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Review Article

Enhancing Self-Management in Diabetes: The Value of Therapeutic Education

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ABSTRACT

Diabetes is among the most common, serious and costly chronic diseases and a major cause of morbidity and mortality. Patient education is accepted as a valid component of chronic disease management for patients with chronic conditions. Most of diabetic individuals do not reach their glycemic target, leading to the appearance of health-related problems and complications associated with diabetes. Diabetes self-management education, the process of teaching individuals to manage their diabetes is a cornerstone of diabetes care and could improve glycemic control, alter patient behavior, and reduce diabetes complications.

Key words: Diabetes; health education; self-management education; diabetes education;

INTRODUCTION

In practice, about 80% of the diseases treated outside the hospital are chronic diseases and conditions. Although much of the treatment is highly efficient due to developments in medical research, its quality is often far from satisfactory. Many patients do not adhere to recommendations and less than half of them correctly follow their prescribed treatment plan. It has also been observed that patients are poorly informed about their condition and that few of them receive help to take responsibility for their treatment. [1] It is widely accepted that therapeutic patient education is a part of health care and long-term follow-up of many chronic diseases, including diabetes. From this point of view, it can be said that diabetes is exemplary disease as the first patient education activities were developed in diabetology after the discovery of insulin. [2]

Diabetes is a common and costly chronic disease which is associated with significant morbidity and mortality [3] and requires a number of decisions for self-management to be made and complex care activities to be executed daily by the patients with diabetes. [4] More specifically, the achievement and maintenance of glycemic control, aimed at preventing the incidence and progression of long-term complications, is one of the main therapeutic goals of diabetes treatment. This glycemic control requires daily involvement by the patient in the management of his intensified therapy, which includes, among others, several appropriate skills related to diet, physical activity and hypoglycemia. Thus, providing the patients with the ability to develop these necessary skills, education programs are part of the treatment. [5]

Diabetes Self-Management Education and training has been considered as an important part of the clinical management people with diabetes and aims to assist in optimizing metabolic control, preventing acute and chronic complications of the disease and in optimizing the quality of life in patients with diabetes, while keeping costs at acceptable levels. [3,6] In particular, the primary goals of diabetes

education include the provision of the necessary knowledge and skills training, helping individuals recognize the barriers and acquire problem solving skills in order to achieve effective self-care behaviors and behavior modification. [7]

Therapeutic patient education

Education is a key component of interventions for health promotion and disease prevention. Campaigns to promote maternal and child health, to prevent communicable diseases, to promote immunization and other preventive health services have a long history. [8] Therapeutic patient education is a patient-centered approach, focused on the needs, resources, values and patient strategies. [9] According to the World Health Organization, the Therapeutic patient education is to train patients in obtaining and maintain all the necessary skills needed for optimal self-management of their daily living with a chronic illness, [10] and according to another definition of the same organization, therapeutic patient education includes the provision of assistance to the patient and his family to understand the disease and its treatment, the active cooperation to its fulfillment and to take care of his own health status in order to maintain and improve the quality of his life. [11]

The patient education is accepted in many disciplines as a valid component of chronic disease management. [12,13] This education teaches the patient about the disease and its treatment, while patients who receive instructions are considered to be in a better position to participate in their own health care and therefore to maximize the therapeutic benefit.[12] Therapeutic education helps patients to learn and develop many abilities and skills and to adapt behaviors that lead to the improvement of various health parameters, including bio-markers and quality of life. [14]

Therapeutic patient education can consist in a single intervention or in several interventions and can be composed of of several individual or collective activities such as creating awareness, advising, learning, training, sharing experiences and knowledge between patients, providing psychosocial support, etc. Furthermore, these interventions can be performed by a single health professional or by a multidisciplinary team (nurses, physician, dietitian, pharmacist, psychologist, etc.). [15]

Diabetes mellitus

Diabetes is a major cause of mortality, morbidity and burden on healthcare systems worldwide, [16] which in 2012 caused as many deaths as HIV / AIDS (1 · 5 million), while since 1990 diabetes-related disabilities have grown substantially, especially among people aged 15-69 years. People with all types of diabetes are at risk of developing a number of complications that can threaten their health and survival [17] and seriously erode quality of their life, [18] while the high costs required for their care increases the risk for catastrophic medical expenditure. [17]

