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## **Review**

# Collective empowerment strategies for patients with Diabetes Mellitus: A systematic review and meta-analysis



Nayara Ragi Baldoni<sup>a,\*,1,2</sup>, Jéssica Azevedo Aquino<sup>b,c,1,3</sup>, Cristina Sanches-Giraud<sup>b,c,3</sup>, Cláudia Di Lorenzo Oliveira<sup>b,c,3</sup>, Roberta Carvalho de Figueiredo<sup>b,c,3</sup>, Clareci Silva Cardoso<sup>b,c,3</sup>, Thiago Reis Santos<sup>b,c,3</sup>, Geisa Cristina Silva Alves<sup>b,c,3</sup>, Amaury Lelis Dal Fabbro<sup>a,2</sup>, André Oliveira Baldoni<sup>b,c,3</sup>

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#### ABSTRACT

Aims: To perform a systematic review and meta-analysis to identify and analyze collective empowerment strategies for patients with Diabetes Mellitus (DM).

Methods: The systematic review was performed using PubMed/MEDLINE, Science Direct and BVS. The term "Diabetes Mellitus" was used with each of the following describers, along with the connector "AND": "self-care", "health education", "motivation" and "empowerment". Inclusion criteria were: intervention study with control group published between 2004 and 2014. For meta-analysis, RevMan V 5.3 software was used.

Results: Among the nine analyzed articles, 66.7% (n = 6) were developed in patients diagnosed with DM2. Concerning the indicators for intervention effectiveness evaluation, all articles (n=9) used glycated hemoglobin (HbA1c) and the most used instrument was Summary of Diabetes Self Care Activities Measure, representing 44.4% (n=4) of the studies. The types of strategies used were similar in the articles. There was evidence of a decrease in HbA1c levels in 66.7% (n=6). The meta-analysis found significant evidence indicating beneficial effects of empowerment.

<sup>&</sup>lt;sup>a</sup> Departamento de Medicina Social, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Av. Bandeirantes, 3900, Monte Alegre, CEP 14049-900 Ribeirão Preto, SP, Brazil

<sup>&</sup>lt;sup>b</sup> Campus Centro-Oeste Dona Lindu, Universidade Federal de São João del-Rei, Rua Sebastião Gonçalves Coelho, 400, Bairro Chanadour, CEP 35501-296 Divinópolis, MG, Brazil

c Grupo de Pesquisa em Epidemiologia e Avaliação de Novas Tecnologias em Saúde, GPEANTS, UFSJ/CNPq, Brazil

<sup>\*</sup> Corresponding author.

E-mail addresses: nayarabaldoni@usp.br (N.R. Baldoni), jessica.a.aquino@gmail.com (J.A. Aquino), csgiraud@ufsj.edu.br (C. Sanches-Giraud), claudia.dlorenzo@gmail.com (C. Di Lorenzo Oliveira), betafigueiredo@yahoo.com.br (R.C. de Figueiredo), clarecicardoso@yahoo.com.br (C.S. Cardoso), interferonfar@gmail.com (T.R. Santos), geisa.cristina@gmail.com (G.C.S. Alves), adfabbro@fmrp.usp.br (A.L. Dal Fabbro), andrebaldoni@ufsj.edu.br (A.O. Baldoni).

<sup>&</sup>lt;sup>1</sup> These authors contributed equally to this work.

<sup>&</sup>lt;sup>2</sup> Fax: +55 16 3602 2714; 16 3633 1386.

<sup>&</sup>lt;sup>3</sup> Fax: +55 37 3221 1164.

Conclusions: Programs based on collective empowerment in DM have shown the interventions lead to improvement in clinical parameters, behavior, increased knowledge about DM, and self-care.

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#### 1. Introduction

Diabetes Mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia resulting from defects in secretion and/or action of insulin [1]. It is estimated that DM is becoming a global epidemic of the 21st century [2]. Considering the world population between 20 and 79 years old, 382 million people were affected by DM in 2013. Until 2035 it is estimated this number will increase to 592 million, representing an addition of 55% of cases [3]. This increase in prevalence can be explained by some factors such as the increase and ageing of the population, increasing prevalence of obesity and sedentary lifestyle, as well as a longer lifespan of people with DM [1,3].

DM is a chronic condition that requires continuous medical care, permanent education for self-care of the disease, and support to prevent acute complications and reduce the risk of long-term complications [1]. Patients with DM play a fundamental role in their own treatment and need to participate actively in the care and control of the disease, since morbidity control cannot be achieved only with professionals' supervision [4]. In this context, it is essential for the adoption of educational and motivational practices such as education for self-care, this being the base for empowerment, thus allowing the DM patient to handle their treatment effectively [5].

The World Health Organization defines empowerment as a strategy by which people achieve a higher control over their own decisions and habits that affect their health [6]. Moreover, it considers that empowerment may be a social, cultural, psychological and political process where the users are able to express their needs, show their concerns and trace strategies to involve themselves in the decisions regarding health. According to Kleba and Wendausen, empowerment is a process of mobilization and acts to drive people and groups

toward improvement of their conditions of life, enhancing their autonomy [7].

Research performed on patients diagnosed with DM have shown that empowerment helps them to take decisions regarding their own care, and to achieve clarity about their goals, values and motivations, facilitating the acquisition of good metabolic control [8-11]. Among the strategies of education in DM regarding empowerment, individual and collective strategies have been used, but it is not yet consensual as to which one would show the best cost-benefit [12,13]. Knowledge of empowerment strategies may assist healthcare professionals in their decision making and on the implementation of more effective strategies in healthcare services, providing self-care in DM and reducing costs for the public healthcare system. Considering these aspects, this systematic review seeks to identify and evaluate collective empowerment strategies in patients with DM, as well as to evaluate the impact of these strategies upon glycemia control through meta-analysis.

#### 2. Method

#### 2.1. Search strategies

For this systematic review, the following databases were searched: PubMed/MEDLINE, Science Direct and BVS (which includes the databases: LILCAS, IBECS, MEDLINE, Cochrane Library and SciELO). PubMed's Medical Subject Heading (MeSH) was used to define describers. "Diabetes Mellitus" was used with all of the following describers: "self-care", "health education" and "motivation". Additionally, the word "empowerment", which is not a describer, was used to select papers, along with the describer "Diabetes Mellitus". The connector "AND" was used between the terminations, as this exam-

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