DIABETES MELLITUS: Literature Review

Literature Review

Ta'Shayla Mitchell

Lakeview College of Nursing

DIABETES MELLITUS

Diabetes Mellitus (DM) is a serious disease that occurs when the body has difficulty regulating the amount of dissolved sugar or glucose in the bloodstream. In order to fully understand diabetes mellitus, it is necessary first to understand the role glucose plays with regard to the body. When we eat or drink, much of the food is broken down into a simple sugar called glucose. Glucose provides the energy the body needs for daily activity (“Diabetes Mellitus: An Overview," 2018). Insulin is the hormone that takes sugar from the foods we ingest and moves it to the body’s cells. If the body does not make enough insulin or does not make insulin at all, the glucose from the food stays in the bloodstream, resulting in high blood sugar. Diabetes is a key health concern worldwide. In 2015, about 9.4 percent of the United States population had diabetes, including 30.2 million adults aged 18 and older (Berry, 2019). The purpose of this literature review will be to take a look at how this disease affects individuals living with diabetes, how hospitals can improve diabetes education, and successful strategies for diabetic self-management.

Fears and Needs of Patients with Diabetes: A Qualitative Research in Rural Population

This article focuses on the various fears and needs of patients and family members relating to the disease and specified treatment. This article also investigates the patients' and family's needs and feelings regarding the care received by health care professionals (Papaspurou et al., 2015).

Key Points

From the collected responses, the patients and family members reveal many fears and needs that relate to living with diabetes mellitus. Patients expressed they feel most comfortable when a nurse is at the bedside to inform and encourage any changes that may occur. The list of fears included; fear of life itself, fear of complications, fears for work and family, fear of stigmatization, and deprivation (Papaspurou et al., 2015). Diabetes is linked with a reduction in life expectancy due to specific complications related to microvascular effects. These include but are not limited to retinopathy, nephropathy, and neuropathy. Macrovascular effects also shorten life expectancy, including ischemic heart disease, stroke, and peripheral vascular disease. Tight control, multiple injections, and multiple daily blood sugar checks have been proven to prevent, slow, or even reverse complications (Nadia, 2017). A patient was asked why the fear of life itself is associated with diabetes, and the response was, "*I was worried... If my condition will become worse... I felt very healthy ... and I was afraid that I would not continue to be so ...", "At first I was not scared at all ....because I did not know ... now that I learned the more anxious I have become... for my life" (*Papaspurou et al., 2015, p191).

In the survey, patients were asked in what way they believe a nurse can be useful during this time of their lives. Patients stated needs for psychological support, training, technique learning, diet and exercise education, and recognizing and addressing complications. People with diabetes are frequently hospitalized for various reasons — one in particular, diabetic foot. Patients need to be aware of its prevention and how to avoid this complication. *"I did not believe all the problems that diabetes can bring.... ... can get to me ...Now I have asthma..... I had a Coronary Stent procedure ... and now something is wrong with my leg.....Why is it like this..."* (Papaspurou et al., 2015, p194). These are words from a patient who had diabetic foot.

Assumptions

The researcher assumes that the primary concern is patient acceptance of the disease and familiarization with treatment. “According to International Diabetes Federation, at least 285 million people worldwide have diabetes, and this number is expected to increase to 438 million by 2030, with two-thirds of all cases living in low- or middle-income countries” (Papaspurou et al., 2015, p190). The researcher also believes that besides pharmaceutical care nurses also play a vital role in psychological care, which is essential to patient acceptance of the disease. If nurses are not providing psychological care to patients, then they are not as likely to accept their condition.

Deficit/Conclusion

This qualitative study was conducted over patients with diabetes mellitus and their willingness to come to terms with this condition and eventually reach full acceptance. The results indicated that patients with diabetes are exposed to a variety of fears and needs, related to the diagnosis, treatment, expected impacts, prognosis, and the daily management of the disease. Their fears were related to the complications and the effects on their lives like any other chronic disease, which cause the patients to have a concern for their daily life and life in general (Papaspurou et al., 2015).

Redesigning Hospital Diabetes Education

This article focuses on different methods to deliver diabetes education to support patient safety and glycemic control in the transition from hospital to home. The article does so by examining barriers and facilitators of integrating web-based diabetes survival skills education (DSSE) into the inpatient unit workflow (Smith, Baker, Bardsley, Mccartney, & Magee, 2019).

