alcohol abstinence, cancer pain management, and tuberculosis treatment adherence [10-12], as well as the promotion of consumer trust in applications [9]. Recent events with the coronavirus disease 2019 (COVID-19) have influenced interest in the application of HBCSS on disease prevention during pandemics [8,13], proving the adaptability and strength of HBCSS in addressing real-world problems.

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