More specifically, the disease leads to both premature visits death and complications such as blindness, amputations, kidney disease and cardiovascular disease, while diabetic patients have more outpatient visits, use more drugs, are more likely to be hospitalized, and are more likely to require emergency and long-term care than individuals without diabetes. [19]

It has been estimated that the care of people with diabetes accounts for 4-5% of the total health budget of the United Kingdom, [20] and according to studies, in 2007, the US national economic burden of for pre-diabetes and diabetes reached $218 billion, of which $ 153 billion, was associated with higher medical costs and $ 65 billion with reduced productivity. The average annual cost per case was $ 2,864 and $ 9975 for undiagnosed and diagnosed diabetes respectively and $ 443 for pre-diabetes (medical costs only). [21]

Urbanization has also led to dramatic changes in lifestyle, particularly in developing countries. These rapid

transitions are accompanied by an increase of the risk factors for non-communicable diseases such as type 2 diabetes. [22] More specifically, the global burden of diabetes has dramatically increased over the past two decades, and is expected to affect more than 500 million adults by 2030, with most having type 2 diabetes. [23] The onset of the disease is linked to obesity and physical inactivity while many built environment factors, such as access to healthy food, crime level and walking are associated with diabetes prevalence. [24]

Therapeutic patient education in diabetes

Despite the development of new and more effective medicines for diabetes, the majority of diabetic patients do not achieve optimal glycemic control leading to the appearance of health-related problems. Negative attitudes, coping difficulties and psychological problems such as depression, anxiety and eating disorders are also common in diabetes and may contribute to poor patient outcomes. Still, studies have shown that perceptions and attitudes of patients and providers vary significantly, and this may lead to confusion and conflict and finally to poor outcomes. [25]

Unfortunately, it is estimated that 50% -80% of diabetic patients show a large deficit on knowledge and skills and less than half of people with type 2 diabetes achieve an ideal glycemic control ([HbA1c] <7,0%). [26]

Diabetes self-management education, the process of teaching individuals to manage their diabetes has been considered an important part of clinical management of the disease since the 1930s. [6,26]

Diabetic patients who have received diabetes education are more likely to use primary health care and preventive services, are more actively involved in their own care, take their medication as prescribed, control their blood glucose levels, their blood pressure and LDL cholesterol and have a lower health care related cost. [27]

Encouraging the self-empowerment of patients with diabetes can take various forms and include different components such as education to facilitate the acquisition of knowledge, skills and abilities for self-care in diabetes. Systematic reviews of randomized controlled trials have shown that educational programs for self-management can lead to reductions in HbA1c and lipids, and to improvement in their self-management skills and self-efficacy. The American Diabetes Association, in 2015, stated that all people with diabetes should receive self-management education or support at diagnosis and thereafter as required. [28] This education provides patients with self-management skills necessary for management of diabetes. Those skills, for optimal control of the disease, include the modification of lifestyle with diet, exercise and weight loss, self-monitoring of blood glucose, foot care, and the administration of oral medications and insulin injections. The education and training can be individualized to the metabolic stability of the patient, treatment recommendations, learning style, abilities, resources, motivation and the patient's readiness for change and uses didactic and non-didactic education sessions along with social, behavioral and psychological interventions. [29]

The National Standards for Diabetes Self-Management Education and Support emphasize personalized patient-centered educational approaches, which are accessible, professionally coordinated, evidence based, and support disease management and monitoring over time. [30]

Patient education in diabetes does not necessarily aim to increase individuals' knowledge regarding the disease, but to enable them to manage their diabetes in their daily lives. Education and information can take many delivery forms oral, written guidelines, booklets, group teaching sessions, role playing, audiovisual materials, peer groups, diabetes association meetings and diabetes camps. This education and awareness and the way it is delivered should

be tailored to the diabetic person, his age, his family situation and be culturally appropriate. [31]