Key Points

The burden of diabetes on the patient and the health care system is significant. In 2014, there were 7.2 million hospitalizations and 14.2 million emergency department visits for adults with a diabetes diagnosis (Smith et al., 2019). Diabetes self-management education and support (DSMES) are critical to reducing the burden of the disease on the patient and the health care system. DSMES should also enhance patient quality of life and clinical outcomes. DSMES is defined as the "ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-management" (Smith et al., 2019, p151).

Diabetes to Go is a web-based program that was developed for the study. It provides an adaptive learning approach to delivering diabetes survival skill education. Participants for the study include diabetic patients, nurses, nurse managers, and patient care technicians. First, patients must complete a 15-question survey to assess their knowledge of diabetes survival skills. Responses to the individual survey questions are then used to guide patients to video content that is based on their knowledge deficits. The videos range from 3 to 6 minutes over various survival topics. Healthcare members that were participating in the study were enthusiastic about enhancing the effectiveness of diabetes education for their patients. Four common themes emerged from the study: educational content issues, platform usability, tablet feasibility, and workflow considerations (Smith et al., 2019).

Assumptions

The researcher assumes that the transition period between hospital and home for patients with diabetes has been associated with significant adverse patient events, including preventable medical errors and rehospitalization. Diabetes complications often share the same risk factors, and one complication can make another complication worse. For example, a person with diabetes may also have high blood pressure, which worsens eye and kidney disease ("Putting the Brakes on Diabetes Complications," 2017). The article suggests that several reports have shown that diabetes survival skills education delivered in the hospital setting can impact outcomes. A pilot study of diabetes training for hospitalized patients revealed that nurse-delivered training improved patient hospital treatment satisfaction and patients had lower blood glucose levels upon discharge compared to usual protocol. Another study of hospitalized patients with type two diabetes mellitus found that inpatient education improved diabetes knowledge and medication adherence. These improvements were sustained up to 3 months after discharge. (Smith et al., 2019).

Deficit/Conclusion

This qualitative study was conducted over the integration of web-based diabetes self-management and support education and training in the inpatient setting. The results indicated that challenges exist integrating tablet-delivered knowledge into the nursing unit workflow. There were education content errors involving the reading and understanding level of the material. Platform usability issues were evident. Improvements need to be made on how navigable the program is for users. Tablet feasibility for whether all hospitals can afford them and if patients

will have access to one after discharge to continue education. Lastly, workflow integration because caring for a diabetic patient can be tedious, and extra time has to be made to include web-based education (Smith et al., 2019). While the study may have a long road of improvements ahead, the idea is grand. Receiving education and training while inpatient should help prevent future complications after discharge.

Discovering Successful Strategies for Diabetic Self-Management: A Qualitative Comparative Study

This study focuses on the lifestyle of patients in good or poor control of diabetes to identify naturally occurring practices and strategies that result in the successful management of the illness. Effective management skills are associated with better long-term outcomes and fewer complications. Self-management is an essential part of diabetes management and includes patient practices concerning diet, physical activity, glucose monitoring, and correct medication use (Weller, Baer, Nash, & Perez, 2017). The goal is to identify natural practices or strategies that result in reasonable blood sugar control.

Key Points

To identify practices that will distinguish reasonable glycemic control from poor glycemic control, in-depth interviews were combined with comparative study design. The participants in the study were adult patients aged 18 or older with type 2 diabetes for at least one year. The patient population for the study was ethnically diverse: 62% white, 17% African-American, and 17% Hispanic (Weller et al., 2017). Participants were asked open-ended questions about lifestyle factors that affect glycemic levels. Questions pertained to diet, medication use, exercise, glucose

testing, disease history, demographics, and their support systems. After the interview portion, the participants A1C was obtained from their medical records in hopes that there would be a correlation between practices and A1C levels.

When asked about diet, the patients whose A1C levels were within normal range admitted that they limit salt intake, eat more fruits and vegetables, and monitor caloric intake. For those whose A1C levels were in the "fair or poor" range, they reported changing their diet only because of their diagnosis and still allowing themselves to have "cheat" days. There was a high rate of disabilities within the participants (usually due to myocardial infarction or stroke) that limited their physical activity levels. One patient reported, "*I used to walk twice a day for about 15 minutes but, I broke my foot and haven't walked as much since"* (Weller et al., 20173, p4). When asked how family and friends help them manage their diabetes, few patients reported a significant amount of support. Those who were in good control reported having *less* support than those in poor control.

