



# The relationship between diabetes-related distress and clinical variables and perceived support among adults with type 2 diabetes: A prospective study



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## ABSTRACT

**Background:** Diabetes-related distress is a prevalent emotional state experienced among people living with type 2 diabetes. It has predominantly been studied in relation to diabetes management and metabolic control and to some extent in relation to perceived social support. Little is known about the relative prospective contribution of clinical variables and perceived support on diabetes-related distress.

**Objective:** To investigate the predictive influence of clinical variables and perceived support from health care professionals and family on diabetes-related distress.

**Design:** The study has a prospective, longitudinal design.

**Settings:** The participants were recruited from seven general practitioners in the south western part of Norway and from members of the Norwegian Diabetes Association.

**Participants:** The sample comprised 296 people with type 2 diabetes. Inclusion criteria were: adults (30–70 years) diagnosed with type 2 diabetes who were willing and able to complete a questionnaire written in Norwegian.

**Methods:** Data were collected by postal questionnaires assessing perceived support from health care professionals and family and diabetes-related distress measured by the Problem Areas in Diabetes Scale at two time points separated by an interval of one year (October 2008 and 2009). Clinical data were collected by self-report. The follow-up group, for which both assessment data were available, constituted our sample comprising 296 adults.

**Results:** Descriptive results and findings from correlations and prospective multivariate associations indicate small changes in diabetes-related distress over a period of one year. In total, multiple regression analyses showed that clinical variables were very weak predictors of diabetes-related distress, whereas perceived social support emerged as statistically significant although a moderate predictor of distress. Among the support variables, only 'constructive support from health care professionals' and 'non-supportive family behaviour' accounted for changes in diabetes-related distress.

**Conclusions:** Findings suggest that diabetes-related distress among adults with type 2 diabetes is relatively stable over time and may be difficult to alter. Health care professionals should therefore be aware that stimulating people to change is challenging and complex. Moreover, they should devote more attention to non-clinical factors such as social support when addressing diabetes-related distress.

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### What is already known about the topic?

- Type 2 diabetes involves a complex and life-long process requiring a large degree of self-management with the goal of achieving adequate metabolic control and preventing long-term complications.
- Diabetes-related distress is a prevalent emotional state found among people living with type 2 diabetes.
- Diabetes-related distress has mainly been studied in relation to diabetes-management and metabolic control and only, to some extent, in relation to perceived social support.

### What this paper adds?

- Scores for diabetes-related distress were found to be relative stable over a period of one year, possibly reflecting that adults with type 2 diabetes have developed rather habitual and stable ways of dealing with stress.
- Change in diabetes-related distress was only to a fairly small degree predicted by clinical variables, whereas social support appeared to be a statistical significant although moderate predictor.
- Health care professionals should pay more attention to non-clinical factors such as social support when addressing diabetes-related distress.
- Health care professionals should be attentive to the fact that assisting people to manage diabetes-related challenges and change lifestyles is complex and may require tailor-made, on-going support.

## 1. Introduction

Diabetes-related distress is a prevalent emotional state found among people living with type 2 diabetes (Fisher et al., 2009; Polonsky et al., 2005). Type 2 diabetes involves a complex and life-long process requiring a large degree of self-management on the part of the individual with the goal of achieving adequate metabolic control and preventing long-term complications. Many people with type 2 diabetes may therefore become emotionally overwhelmed, frustrated and discouraged by the challenges of this multifaceted and often demanding set of self-care activities as well as by the threat of developing long-term complications (Fisher et al., 2009; Polonsky et al., 2005). In the present study, diabetes-related distress will be understood as this kind of emotional reaction when dealing with the demands of the disease. Earlier studies have suggested that diabetes-related distress is closely linked to a reduction in well-being and to mental health problems such as symptoms of anxiety and depression among people with type 2 diabetes (Fisher et al., 2010; Papellbaum et al., 2010). According to de Groot et al. (2010), such problems are more prevalent among people with type 2 diabetes than in those of the general population. Moreover, diabetes-related distress has mainly been studied in relation to diabetes-management and metabolic control and, to some extent, in relation to perceived social support (Lloyd et al., 2005; Polonsky et al., 1995; Snoek et al., 2000a; Welch et al., 1997).

Given the importance of diabetes-related distress and its associations with mental health problems and diabetes outcomes, studies using prospective design with the possibility of making stronger statements about the causal role should be of special interest. Such a design may contribute to a better understanding of factors predicting diabetes-related distress. This study is therefore a follow-up of a previous cross-sectional study (Karlsen et al., 2012), utilizing a prospective design where we sought to understand to what extent central clinical variables of diabetes regulation such as glycosylated hemoglobin (HbA1c), diabetes treatment, diabetes-related complications, disease duration, body mass index (BMI) and perceptions of social support predict perceived disease-related distress among people with type 2 diabetes.

### 1.1. Background

In Norway, the general practitioners have traditionally been responsible for the primary care of type 2 diabetes. Many of these are working in teams with medical secretaries. Most of the medical secretaries are registered nurses and trained in diabetes care (Jenum et al., 2008). The treatment is primarily based on stimulating self-management. Routinely, diabetes care and follow-up are recommended in clinical guidelines (Claudi et al., 2009) and include information, counseling, collaboration and different kind of interventions in order to support people with type 2 diabetes to integrate the demanding self-care activities into their daily life. In addition, many people with type 2 diabetes are offered a structured educational program at the hospital, which includes information and counseling about the disease. Most people with type 2 diabetes have regular consultations at least every sixth months with their designated general practitioners. A tighter monitoring and assistance to those with more serious complications are also standard procedures.

Type 2 diabetes requires long-term adherence to a complex diet, physical activity, medication and blood glucose monitoring to obtain optimal glucose control and prevent long-term complications. As obesity is one of the common causes of this form of diabetes, it may also be necessary for many people to reduce weight in order to regulate their disease. Thus, glycosylated hemoglobin (HbA1c), diabetes treatment, diabetes-related complications, disease duration and body mass index (BMI) were selected as five important clinical variables to reflect regulation of type 2 diabetes, since they may deteriorate the management of the disease and thus have a negative influence on individuals' psychological well-being. First, glycaemic control has been found to be a modest but significant factor related to diabetes-related distress (Fisher et al., 2010; Polonsky et al., 1995; Welch et al., 1997). This relationship could be due to diabetes-related stress leading to poor self-regulation. On the other hand, it is also possible that indications of poor glycaemic control could instigate distress in the diabetic individual. Second, it is demonstrated that individuals treated with insulin report higher diabetes-related distress compared with oral- or diet-treated patients (Delahanty et al., 2007). More intensive treatment could thus signal to the person with

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