# ICT-Enabled Self-Management of Chronic Diseases and Conditions Minitrack

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This minitrack focuses on the work related to patients with chronic disease who engage in self-managed health through information and communication technologies (ICT), such as mobile technologies and machine learning. Chronic diseases, such as diabetes and asthma, are those that last for more than three months [4] and generally cannot be prevented by vaccines or cured by medication [1]. Self-management (SM) refers to a care management approach in which patients actively take responsibility for treating their chronic diseases [2]. It is a self-regulating, dynamic, continuous, interactive process [3].

The scope of the mini-track gives opportunities for researchers to highlight their work that focus on the technology-enabled SM of chronic diseases and conditions. It encourages researchers to take a variety of approaches answering research questions related to the design, development, and use of ICTs on patient-centered care.

The papers of this minitrack fall under new and ongoing areas of research such as virtualization of health coaching, ad hoc decision support systems for monitoring patients' symptoms, and the use of social media and gaming for managing healthcare related issues.

The first paper, "Wanted! – virtual coach for people with thorny diseases" proposes a concept of a virtual coach to be used by people who endure expensive and challenging chronic diseases. The construction of the concept was based on prior design science research.

The second paper, "Certainty modeling of a decision support system for mobile monitoring of exercise-induced respiratory conditions" applies the certainty theory to model inexact reasoning of a mobile monitoring system. The authors advance the use of an ad hoc mobile decision support system to monitor and detect early symptoms of respiratory distress provoked by strenuous physical exertion.

The third paper, "SHARPP games for the education prevention and reversion of chronic diseases" suggests building games that could support the sustainable, holistic, real-time, precise, and persuasive (SHARPP) principles, processes, and technologies. The authors utilize wearable technologies to design games that bridges virtual worlds with the real world.

The fourth paper, "The effectiveness of social media-enabled patient communities on health goal attainment: an approach of survival analysis" aims at understanding the effectiveness of social media-enabled online patient communities on health goal attainment, which refers to the final point of health goal striving endeavor. It Applies concepts of the social cognitive theory to study the antecedents of health goal attainment from the perspective of social support and self-reflection in online patient communities. The findings reveal that emotional social support could increase patients' chance to achieve their goals while informational social support was not as effective. In addition, health-related self-reflection increases online patients' likelihood of goal attainment, but leisure-oriented self-reflection negatively affects the possibility.

## References

[1] Adams, P., Kirzinger, W., & Martinez, M. (2013). Summary Health Statistics for the U.S. Population: National Health Interview Survey, 2012 (Vital Health Stat No. 10(259)). National Center for Health Statistics.

[2] Bodenheimer, T., Lorig, K., Holman, H., & Grumbach, K. (2002). Patient Self-management of Chronic Disease in Primary Care. JAMA, 288(19), 2469–2475.

[3] Schulman-Green, D., Jaser, S., Martin, F., Alonzo, A., Grey, M., McCorkle, R., and Whittemore, R. (2012). Processes of Self-Management in Chronic Illness. Journal of Nursing Scholarship, 44(2), 136–144.

[4] The National Health Service. (2013). Everyone Counts: Planning for Patients 2014/15 to 2018/19. Retrieved from https://www.england.nhs.uk/wp-content/uploads/2013/12/5yr-strat-plann-guid-wa.pdf

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