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Cognitive behavioural group training (CBGT) for patients with type 1 diabetes in persistent poor glycaemic control: who do we reach?

Nicole C.W. van der Ven [a,b,*], Caroline H.C. Lubach [c], Marloes H.E. Hogenelst [a], Ada van Iperen [c], Anita M.E. Tromp-Wever [a], Annelies Vriend [c], Henk M. van der Ploeg [a], Robert J. Heine [b,c], Frank J. Snoek [a,b]

[a] *Diabetes Research Group, Department of Medical Psychology, VU University Medical Centre, vd Boechorststraat 7, 1081 BT, Amsterdam, The Netherlands*
[b] *Institute for Cardiovascular Research (ICaR-VU), VU University Medical Centre, vd Boechorststraat 7, 1081 BT, Amsterdam, The Netherlands*
[c] *Department of Endocrinology, VU University Medical Centre, vd Boechorststraat 7, 1081 BT, Amsterdam, The Netherlands*

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Abstract

Approximately a quarter of adults with type 1 diabetes do not succeed in achieving satisfactory glycaemic control, partly due to problems with the demanding self-management regimen. To improve glycaemic control, interventions with a cognitive behavioural approach, aimed at modifying dysfunctional beliefs, reducing negative emotions and enhancing self-care practices are a potentially successful tool. Little is known about the reach of such an approach. This article describes characteristics of participants in a randomized, controlled trial of cognitive behavioural group training for patients with type 1 diabetes in poor glycaemic control. Results show that outpatients from seven hospitals in the area of Amsterdam, selected on long-standing high HbA1c and volunteering to participate, report high levels of psychological distress and depressive symptoms. Furthermore, self-care behaviours were perceived as important, but burdensome. Diabetes-specific self-efficacy was relatively low. It is concluded that this selected group of adults with type 1 diabetes would potentially benefit from a cognitive-behavioural intervention in order to reduce negative emotions, enhance diabetes self-efficacy, self-care behaviour and glycaemic outcomes.

Keywords: Behavioural intervention; Diabetes; Reach

1. Introduction

It has been conclusively shown that tight blood glucose control in type 1 diabetes can delay the onset and progression of long-term complications in eyes, kidneys and the nervous system [1]. For treatment of diabetes to be successful, adequate self-care behaviour is pivotal. Self-management of blood glucose involves extensive and sustained behavioural changes (e.g. frequent administration of insulin and self-monitoring of blood glucose (SMBG), balancing food intake, physical activity and insulin) [2]. The extent to which patients follow treatment recommendations however varies for different areas of self-care, and it has become evident that it is hard for most people to adhere to every aspect of the regimen all the time [3]. Approximately, a quarter of people on intensive insulin therapy does not succeed to achieve and maintain adequate glycaemic control [1,4], even with intensive support [2].

The central role of psychological and behavioural factors in diabetes management has become widely acknowledged [2]. Current treatment recommendations and guidelines [5,6] appropriately recognize the significance of integrating psychosocial support into routine diabetes care, to assist patients in achieving adequate glycaemic control and at the same time maintaining a satisfactory quality of life.

There is growing literature on the effectiveness of psychosocial interventions as a supplement to medical care for people with diabetes in general [7], but controlled trials with sufficient statistical power are scarce. It is known that psychological problems (e.g. depression, anxiety, eating disorders) are more prevalent among people with diabetes [7–9]. As they are associated with poor medical outcomes, it is reasonable to assume they occur more frequently among patients in poor glycaemic control. Interventions designed for patients with type 1 diabetes in poor glycaemic control have typically been aimed at people requiring intensive

* Corresponding author. Tel.: +31-20-4448420.
E-mail address: ncw.vanderven@vumc.nl (N.C.W. van der Ven).

