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Review Article

Behaviours and educational effect on the improvement of self-care among the diabetics

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ABSTRACT

Globally diabetes causes a huge burden due its significant morbidity and mortality. In year 2019 almost 4.2 million people died from diabetic complications. Self-care is essential in management of diabetes since lifestyle modifications can successfully help in preventing diabetes associated complications. People with diabetes should engage in self-care practices to manage their condition. Diabetes education is essential to improve self-care for patients with the disease. The purpose of this research is to review the available information behaviours and educational effect on the improvement of self-care among the diabetics. A key element of diabetic management is sufficient knowledge of the disease as more education can develop a sense of empowerment and improve quality of life of patients. Patients with diabetes have demands that extend beyond just maintaining optimal glucose control and include preventing complications, limiting their impairment, and receiving rehabilitation. Healthy diet, exercise, blood sugar monitoring, adherence to medicine, strong problem-solving abilities, healthy coping mechanisms, and risk-reduction behaviours are the seven fundamental self-care behaviours in people with diabetes that predict positive results. Patient self-care is a cornerstone of diabetes care and is thought to increase patients' effectiveness in managing their condition by increasing awareness of the disease and enhancing prevention. It is evident from the available literature that diabetes education promotes self-care which has positive impact on health outcome and helps in managing the metabolic markers. Self-care among patients can only be encouraged through proper education at all healthcare levels

Keywords: Diabetes, Self-care, Education, Complication

INTRODUCTION

Diabetes mellitus is a chronic metabolic disorder linked with significant morbidity and mortality. An estimated 463 million (9.3%) adults in the world, suffered from diabetes as of the year 2019. These adults' range in age from 20 years to 79 years. It is predicted that by 2030, this figure would rise to 578 million (10.2%) of the adult

population worldwide, and that by 2045, it will reach 700 million (10.9%) of the adult population worldwide. As per 2019 estimates the prevalence of diabetes in men and women was 9.6% and 9.0% of the global population, respectively. Additionally, 4.2 million adults aged 20 to 99 years died from diabetes-related complications in 2019, and the cost of treating diabetes-related complications is anticipated to be at least 760 billion dollar (10%) of all adult healthcare spending. One in every six live new-borns accounting to approximately more than 20 million live births were affected with diabetes during pregnancy in 2019, according to estimates.[1] The prevalence of diabetes mellitus is increasing worldwide, and in developed nations it is increasing considerably more rapidly. The incidence peaks at about 55 years of age, and gender distribution is equal. By 2030, the global prevalence of type 2 diabetes mellitus (T2DM) is expected to increase to 7079 cases per 100,000 people, demonstrating an ongoing rise in all geographical areas. In lower-income nations, there are alarming tendencies of increased prevalence.[2]

The high prevalence of diabetes and its direct impacts on mortality, disability, and healthcare costs make it a serious problem that must be effectively controlled. Making and maintaining lifestyle changes beginning at the time of diagnosis is one of the critical strategies in this context, even though raising knowledge about the prevention of diabetes is the major objective. Patients with diabetes must be educated about the disease, learn how to use medication appropriately, modify their diet and physical activity regimens in accordance with the severity of the disease, and adopt behaviours like self-monitoring and regular medical follow-up and care to effectively manage their condition. To acquire and practice these behaviours, it is critical to enhance person's self-care.[3-5] Diabetes education is a crucial component of diabetes therapy and one of the most successful strategies to improve lifestyle choices. By increasing adherence to treatment, decreasing complications, lowering treatment costs, and enhancing the quality of life of those with diabetes. Diabetes education strives to ensure the effective participation of those with the disease.[6]

In order to alter everyday self-care behaviours and manage the disease and its complications, self-efficacy must first be raised. Among T2DM patients, self-efficacy is regarded as the most significant of self-care behaviour. The idea of quality of life as it relates to improved health is becoming more widely acknowledged as a significant result of rehabilitation programs and as a sign of how adaptable diabetes patients may be following a treatment or after being discharged from the hospital. Introduction to diabetes self-management education, which entails management of nutrition, exercise, and medication intake to prevent complications and achieve better health outcomes, has a significant role in lowering problems linked with diabetes and early death. Diabetes management is time-consuming and frequently has an influence on the physical, psychological, and financial burdens of self-management, particularly diabetic wound management.[7]

Self-care must be followed for the individuals whole life to successfully treat diabetes. Self-care refers to actions people take to maintain their own health, wellbeing, and way of life. People with diabetes should engage in self-care practices to manage their condition, such as maintaining a healthy weight, getting regular exercise, controlling their blood sugar, using oral antidiabetics appropriately, understanding the benefits and drawbacks of insulin therapy, abstaining from alcohol and tobacco use. Diabetes education is crucial for enhancing self-care among diabetic population.[8] Diabetes self-care has been described as an evolutionary process of knowledge or awareness development by learning to cope with the complexity of the disease in a social context. There is a critical need for reliable and effective metrics for diabetic self-management because patients and/or family handle the vast bulk of day-to-day care in diabetes. In people with diabetes, there are seven critical self-care practices that are associated with positive results. These include practicing risk-reduction behaviours, exercising regularly, checking blood sugar levels, taking medications as prescribed, and engaging in healthy problem-solving and coping techniques. These suggested measurements can be helpful for academics testing novel treatment modalities as well as physicians and educators caring for specific individuals.[9] The purpose of this research is to review the available information about behaviours and educational effect on the improvement of self-care among the diabetics.

