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Challenges in Managing and Evaluation of Knowledge about Diabetes among Diabetes Patients in Slovenia

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ABSTRACT

The knowledge of elderly Type 2 Diabetes patients in Slovenia stayed unchanged from 2010-2020, in the course of the National Diabetes Prevention and Care Development Programme in Slovenia. New approaches and the organization of educational efforts to empower the patients were recommended. However, they are only present in a recent National program for managing diabetes mellitus 2020-2030 to a minimal extent. The new program's evaluation indicators are focused on processes and do not measure outcomes important to the patients.

Keywords: Diabetes mellitus, Evaluation, Knowledge, Outcomes

INTRODUCTION

The prevalence of diabetes is higher among the elderly. According to OECD [1], 19.3 million people aged 60-79 have diabetes across EU countries, representing 59.7% of all people with diabetes in the EU [1]. Slovenia does not differ from the comparable developed countries. Also, in Slovenia, the prevalence of Type 2 Diabetes (T2D) is increasing. According to the available data, there were 111,346 patients with T2D in 2017; among them, 53% was male. Their average age was 66.6 years and 59.7% were 65+ years old [2].

High glucose levels in T2D are the result of inadequate insulin resistance in peripheral tissues and impaired production of insulin in pancreatic β-cells. Treatment of diabetes and its common comorbidities (Arterial hypertension and hyperlipidemia) is essential to prevent long-term (cardiovascular and micro vascular) complications [3].

Treatments include both non-pharmacological and pharmacological interventions. Lifestyle interventions form the basis: Weight loss, healthy diet, physical activity, smoking cessation and avoidance of excessive alcohol consumption. When these interventions are not

sufficient to achieve target glucose levels, medications are added. The latter are classified into several groups based on their mechanism of action.

- Metformin stimulates Peripheral tissue sensitivity to insulin.
- Sulfonylurea and repaglinide stimulate insulin secretion from pancreatic β-cells.
- Acarbose prevents breakdown of larger carbohydrates to glucose in the small intestine.
- SGLT-2 inhibitors prevent reabsorption of glucose and facilitate its excretion in the urine.
- DPP_4 antagonists and GLP-1 agonists lower glucose levels by acting on the incretin system.

In the later stages of pancreatic failure, one (or more) of the many forms of insulin are used to replace human insulin [4, 5].

DISCUSSION

The first National Diabetes Prevention and Care Development Programme (NDPCDP) in Slovenia were adopted in 2010. The activities designed and implemented were targeted at the entire population and specifically for individuals at high risk for Type 2 Diabetes [6]. The main aims of the activities were to reduce the incidence of diabetes, postpone or prevent DM in high-risk individuals; increase the chances of early detection of diabetes, and reduce complications and mortality from diabetes. Many measures were prepared within the NDPCDP to empower the patient.

The authors of the recent study [7] compared the levels of DM knowledge within the elderly diabetic patients 65+ before and after the NDPCDP 2010-2020. The results revealed that the general knowledge about diabetes in the last decade has not significantly changed ($U=16942$, $P=0.809$), and the average scores amounted to 8.00 ± 2.4 at both time points.

The general knowledge about diabetes has slightly improved in females and worsened somewhat in males. It has also somewhat (but insignificantly) declined for patients in the age group 80+, while it remained approximately the same in the other age groups. The average level of general knowledge is positively correlated with education; in the last decade, the average knowledge scores slightly decreased among patients with secondary and tertiary education but remained approximately the same among patients with primary education.

The results indicated that despite the strengthened access to the education programs, the general level of diabetes knowledge has not significantly improved over the ten years of NDPCDP and remained at the same level. A study conducted in 2020 [7] claims that participation in education workshops organized at health promotion centers is low. Among possible causes, it lists well-organized and sufficient education within primary and secondary visits resulting in no further need for information and education, lack of motivation, non-attractive presentation and promotion of workshops from the nurse's side or organizational inconvenience. It suggests that other educational efforts, more adapted to the age and specific needs, with new didactic approaches, are needed when general information about the disease is widely accessible.

In 2020, a new National Program for Managing DM (NPMDM) [8] was prepared in Slovenia and covers the period 2020-2030. Approaches and tools used to reduce the incidence of diabetes further; to postpone and prevent DM, and increase the chances of early detection of DM are:

- Strengthening health literacy and support for the empowerment process for successful DM self-management and life quality.
- Improving clinical guidelines, clinical pathways, collaboration protocols, care plan, plan dismissal, care coordinator and case coordinator.
- Strengthening of the community-based approach to health at the level of municipalities.

- Developing a new structure or process for coordination and integration at the level of areas or regions and strengthening coordinated and integrated cross-sectorial actions at national, regional and local level.

The NPMDM states the education of DM patients as a basis for their health literacy and empowerment, which enable independent disease management. Education is seen as lifelong learning, needs to be available, structured and clear. The programme lists the essential education modules, such as disease acceptance, healthy lifestyle, pharmacological treatment, insulin treatment etc. There are no specific guidelines on didactic approaches, presentation and promotion of workshops that could increase attendance. However, the document lists that the health care team (family physician and team) should work and cooperate in providing education as one; the personalized approach is emphasized through the demand that the education is adapted to a person's needs and problems. The goals must be clear, feasible, measurable and accessible. The education at the primary level remains in the scope of family physician team and health promotion centers, to a lower extent also in health education centers and through patronage nurses. The innovative organization forms (namely information technology) are mentioned. NDPCDP 2010-2020 lacks evaluation. The study [7] was not designed as an evaluation study but rather as two cross-sectional studies measuring outcomes and applying a similar methodology. Therefore, it is regrettable to notice that all the indicators for monitoring activities in NPMDM concentrate on the processes. None of the indicators would focus on the outcomes of the people with DM. In the area of knowledge, where instruments for measuring knowledge, empowerment and health literacy of the patients are available, the indicators only include the number of publications on DM issues, number of workshops conducted, number of attendees and notice made in coordination group report.

CONCLUSION

To conclude, the only study trying to address the NDPCDP results confirmed that no increase in knowledge of patients was achieved during the 10-years of the programme and it shows a lost opportunity in increasing diabetes knowledge, thus empowering patients for better self-management of the disease. The call for other approaches to education was expressed; however, these are not entirely and in enough detail present in the new NPMDM. Moreover, the new programme does not exhibit indicators that would enable and measure the improvement in knowledge and empowerment of DM patients taking part in the actions planned.

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