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psychotherapy (e.g. [10,11]). In most patients, however, such treatment is not indicated, and studies show poor glycaemic control has never been linked consistently to a particular personality profile [12]. A far more common problem in patients having problems in reaching satisfactory control of blood glucose, are difficulties in coping with the many demands of diabetes in daily life. Although knowledge and skills are important prerequisites for adequate self-management, they are not automatically translated into behaviour and are by no means sufficient [13]. According to social cognitive theories of health behaviour change, attitudes and beliefs people hold towards themselves, their treatment and disease have a major impact on coping behaviour [14,15]. Especially, in patients in persistent poor control, negative beliefs and feelings towards diabetes may result in ineffective self-care and consequent poor glycaemic control, a negative cycle that may ultimately lead to 'diabetes burn-out' [16]. Cognitive behavioural therapy (CBT) has proven to be an effective method to modify dysfunctional beliefs, originally in depression and anxiety, but increasingly applied in behavioural medicine [17,18]. We developed a CBT-based group programme to assist adults with type 1 diabetes in persistent poor glycaemic control to cope more effectively with diabetes in daily life, optimize self-care behaviour, reduce negative emotions towards diabetes, and ultimately enhance glycaemic control. In a recent uncontrolled pilot-study, we found a 4-week programme to be acceptable to a broad spectrum of patients with type 1 diabetes, and successful in improving glycaemic control without compromising emotional well-being [19]. We then continued to test the efficacy of an expanded 6-week cognitive behavioural group training (CBGT) in a randomized, controlled study, against a control condition consisting of psycho-educational intervention equal in intensity and format, which was not based on CBT. To control for possible a-specific study-effects, changes due to participation in the study per se, the intervention-phase was preceded by a 3 month 'run-in' period [20].

'Reach', participation rate and representativeness of participants, are important aspects to evaluate in determining the impact of the intervention on the population of interest and generalizability of results (external validity) [21]. Here, we report on 'who do we reach', when offering a psychology-based intervention to patients selected on poor glycaemic control? What are their medical and psychological characteristics, and how do they cope with their diabetes on a daily basis? The efficacy of the programme will be reported later elsewhere.

2. Materials and methods

2.1. Sample

The study was advertised in the waiting room of the outpatient clinic of the VU University Medical Centre (VUmc) and at the website of the VUmc Diabetes Center from September 1999–2002. Additionally, charts of patients visiting the VUmc for their routine appointment were actively screened by the researcher to alert physicians and diabetes nurse specialists on patients eligible for the study. Patients of nine other hospitals in the area of Amsterdam cooperating in the study were alerted on the study by their own treating diabetologist, leaflets in the hospital waiting room, and an announcement on the website of the VUmc Diabetes Center.

Criteria for inclusion were: type 1 diabetes for at least 1 year; HbA1c $\geq$8% (reference range 4.3–6.1%) at two consecutive occasions prior to the study; multiple daily insulin-injections ($\geq$2) or CSII (continuous subcutaneous insulin infusion, pump-therapy). Criteria for exclusion: pregnancy; severe medical co-morbidity (heart failure, chronic dialysis (ESRD); current treatment for cancer; visually too impaired to read; too functionally impaired to attend classes; insufficient Dutch reading-skills; substance abuse; mental retardation; (history of) psychiatric treatment for schizophrenia, organic mental disorder or bipolar disorder.

2.2. Procedure

The study was approved by the ethics committee of the VU medical centre. After signing informed consent, participants were randomized to the experimental or control-group intervention by means of computerised block-randomisation. Participants were informed that both interventions were designed specifically for patients with type 1 diabetes to help them deal more effectively with their diabetes regimen. One intervention would do so by reducing negative emotions and barriers in dealing with the daily demands of diabetes (CBGT), the other by learning to prevent and correct more effectively blood glucose fluctuations outside of the normal range (BGAT). Except for compensation of travelling expenses, no fee was offered for participation.

Three months before the start of the intervention, participants received a booklet of questionnaires by mail to complete at home, and a small needle and plastic container to obtain a blood sample (by means of a finger-prick) for assessment of HbA1c. Questionnaires and blood samples were mailed back in stamped envelopes.

Participants visited the outpatient clinic of the VUmc for an interview on background characteristics and their motivation to join (NvdV). To ensure an optimal level of knowledge and skills, all participants were screened by a diabetes nurse specialist following a standardized checklist developed for this study. Minor deficiencies were addressed immediately; patients requiring more education that could not be covered in two additional consultations were excluded from the study and referred back to their diabetes nurse specialist. Materials and techniques for self-monitoring of blood-glucose and self-injecting were checked and replaced if necessary.

Between the first assessment (T0) and start of the intervention (T1), a 3 months run-in period was scheduled to control for study-effects. In this period, there was no