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Research Paper

A peer support intervention in improving glycemic control in patients with type 2 diabetes

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ABSTRACT

Objective: This study aims to assess the effectiveness of a peer support intervention, in which patients with T2DM were provided ongoing self-management support by trained peers with diabetes directed at improving self-care behaviors, self-efficacy and life quality.
Methods: In this randomized controlled trial, 200 patients referred to a diabetes specialty clinic were allocated to peer support or control group. Participants in both groups received usual education by diabetes educators.
Intervention participants worked with the trained volunteer peers who encouraged participants to engage in daily self-management and to discuss and share their experiences and challenges of diabetes management. The primary outcomes were HbA1c, BMI, self-care behaviors, self-efficacy and life quality
Results: After 6 months, patients in the peer support group experienced a significant decline in mean A1c value (P = 0.045). Also, mean diabetes self-management scores, mean self-efficacy scores and mean quality of life scores significantly improved in peer support group compared to control group (P values <0.001).
Conclusion: Peer support activities can be successfully applied in diabetes self-management, especially in areas with a shortage of professionals and economic resources.
Practice implications: Peer support strategies should be integrated into our healthcare system to meet minimum needs of people with T2DM in Iran.

1. Introduction

At a global level, type 2 diabetes mellitus (T2DM) is one of the major challenges facing health authorities and societies because of the increasing care costs and the associated impaired quality of life due to the development of chronic complications [1,2]. A recent retrospective study shows that the direct medical cost of diabetes management has progressed sharply during the past years in Iran [3]. Although strict control of blood glucose could significantly reduce the risk of chronic complications development [4,5], such control is difficult to accomplish and the care provided to patients remains far from satisfactory levels [6]. In this regard, an Iranian survey revealed that more than 50% of elderly people with T2DM had uncontrolled status [7].

In addition, poor adherence to self-care activities is one of the main obstacles to optimal care. Research during the past several decades indicates that, up to 40% of people diagnosed with T2DM fail to adhere to treatment recommendations and lifestyle modifications due to psychological and psychosocial issues as well as the complexity of the regimens required [8]. As a result, educational programs tailored to individual patient needs, individual feedback and presence of psychological support can play a key role in improving adherence to the treatment, and predicting favorable outcomes of the disease [9,10]. However, there exist some challenges with the current practices used [11]. Physicians and staff often do not have the time or resources to provide sufficient support for patient self-management during routine visits. The time allotted for an outpatient visit is often inadequate to address all of the questions that a patient may have about self-care [12]. Moreover, effective self-management support

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needs to be provided on a long-term basis, which again requires personnel and resources that healthcare systems do not have. Considering such circumstances, peer support, which enables patients to connect to others who have had similar experiences, has been suggested as a reasonable approach to address this issue. Peer support programs are a promising way to boost social and emotional support, help patients in day-to-day management of living with diabetes and promote linkages to clinical care [13,14]. During the past few years, multiple review studies have been conducted about the role of peer support in diabetes self-management [11,12,15,16]. These reviews identified that a growing body of literature demonstrates the value of peer models for diabetes management, but also pointed out that further research is needed. There is still much to learn about organizing effective peer support interventions, determining best types of programs for different types of patients, integrating peer interventions into other clinical services and so on [13].

Additionally, in a recent update of standards of medical care in diabetes by the American Diabetes Association has been emphasized on addressing cultural differences and socioeconomic conditions as a way to improve the effectiveness of educational strategies in diabetes care [17]. However, previous studies propose that peer support interventions have not provided robust evidence for its utility across cultures [18]. Therefore, due to differences in lifestyle behaviors and cultural aspects, we conducted the present study to assess the feasibility and effectiveness of a peer support intervention in which patients with T2DM were provided ongoing self-management support by trained peers with diabetes, with the aim of improving and sustaining self-care behaviors, self-efficacy beliefs, and life quality for a 6 months follow-up.

2. Methods

2.1. Study design and sample size

This study investigated whether peer support intervention over a 6 month period improves self-care activities, reported self-efficacy, quality of life and clinical outcomes (HbA1c, BMI) in patients with T2DM.