The American Association of Diabetes Educators identified seven related to diabetes self-management behaviors as key behaviors to the disease self-management. These behaviors include physical activity, eating, medication taking, monitoring of blood glucose and troubleshooting especially for blood glucose, reducing the risk for diabetes-related complications and psychosocial adaption. Diabetes educators may use these behaviors and their measurements to determine their effectiveness with individuals or populations to compare their performance with established benchmarks and to demonstrate the unique contribution of self-management education in the overall context of diabetes care. [32]

Self-management education should include information about diabetes and how to safely care for it on a daily basis. Patients should also receive information about the various treatment options, the benefits and costs of each of these strategies, how to modify their behavior, and how to solve various problems. In addition, patients should understand their role as decision-makers and how to assume responsibility for their care. [33]

Nutrition counseling is a key factor of self-management education and improves glycemic control similar to many medicines that reduce glucose levels. The personalization of education based on cultural preferences of the individual, his health beliefs, psychosocial status, self-management skills, literacy and numeracy skills is important to facilitating behavioral change. The personalization of nutrition education according to reading skills and numeracy can be particularly important as people with low health literacy and numeracy skills have difficulty understanding food labels and estimating portion sizes. [34]

In 1994 the American Dietetic Association introduced the term "Medical nutrition therapy", which consists of the assessment of the nutritional status of the client, and the treatment, which includes nutrition therapy, counseling, and the use of specialized nutrition supplements. Medical nutrition therapy for diabetes includes a process which, when implemented correctly, consisting of: 1) the assessment of patients' knowledge and skills related to nutrition and diabetes self-management, 2) identification and negotiation of uniquely designed nutrition objectives, 3) nutrition interventions that include both a meal planning approach and educational material to the patient's needs with flexibility in mind that the plan will be implemented by the patient and 4) the evaluation of results and continuous monitoring. These steps are necessary to help patients to acquire and maintain the knowledge, skills, attitudes, behaviors and commitment to successfully meet the challenges of daily diabetes self-management. [35]

For patients with type 1 diabetes the participation in an intensive flexible insulin therapy training program using the carbohydrates measurement as a meal planning approach to glycemic control improvement. For patients using fixed daily insulin doses, consistent, carbohydrate intake with respect to time and amount can lead to improved glycemic control and reduction of the risk of hypoglycemia, while for individuals with type 2 diabetes or older adults portion control or healthful food choices can be effective meal planning strategies. [36]

All diabetic patients should also have the opportunity to benefit from the many valuable effects of physical activity. The promotion of physical activity may be a vital component in preventing or delaying the onset of type 2 diabetes. For people with type 1 diabetes the emphasis should be on adjusting the treatment regimen for safe participation in all forms of physical activity consistent with the individual's desires and goals. [37]

Education programs for foot care are also part of the overall management of

diabetes as among diabetes-related complications; diabetic foot is a major cause of disability and premature deaths. Painless neuropathic foot is the main cause of diabetic foot ulcers and amputations. Also, patients often do not recognize the early symptoms of the disease, and pay less attention to even the more serious of foot injuries. The prevention of foot ulcers requires strict glycemic control and proper foot care. Minimal foot self-care practices should include systematic daily inspection of feet and inside of shoes. [38] Thus, the combination of detailed written foot care information and interactive verbal instructions should complement the conventional diabetes education. [39] Educational interventions targeted at people who had previously experienced diabetic ulceration can be beneficial, already experienced foot problems may be more motivated. Moreover, people who are at greater risk of ulcer will have larger absolute benefit from interventions than those at very low risk. [40]

CONCLUSIONS

Diabetes is a chronic disease that affects millions of people worldwide and is associated with increased morbidity, mortality, complications and disability, may contribute to degradation of the patient's quality of life and increases the economic burden placed on healthcare systems. Therapeutic patient education in diabetes helps individuals to understand the disease and its treatment, to assess, modify and adjust their behavior to their health condition and develop those skills required to effectively manage their disease and improve their quality of life. This education should be part of the overall therapeutic effort of diabetes and has to be individualized and customized to the specific needs and characteristics of each patient.

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