

## Thesis summary

# Disease management for patients with type 2 diabetes: towards patient empowerment

Laura M.C. Welschen

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## Thesis outline

The aim of this thesis was to provide more insight into disease management of patients with type 2 diabetes with special attention for patient empowerment.

## Introduction

Disease management is defined as 'a systematic approach to identify persons at risk, intervene with specific programs of care, and measure clinical and other outcomes'. It is believed to have a high potential to improve outcomes of patients with type 2 diabetes above the classical healthcare system that lacks coordination of chronic care. This thesis reports on an observational study to evaluate the changes in patients' clinical characteristics after their entry into a structured diabetes management model.

Further, since patient empowerment, defined as 'helping people to discover and use their own ability to gain mastery over their disease' is essential in chronic disease management, two interventions based on the patient empowerment approach were described: a systematic review of self-monitoring of blood glucose in patients who are not using insulin, and a randomized trial of cognitive behavioural treatment.

## Methods and results

Patients (n=4933) from the Diabetes Management System (DMS) West-Friesland, the Netherlands, were followed for up to 7 years. The DMS provides coordination of the regional care, including benchmarking of main treatment outcomes and feedback to the general practitioners. The DMS was successful in improving and stabilising clinical characteristics. HbA1c decreased from 7.7 to 7.0% after patients entered into the system, followed by a stabilisation during follow-up. Cholesterol levels also improved, but the control of blood pressure was inadequate and remains a challenge. The estimated 10-year risk of developing a

coronary heart disease event decreased from 19.6 to 12.3%.

The systematic review and meta-analysis of self-monitoring of blood glucose in patients who are not using insulin showed a statistically significant decrease of 0.39% in HbA1c, in comparison with no self-monitoring. Such a decrease is expected to reduce microvascular complications by 14%. The review also showed there are limited data on other outcomes, such as quality of life.

The randomized controlled intervention of cognitive behavioural treatment to change lifestyle consisted of 3–6 sessions with either a diabetes nurse or a dietician. Techniques of Problem Solving Treatment were used to help the patients to set achievable goals. The theoretical framework was based on the ASE-model, which states that changing people's attitudes, social influences and self-efficacy, increases the intention to perform a specific behaviour. This is likely to result in improvements in lifestyle, and a decrease of cardiovascular disease risk factors. The control group received usual care from the DMS. The intervention resulted in a significantly increased physical activity. The estimated 10-year risk of developing a coronary heart disease slightly improved, but not statistically significant, and no effects were found on clinical characteristics and determinants of the ASE-model. All differences were observed between 0 and 6 months and disappeared after 12 months, indicating the intervention was not effective in the long-term.

## Implications for integrated care

The results presented in this thesis identify elements of disease management systems that improve patients' clinical characteristics and should therefore be implemented in clinical care. This includes a multifaceted system with coordination of care between different caregivers and a recall system for patients, feedback to all involved caregivers, and stimulation of patient empowerment. Self-monitoring of blood glucose seems to improve glycaemic control, also in patients not using insulin. Although it remains a challenge to find behavioural interventions that have beneficial effects in the long-term, patient empowerment is effective in self-management, and should be further stimulated. In the future, the patients and the caregiver might be able to work together in a collaborative partnership towards excellent diabetes care.

The results presented in this review are based on the author's thesis presented at the VU University, Amsterdam, the Netherlands on 9 May 2008.

Laura Welschen  
*Amsterdam, The Netherlands*  
*E-mail: [l.welschen@vumc.nl](mailto:l.welschen@vumc.nl)*