

# Data-Driven Decision Making: A Critical View on the Role of Quantified Self in Healthcare

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**Abstract.** New self-care practices, such as self-management of chronic diseases, have emerged through mobile applications and devices, often designed, developed, and used outside the healthcare context. The development may lead to increased patient empowerment, shared decision-making and better communication, which is expected to benefit the care process. However, there are also potentially harmful effects related to safety, reliability, and security, with a corresponding need for understanding underlying algorithms and biases that may affect users. This calls for socio-technical perspectives, which take into consideration both the technological aspects of developing the app, as well as the social aspects of stakeholder involvement and collaborative design. In this article, we describe the design and development of a mobile app for food nutrition information as part of diabetes self-management and critically discuss its implications for patients and designers. Our findings show that important learning aspects are connected to self-management, but there are also risks involved if too much or too little reliance is placed on the mobile app in the decision-making process.

**Keywords:** Healthcare, Decision Making, Quantified Self, Self-Management, Mobile Application, Critical Research, Socio-Technical Design.

*The full text of the article will be publicly available from January 31, 2023*

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Reference: A. S. Islind and H. V. Hult, "Data-Driven Decision Making: A Critical View on the Role of Quantified Self in Healthcare," Complex Systems Informatics and Modeling Quarterly, CSIMQ, no. 33, 2022. Available: <https://doi.org/10.7250/csimq.2022-33.03>

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