



## Review article

# Using digital interventions for self-management of chronic physical health conditions: A meta-ethnography review of published studies



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## ABSTRACT

**Objectives:** To understand the experiences of patients and healthcare professionals (HCPs) using self-management digital interventions (DIs) for chronic physical health conditions.

**Methods:** A systematic search was conducted in 6 electronic databases. Qualitative studies describing users' experiences of self-management DIs were included, and authors' interpretations were synthesised using meta-ethnography.

**Results:** 30 papers met the inclusion criteria, covering a range of DIs and chronic conditions, including hypertension, asthma and heart disease. The review found that patients monitoring their health felt reassured by the insight this provided, and perceived they had more meaningful consultations with the HCP. These benefits were elicited by simple tele-monitoring systems as well as multifaceted DIs. Patients appeared to feel more reliant on HCPs if they received regular feedback from the HCP. HCPs focused mainly on their improved clinical control, and some also appreciated patients' increased understanding of their condition.

**Conclusions:** Patients using self-management DIs tend to feel well cared for and perceive that they adopt a more active role in consultations, whilst HCPs focus on the clinical benefits provided by DIs.

**Practice implications:** DIs can simultaneously support patient condition management, and HCPs' control of patient health. Tele-monitoring physiological data can promote complex behaviour change amongst patients.

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## 1. Introduction

With the increasing burden of chronic disease on health services, recent health policy has emphasised the central role of patient self-management in future healthcare [1]. Digital interventions (DIs) provide a potentially effective means to deliver self-management support to patients via technological media. DIs may use tools such as education or behaviour change support to promote activities which contribute to condition management, for example medication adherence or increasing physical activity. Systematic reviews of the impact of self-management DIs show small benefits to illness outcomes in asthma, diabetes and cardiovascular disease [2–5] although the evidence for these programmes remains inconsistent [6] and our understanding of what makes them more effective is still developing [7].

A distinction can be made between multifaceted DIs which incorporate several components to support self-management, and standalone tele-monitoring systems in which patients self-monitor health parameters (such as blood pressure) and transmit these data to a healthcare professional (HCP) or automated device to receive feedback on their health status and in some cases, advice on actions to respond to indicators of deteriorating health. Researchers have not always classified standalone tele-monitoring systems as self-management interventions [8], but there is evidence that just monitoring one's own health data can prompt changes in behaviour [7]. The recognition of tele-monitoring as a form of self-management is consistent with Schermer [9] who proposed that tele-monitoring systems mainly facilitate 'compliant self-management', whereby patients adhere to clinical recommendations, but that systems could enhance more 'concordant self-management' whereby patients assimilate their own knowledge of their condition with clinical recommendations to adopt an integrated management regime.

Schermer's distinction between compliance and concordance reflects a wider ambiguity over the goals of self-management in healthcare. It has been argued that DIs favour clinical outcomes over quality of life, offering a "one size fits all" solution at the cost of ignoring individual needs and dynamic management solutions that the patient has developed [10,11]. This conflict in the goals of self-management can present difficulties for HCPs in facilitating the patient to make their own decisions which can contradict clinical recommendations [12].

Recently, many self-management DIs have been developed and a number of studies have used qualitative methods to investigate users' views, but these papers are distributed across different

health conditions and types of DI. The current qualitative synthesis aimed to bring together findings from a diverse range of DIs and conditions to develop a detailed understanding of patient and HCP experiences of using self-management DIs [2].

## 2. Methods

### 2.1. Design

This systematic review adopted a meta-ethnography approach [13] to synthesise the findings of qualitative studies, as this inductive method allows an interpretive analysis [14] which fits well with the aim of developing our understanding of how digital self-management is experienced. The ENTREQ checklist (enhancing transparency in reporting the synthesis of qualitative research) was used to ensure systematic reporting of the review [15].

### 2.2. Criteria for including studies

Table 1 shows the review inclusion and exclusion criteria. We sought to identify qualitative studies investigating adult patients' or HCPs' experiences of using a self-management DI, excluding studies in which participants consider their views on a hypothetical DI. It was important that the primary components of the intervention were delivered digitally, as interventions delivered by telephone or video conference provide real-time interaction which is more akin to a face-to-face consultation. We used a broad definition of self-management to include any behaviour fostering increased responsibility for condition management or increasing confidence, as we held no prior assumptions about which types of intervention might affect patients' self-management. Initial scoping searches indicated that some studies of standalone tele-monitoring DIs reported relevant reactions in terms of patients' self-management behaviours, and thus we wanted to adopt an inclusive approach to defining self-management to incorporate a range of interventions.

### 2.3. Systematic search strategy

Systematic literature searches were conducted in August 2016. No date limits were applied to searches as we did not want to exclude potentially relevant studies. Thesaurus terms and abstract key word searches were used across four categories: E-health; intervention; qualitative methods; and chronic illness (see Appendix A). Searches were conducted using CINAHL; Embase;

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