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Comparative analysis of diabetes self-management education programs in the European Union Member States

Sarama Saha^a, Henna Riemenschneider^{a,*}, Gabriele Müller^b,
Diane Levin-Zamir^c, Stephan Van den Broucke^d, Peter E.H. Schwarz^a

^a Medical Clinic 3, University Hospital Carl Gustav Carus, Technische Universität Dresden, Germany

^b Center for Evidence-based Healthcare, Medical Faculty, University Hospital Carl Gustav Carus, Technische Universität Dresden, Germany

^c Clalit Health Services, University of Haifa School of Public Health, Israel

^d Psychological Science Research Institute, Université Catholique de Louvain, Belgium

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ABSTRACT

Diabetes self-management education (DSME) is generally considered as an integral part of diabetes care. The availability of different types of self-management in the European Union Member States (EUMS) remains uncertain. The aim of this study is to perform a comparative analysis of existing DSME programs (DSMEP) implemented in EUMS.

Unpublished data regarding DSME in the EUMS was assessed with Diabetes Literacy Survey using wiki tool (WT) targeting patients and different stakeholders. An additional literature review (LR) was performed in PubMed to identify published studies regarding DSMEP in the EUMS from 2004 to 2014.

A total of 102 DSMEP implemented in EUMS were reported in the WT and 154 programs were identified from the LR. Comparative analysis of the data indicated that a majority of programs are aimed at adults and only a minority at children and elderly. Only a small percentage of the programs utilize information technology for teaching and learning, and only one out of five programs pay attention to depression. The identified DSMEP aimed primarily to empower patients through increasing knowledge and changing attitudes and beliefs towards diabetes.

This study provides an overview of the present state-of-the-art on diabetes self-management education programs in the 28 EUMS. To increase participation, existing DSMEP should be made more accessible to the patients as well as tailored to specific patient groups.

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* Corresponding author at: Department for Prevention and Care of Diabetes/Department for General Practice, Medical Clinic 3, University Hospital Carl Gustav Carus, Technische Universität Dresden, Fetscherstraße 74, 01307 Dresden, Germany. Fax: +49 351/458 7320.

E-mail address: henna.riemenschneider@uniklinikum-dresden.de (H. Riemenschneider).

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1. Introduction

According to the Diabetes Atlas 2015 [1], 415 million people worldwide have diabetes mellitus (DM), which means that 1 in 11 adults have been diagnosed with the condition. Without effective interventions, this number is projected to reach around 642 million people by the year 2040. For Europe, the prevalence is estimated at 59.8 million, or around 9% of the population. DM frequently leads to premature mortality and is often complicated by comorbidities, including cardiovascular disease, hypertension, kidney diseases and neuropathy, resulting in a significant rise in health care expenditure [2].

Although DM is not curable it is manageable, and the associated long term complications could be minimized by achieving and subsequently maintaining an optimal glycemic control. People can learn skills through diabetes self-management education (DSME) programs which is crucial to reduce the risk of diabetes related complications, improve life expectancy, health related quality of life and reduce the economic burden of the disease. The daily care of diabetes requires sufficient knowledge about the disease, a positive attitude towards self-management and adequate competences in order to promote life style changes and adherence to medications. In addition, DSME also empowers individuals by helping them cope with the psychosocial and emotional aspects of their disease [3].

Various DSME programs have already been developed globally, addressing different target groups. However, the availability of different types of DSME in the European Union Member States (EUMS) is not well documented, and the effectiveness of different types of interventions and modes of delivery remains uncertain. Although several studies have assessed the effect of DSME programs and some of them demonstrated that they produce significant improvements in metabolic control [4,5], other studies contradict this claim [6–9]. Moreover, while several studies suggest group education as the most effective to achieve clinical, lifestyle and psychosocial outcomes [10], other studies have identified individual delivery as the optimal strategy [11], and higher contact time between the participant and health care provider as the key component of education programs [12].

Educational techniques have evolved over the last decades from primarily didactic presentations to more patient centered interventions based on the empowerment strategy [13,14], involving the patients' direct participation and collaboration. The latter approach is considered as more effective than an "expert-driven" didactic approach [15]. However, there are no specific evidence-based international guidelines that describe the features of the most appropriate structures and approaches for DSME. Moreover, the unprecedented economic, demographic and social transition caused by the ongoing global economic recession along with the rapid increase in prevalence of DM [16] necessitates a discussion about the appropriate healthcare infrastructure to cope with diabetes, and creates a need to identify cost-effective DSME programs that can be implemented with limited available resources.

This paper aims to present an overview of DSME programs integrated into the health care systems of EUMS. Our

novel approach is to combine published data on DSMEP with data that have not been published in peer reviewed journals. This overview is an outcome of the European Commission 7th Framework Program for Research supported Diabetes Literacy—project conducted across the EUMS [17]. It can inform the development of guidelines for designing effective, low cost self-management education programs that are adapted to the broader health care system, tailored to the socioeconomic needs of the target population, sensitive to the cultural context, and accessible for people with low health literacy.

2. Methods

The approach to collect published and unpublished data to conduct a comparative analysis of DSME programs in the EUMS was developed in frames of the Diabetes Literacy project and approved by the Diabetes Literacy consortium.

2.1. Diabetes Literacy Survey using wiki tool

To identify DSME programs that primarily are not published in peer reviewed journals, an online wiki tool (a collaborative web site to collect and revise respective data by its users) was used to conduct a survey from January 2014 to December 2015. The focus groups were patients, peers and different stake holders working in the field of diabetes care.

The used wiki tool (WT) originated from the framework of the Diabetes Literacy Survey (DLS), and was adapted from the Global Diabetes Survey (GDS), which is a global initiative to collect data on diabetes care quality on a yearly basis. The survey questionnaire was developed via a multiple Delphi process (described in earlier publications [17,18]), containing 49 questions on nine major topics and various subtopics of DSMEP. These included general information about the program, implementation of the program, target groups, topics discussed (healthy eating, physical activity, self-monitoring, medication, problem solving, reducing risks of diabetes related complication, strategies for living with diabetes), empowerment strategies, structural organizations, teaching and learning methods, standardization and quality management, and professional groups involved as facilitators.

The tool is available online in seven languages (English, German, Spanish, French, Dutch, Mandarin and Hebrew) at www.globaldiabetessurvey.com.

2.2. Literature review

To identify published data regarding DSMEP in the EUMS, literature search was performed in PubMed in July 2014 using combinations of the following search string: ("diabetes self management education") OR "diabetes self management education program") OR ("diabetes education") OR ("diabetes intervention program") OR ("diabetes training program") OR ("diabetes educational program") OR ("diabetes program") OR ((early intervention education[MeSH Terms] OR patient education[MeSH Terms] OR health education[MeSH Terms] OR training program[MeSH Terms]) AND diabetes mellitus[MeSH Terms]) AND ((Case Reports[ptyp]

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