LITERATURE SEARCH

This study is based on a comprehensive literature search conducted on September 7, 2022, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed the information about behaviours and educational effect on the improvement of self-care among the diabetics. There were no restrictions on date, language, participant age, or type of publication.

DISCUSSION

Diabetes is a chronic illness for which people are responsible for 95% of their own care. Patient empowerment and efficient diabetes education can help people manage their illness and develop the self-care habits required for excellent diabetes self-management. To sustain effective diabetes self-management and prevent or delay diabetic complications, the patient must feel that they have this degree of control. It is essential that patients control their conditions as best they can to

lower the human and healthcare costs of treating diabetic complications since the number of people living with diabetes today places a significant strain on the community's healthcare resources.[10] A key element of diabetic care is having adequate information of the disease. Knowing more about diabetes may give one a sense of empowerment and improve their quality of life. Although it has been challenging to show that formal diabetes education alone improves metabolic control, it is obvious that changes in outcomes cannot happen without comprehensive diabetes education. The American diabetes association encourages diabetic patients to participate in formal diabetes education programs. Numerous sources, including one-on-one conversations with physicians, nurses, and dieticians, are used to learn about diabetes.[11] Self-care behaviours among diabetic patients in detail are illustrated in (Figure 1).

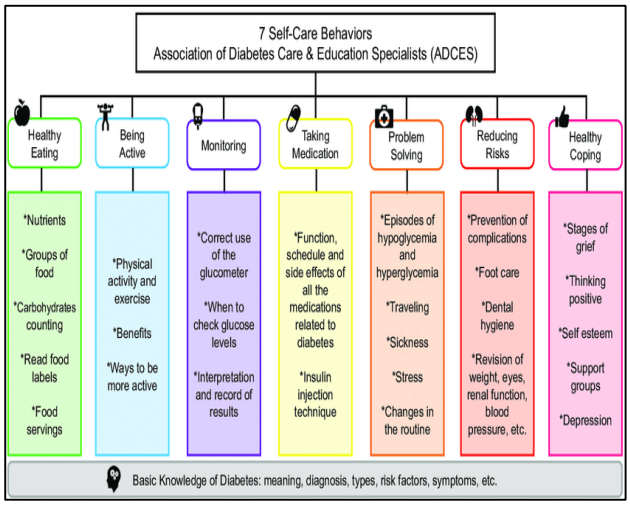

Figure 1: Description of self-care behaviours among diabetic patients.[27]

Evidence from literature

Findings of an experimental study showed that diabetes education helped diabetic individuals better control their metabolic markers, particularly their triglycerides and glycosylated haemoglobin (HbA1c). Additionally, after intervention, diabetic individuals who underwent the employed intervention showed increased self-care. The metabolic control measures in diabetic patients revealed that while triglyceride dramatically fell from 152.62 to 150.57 and HbA1c significantly decreased from 8.66 to 7.73 following intervention, other metabolic parameters were only marginally reduced. After intervention, the diabetes self-care scale significantly increased from 2.4 to 3.3.[12] Results of another experimental study concluded that tailored diabetes self-management instruction and support was superior to standard care in terms of enhancing self-care and quality of life as well as reducing the incidence of diabetic foot ulcers both immediately and three months after the intervention.[13] Results of a randomized trial showed that following self-management education based on self-care deficit nursing theory there was no statistically significant difference in HbA1c or self-care activities between the two groups, but a difference in self-care agency was seen between the two groups ($p<0.05$). When the pre-test and post-test results were compared, the intervention group's scores for self-care agency and self-care activity were significantly higher after the interventions, and HbA1c value was significantly lower ($p<0.05$). At the first and sixth months of the trial, there was no difference in the scores of the control group ($p>0.05$).[14]

Results of an intervention study showed that that patient well-being is improved by structured patient education after the instruction program. The foundation for managing diabetes should be an educational program. General health ($p=0.027$), physical role ($p=0.001$), physical functioning ($p=0.027$) and social functioning ($p=0.029$) all showed a significant rise.[15] Results of randomized trial showed that in the educational intervention group, there was a significant difference in the mean HbA1c level before and two months after the intervention ($p=0.003$). The control group did not experience a significant change in this regard. Additionally, the intervention group's mean emotional intelligence score was greater than the control group's score ($p=0.08$). Education about self-care increased T2DM patients' emotional intelligence and HbA1c levels.[16] Findings of a Turkish multicentre study showed that 78.5% of people received diabetes education over the past year, with 46.7% of them having it just once, 84.8% of the patients said they received individualized diabetes education. The percentage of people who learned about oral antidiabetics (78.5%) and glucose testing at home (78.5%) was found to be greater than the percentage of people who learned about exercise (58.8%) and foot care (61.6%). Patients who got diabetes education three times or more, as well as patients who received education both individually and, in a group, had better levels of self-care and glycaemic control ($p<0.05$).[8] Results of another randomized trial concluded that the mean body mass index, waist circumference, and blood glucose levels are all reduced as a result of professional health educators providing structured diabetes self-care education to diabetics in primary health care. In a similar manner, it also lowers high blood pressure.[17]

