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Resource allocation and organisational features in Swedish primary diabetes care: Changes from 2006 to 2013

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ABSTRACT

Aims: To compare the resource allocation and organisational features in Swedish primary diabetes care for patients with type 2 diabetes mellitus (T2DM) between 2006 and 2013.
Methods: Using a repeated cross-sectional study design, questionnaires covering personnel resources and organisational features for patients with T2DM in 2006 and 2013 were sent to all Swedish primary health care centres (PHCCs) during the following year. In total, 684 (74.3%) PHCCs responded in 2006 and 880 (76.4%) in 2013.
Results: Compared with 2006, the median list size had decreased in 2013 ($p < 0.001$), whereas the median number of listed patients with T2DM had increased ($p < 0.001$). Time devoted to patients with T2DM and diabetes-specific education levels for registered nurses (RNs) had increased, and more PHCCs had in-house psychologists (all $p < 0.001$). The use of follow-up

Abbreviations: ECTS, European Credit Transfer and Accumulation System; GP, general practitioner; NDR, National Diabetes Register; PHC, primary health care; PHCC, primary health care centre; RN, registered nurse; Swed-QOP, The Swedish National Survey of the Quality and Organisation of Diabetes Care in Primary Healthcare; T2DM, type 2 diabetes mellitus; WC, waist circumference; WTE, whole time equivalent.

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systems and medical check-ups had increased (all $p < 0.05$). Individual counselling was more often based on patients' needs, while arrangement of group-based education remained low. Patient participation in setting treatment targets mainly remained low.

Conclusions: Even though the diabetes-specific educational level among RNs increased, the arrangement of group-based education and patient participation in setting treatment targets remained low. These results are of concern and should be prioritised as key features in the care of patients with T2DM.

1. Introduction

Diabetes care is a complex process with several factors influencing the process positively, such as resource allocation, e.g., having registered nurse (RN) managed care [1,2], having access to dietitians [3] and psychologists [4], as well as organisational features such as using a call–recall system that contribute to better continuity of care [5], the provision of group education [6], and individualised treatment and care [7,8]. Well-developed primary diabetes care is associated with positive outcomes for patients with type 2 diabetes mellitus (T2DM) [9,10].

In Sweden [11], as in many other European countries [12,13], patients with T2DM are usually treated in the primary health care (PHC) system, unless they have developed serious complications. In general, Swedish primary health care centres (PHCCs) have a diabetes-responsible RN and general practitioner (GP) available in-house which patients with T2DM visit once a year each for medical check-ups and individual counselling [11]. However, Swedish national guidelines for diabetes care advocate that both individual counselling and medical check-ups of e.g., albuminuria should be performed once a year, while medical check-ups for HbA_{1c} and blood pressure need to be individualised and require more frequent visits in order to prevent complications from developing [14]. Moreover, in Sweden, PHCCs are encouraged to annually report data (clinical characteristics, treatments, risk factor screening, complications and process measures such as foot examination and retinal photo) to the Swedish National Diabetes Register (NDR). The Euro Diabetes Index 2014 showed that Sweden has the best diabetes care in Europe, mainly because of the high-quality NDR with data covering about 90% of people with diabetes [15]. Furthermore, Sweden has national guidelines for diabetes care and heavily subsidised patient fees for prescribed drugs and PHCC visits regardless of reason and frequency of visits [16]. Despite this, inequalities in resource allocation regarding e.g. having diabetes-specific educated health care professionals and differences in the implementation of organisational features to enhance diabetes care within Swedish primary diabetes care have been reported [17,18].

In 2006, a nationwide survey of PHCC characteristics and organisational features was conducted in Swedish primary diabetes care [11]. At that time, according to Swedish law, patients were in general assigned to a PHCC in the geographic area where they lived. In 2010, however, the Swedish government initiated a freedom of choice reform (healthcare choice) in the PHC, enabling patients to freely choose PHCC [19]. In the same year, the third edition of the Swedish national guidelines for diabetes care was published [20–22]. In addition to the previous guidelines, new recommendations highlight the importance of providing group education under the guidance of a qualified leader that is well versed in the teaching methods of the programme, risk factor screening, and diabetes-specific education for RNs, in order to improve the diabetes care [14]. In Sweden, it is common for the county councils/regions to create regional guidelines and for the PHCCs to create their own local guidelines based on the national guidelines to facilitate implementation of the national guidelines [11].

No large-scale study has been conducted to identify whether any changes in the Swedish primary diabetes care have occurred since 2006. Thus, the aim of the present study was to compare the resource allocation and organisational features for patients with T2DM in Swedish primary diabetes care between 2006 and 2013.

2. Materials and methods

2.1. Study design and setting

The Swedish National Survey of the Quality and Organisation of Diabetes Care in Primary Healthcare (Swed-QOP) is a nationwide repeated cross-sectional survey conducted in the Swedish PHC. The study was approved by the Uppsala Regional Ethical Review Board (Dnr: 2013/376).

The population of Sweden increased from 9.1 million in 2006 to 9.6 million in 2013 [23] with an estimated diabetes (type 1 and type 2) prevalence of 4.8% in 2012 [24], a slight increase since 2006. Sweden has 21 county councils/regions with tax funded PHC [25]. The PHCCs are run by a manager, with at least half of the GPs being specialised in general medicine and half of the RNs being specially trained as district RNs [26]. RNs and GPs are employed by the county council/regions or health care companies while a small minority is private entrepreneurs. The healthcare professionals' salaries are paid by the PHCC.

2.2. Participants

A total of 957 Swedish PHCCs were identified from the Swedish Health & Medical Information Service Address Register as being active in 2006. After excluding PHCCs that had closed, had merged with another PHCC or were duplicates, a total of 921 PHCCs remained and were deemed eligible to participate in the study. Of these, 684 (74.3%) agreed to participate and answered the Swed-QOP questionnaire during the first half of 2007. For 2013, a total of 1169 PHCCs were identified,

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