In this randomized controlled trial, 200 patients with T2DM were recruited through a diabetes specialty clinic of the Endocrinology and Metabolism Research Institute affiliated to Tehran University of Medical Sciences. All patients who come to this clinic are routinely under supervision of endocrinologists, dieticians, diabetes nurse educators and qualified psychologists if needed. In addition, all patients are registered and invited to participate in group education classes. Also patients are given access to a set of educational booklets and brochures and an educational website named diabetes virtual clinic (http://emri.tums.ac.ir/vclinic).

In this study, patients referred to the clinic were screened for eligibility. The inclusion criteria were as follows: aged between 25 and 75 years, diagnosed with T2DM for more than 12 months, planned to continue receiving care at this clinic for next 6 months, and had access to a telephone. Patients were excluded if they had a current debilitating medical or related condition (e.g. severe mental illness, end-stage cancer, blindness, and inability to provide self-care).

Potential participants were explained about the objectives and procedures of the study. Those who voluntarily accepted to participate in this study signed informed consent forms.

At first, all participants in both groups received usual education including four weekly sessions (90 min each) by a credentialed diabetes educator as it is routine in the clinic.

The first session included an overview of type 2 diabetes (symptoms of hyper and hypoglycemia, blood glucose self-monitoring and the importance of patients' active participation in their plan of care). In the second session, main focus was on increasing patients' awareness of the importance of a healthy diet and weight reduction. The third session explained health benefits of regular physical activity and exercise. And finally, during the fourth session, they were taught how to manage the ABCs of diabetes (HbA1c, Blood pressure, Cholesterol).

Illustrated educational materials and virtual clinic website address which offered additional resources to study were given to each participant. At the final session, participants were randomly allocated to either peer support group (n = 100) or control group (n = 100) using permuted block randomization technique, with block size of two. Fig. 1 is a CONSORT diagram of the study design.

The sample size was calculated based on the difference of change in HbA1c from baseline to the end of the study between the two groups. Based on the results of a previous study [1], we expected an effect size of at least 0.4 in the HbA1c level, and accordingly a sample size of n = 94 in each study group was required, considering 0.05 for type two error and 80% power based on calculations performed with G-Power software. Thus, we recruited a total of 100 patients in each group.

2.2. Ethical approval

As for ethical considerations, the research protocol was approved by the Medical Research Ethics Committee of the Tehran University of Medical Sciences. All participants were volunteers who provided written consent and knew that they could withdraw from the study at any time.

2.3. Recruiting peers

Recruiting enthusiastic and appropriate patients as peers was to some extent challenging. Overall, people are more likely to volunteer when asked by someone they know and trust. So, the physicians and diabetes educator nurses in the clinic were asked to nominate a list of 10 patients that they felt would be suitable for the role of peers according to the following criteria:

- Patients' knowledge on the basis of excellent diabetes control (HbA1c $< 8.5\%$).
- Patients with good interpersonal skills and qualities (e.g., patients who enjoy contact with others, personable).
- Patients who demonstrate flexibility, self-motivation and good problem-solving skills.
- Patients with good active and non-judgmental listening skills.

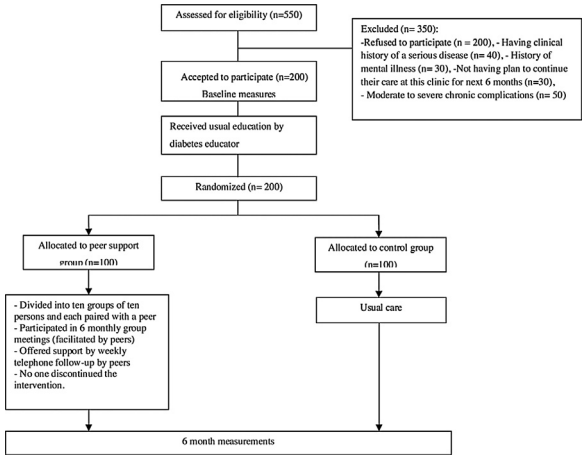

Fig. 1. Overview of recruitment, group allocation and data.

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