Assumptions

This qualitative comparative analysis results identified themes linked to glycemic control. Based on the results, the researcher suggests that there is a single path to good control of diabetes. The route includes monitoring sodium intake and no dietary cheating, not skipping medications, and a fair amount of physical activity (Weller et al., 2017). According to Healthline website, there are 15 easy ways to manage diabetes in everyday life. Some included exercising regularly helps lose weight, control carbohydrate intake, increase fiber intake, drink water, and stay hydrated, and implement portion control (Semeco, 2016). All of the above compliment the evidence provided in this study.

Deficit/Conclusion

This qualitative study attempted to identify successful lifestyle strategies for the management of type 2 diabetes. While medication use, glucose monitoring, exercise, and diet have shown to be effective in self-management, their effectiveness declines over time (Weller et al., 2017). Patients are usually exposed to management practices during diabetes education classes or clinic visits. By implementing a study like this, it is easy to get real insight into methods that people use every day to live a happy and healthy life with this disease.

Conclusion

Throughout this literature review, it is evident that diabetes mellitus is a multi-faced disease. This condition affects millions of people year-round. Early diagnosis and intervention are the starting point for living well with diabetes. The longer a person lives with undiagnosed and untreated diabetes, the worse their outcomes are likely to be (“10 Facts on Diabetes, 2018). Most people are unaware that type 2 diabetes is the most common form of the disease, but it is also a reversible disease. Through diet changes and weight loss, it is possible to reach and maintain normal blood glucose levels without medication (Weatherspoon, 2019). By analyzing the fears and needs of patients and their families, redesigning hospital education, and discovering self-management strategies, the road to safe living with diabetes could be more accessible. This literature review looks at three very different but essential aspects of diabetes to create a big picture. If we take the reasoning from each article seriously, more lives could be saved every day! Effective self-management of diabetes is understood to be a critical step in achieving a healthy and satisfying life; however, it requires a great deal of personal motivation and behavioral change.

References

10 Facts on Diabetes. (2018, October 05). Retrieved from https://www.who.int/features/factfiles/diabetes/en/

Berry, J. (2019, April 01). Type 2 diabetes statistics: Facts and trends. Retrieved from https://www.medicalnewstoday.com/articles/318472.php

Diabetes Mellitus: An Overview. (2018). Retrieved from https://my.clevelandclinic.org/health/diseases/7104-diabetes-mellitus-an-overview

Nadia. (2017, December 30). Five Big Diabetes Fears and What to Do About Them. Retrieved from https://www.diabeteshealth.com/five-big-diabetes-fears-and-what-to-do-about-them/

Papaspurou, M., Laschou, V. C., Partsiopoulou, P., Fradelos, E. C., Kleisiaris, C. F., Kalota, M. A., … Papathanasiou, I. V. (2015). Fears and Health Needs of Patients with Diabetes: A Qualitative Research in Rural Population. *Medical archives (Sarajevo, Bosnia, and Herzegovina), 69*(3), 190–195. doi:10.5455/medarh.2015.69.190-195

Putting the Brakes on Diabetes Complications. (2017, December 21). Retrieved from https://www.cdc.gov/features/preventing-diabetes-complications/index.html

Semeco, A. (2016, May 3). 15 Easy Ways to Lower Blood Sugar Levels Naturally. Retrieved from https://www.healthline.com/nutrition/15-ways-to-lower-blood-sugar#section5

Smith, K. M., Baker, K. M., Bardsley, J. K., Mccartney, P., & Magee, M. (2019). Redesigning Hospital Diabetes Education. Journal of Nursing Care Quality, 34(2), 151-157. doi:10.1097/ncq.0000000000000349

Weatherspoon, D. (2019, March 6). Is Type 2 Diabetes Reversible? Retrieved from https://www.healthline.com/health/type-2-diabetes-reversible

Weller, S. C., Baer, R., Nash, A., & Perez, N. (2017). Discovering successful strategies for diabetic self-management: A qualitative comparative study. BMJ Open Diabetes Research & Care, 5(1). doi:10.1136/bmjdrc-2016-000349