Mohammadi concluded in his study findings that in diabetes patients, self-care distance education may significantly improve patient self-care and ultimately raise the mean patient quality of life score. A wide variety of these patients might receive free education through the use of social networks, and on the other hand, it could lessen educational disparities and provide education in rural areas.[18] Maia concluded in her longitudinal study findings that educational intervention lasting at least eight hours was statistically more likely to increase self-care scores ($p<0.05$). At the end of the educational program, there was a statistically significant increase in the knowledge scores.[19] Results of another experimental study showed that following the intervention, there were

significant improvements in foot self-care behaviour (p=0.001), foot care outcome expectation (p=0.001), knowledge of foot care (p=0.001), quality of life including physical symptoms (p=0.003), fasting blood glucose (p=0.010), foot hygiene (p=0.030), and anhydrosis (p=0.020).[20] Results of another interventional study showed that there was an improvement in the self-care habits, and the scores for family support and diabetes self-care were both high after educational intervention.[21]

Abiodoun stated in his study that the level of patient knowledge of the condition through health education and self-management is related to the positive health outcomes of T2DM. The best chance of achieving and maintaining the management of glycaemic and cardiovascular risk factors belongs to the patient who is well-informed. Therefore, a lack of self-care knowledge can lead to developing serious diabetic complications such as retinopathy, nephropathy, neuropathy, and atherosclerotic changes. As per various studies, people who are better informed about their condition and its implications are more likely to comply with treatment and experience fewer disease-related complications. Positive and desirable health outcomes are intimately related to this. The level of patient knowledge about the condition and how to manage it, which is acquired through self-management education, proper attention, and dedication to self-care practices using accessible health resources, is related to the patients' levels of optimal and good health outcomes.[22] Diabetic self-management is regarded as the cornerstone of diabetes control. The establishment and implementation of successful methods targeted at limiting and avoiding catastrophic diabetes-related morbidities and the ensuing financial and personal expenses associated with this condition will be based on education about the diabetes self-management.[23]

The practice of self-management, comprising diet regulation, physical activity/exercise, blood sugar monitoring, medication compliance, and self/foot care, plays a crucial role in the management of T2DM. Regular self-management actions tend to reduce complications because the success of diabetes self-management depends on individual self-care activities to regulate the symptoms present. The effectiveness of many therapies, such as diabetes self-management education and diabetes self-care, to improve patients' self-management is still lacking. It is anticipated that many theoretical stances can be included into the creation of self-management coaching treatments. Additionally, in order to improve quality of life, families' knowledge and abilities in supporting patients in overcoming disease-related challenges must grow.[24] Patient responses to diabetes education programs are significantly influenced by patient health literacy levels. Patients with low health literacy frequently fail to interpret medical education pamphlets, follow the directions on the labels of prescribed medications, maintain a balanced diet, and successfully control their diabetes. It has been demonstrated that providing patients with self-management education can delay or prevent both acute and chronic complications linked with diabetes. It is frequently recommended that healthcare practitioners use social media to facilitate quick, direct, and efficient communication between patients and healthcare professionals. Patients also gain more from self-management plans if interventions are carried out in a comfortable and familiar setting, such their homes.[25]

To minimize diabetes-related morbidity and death, diabetic individuals must carry out their daily self-management tasks in accordance with the guidance of their healthcare professional. Patient self-management is fundamental of diabetes care and is thought to increase patients' effectiveness in managing their condition by raising disease awareness and enhancing prevention. The patient's health perception of their illness, however, affects how they manage their own care. Understanding the diabetic self-care practices and health actions, as well as behavioural changes are the specific health actions that would preclude the diabetic related complications and encourage normal wellbeing in the case of diabetic patients. Additionally, by concentrating on diabetic care education and support programs related to promoting self-care and management activities to the targeted population, self-care compliance and improvement as well as minimization of self-care barriers are made possible.[26] Literature strongly supports the role of diabetes education in increasing self-care and reducing complications among diabetic population although studies on characteristics and factors affecting the efficiency and effectiveness of the education program are limited, future research including more population-based surveys and health promotion activities can aid in increasing the awareness regarding self-care and implementation of diabetes education

CONCLUSION

Self-care is of utmost importance in management of diabetes and preventing associated complications. More awareness and health education programmes at primary care and community level can be beneficial in educating the population for self-care and management of diabetes which can eventually lead to decreasing the burden of disease.

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