

## **Type 2 Diabetes Mellitus**

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Type II diabetes is a condition that affects millions of people worldwide and has been a significant health concern. Type II diabetes is when the body has trouble using insulin, your body is either insulin resistant or your pancreas can't produce enough insulin which leads to a high blood sugar level (Dickinson, 2023, pp. 1288). Unlike type 1 diabetes, which is treated primarily with insulin, type II diabetes is managed by treating the underlying risk factors such as poor dieting, obesity, or living a sedentary lifestyle. With type II diabetes, hyperglycemia is common, which results in polyuria, polydipsia, and polyphagia. If type II diabetes is not controlled, it can lead to long-term complications such as blindness, kidney failure, cardiovascular disease, and loss of lower extremities (CDC, 2022). Type II diabetes is a chronic condition that affects the body's ability to regulate blood sugar levels, but it can be managed through lifestyle changes such as diet and exercise.

### **Statement of the Problem**

According to Kanaley et al. (2022) type II diabetes currently affects more than 463 million people in the entire world, while in the United States 10.5% are diagnosed with diabetes mellitus. Within those 10.5%, 90-95% of people are diagnosed with type II diabetes mellitus (Kanaley et al., 2022). Type II diabetes is the most common type of diabetes, and it can be preventable by dieting and exercising. Common risk factors for type 2 diabetes are obesity, elderly, sedentary lifestyle, and family history of type II diabetes (Dickinson, 2023, pp. 1288). Certain ethnic groups are more susceptible to developing type II diabetes like African Americans and Hispanics due to socioeconomic factors. Diabetes involves controlling blood sugar. If blood sugar is too high, hyperglycemia, then take insulin as prescribed, but if it's too low, hypoglycemia, then take 15-20 grams of carbohydrate snack or a 4oz juice (Dickinson, 2023, pp.

1312). However, controlling blood sugar gets complicated if there's little to no compliance or not understanding of how blood glucose works. Type II diabetes occurs when the endocrine function of the pancreas specifically the beta cells is still producing insulin but either not enough or the body chooses to ignore the insulin (Dickinson, 2023, pp. 1288)). Insulin is a hormone that allows glucose to enter the cells and be used for energy (Dickinson, 2023, pp. 1286). Without enough insulin production, glucose tends to build up in the bloodstream resulting in hyperglycemia. Since type II diabetes is usually characterized as hyperglycemia, there is a risk of having hyperosmolar hyperglycemic syndrome (HHS). HHS is a medical emergency, it's when your blood glucose is in the 600-2000 mg/dL. Having HHS means that you are dehydrated, and the goal is to rehydrate and slowly decrease blood glucose (Dickinson, 2023, pp. 1311). The chances of death are double with type II diabetes compared to those without diabetes (Duan et al., 2021). If diabetes isn't treated, it can lead to serious complications. For example, it can increase the risk of developing end-stage renal disease, chronic kidney disease, and even cause blindness (Dickinson, 2023, pp. 1315). Diabetes can also lead to peripheral artery disease, foot ulcers, and in some cases amputations (Duan et al., 2021).

Type II diabetes being left untreated can happen especially when medical costs are double the amount of someone who is not diagnosed with diabetes mellitus (CDC, 2022). When it's untreated, it results in more doctor visits, increased healthcare expenses, a higher susceptibility to complications, negative impact on the ability to be productive and overall quality of life. Nurses play a crucial role in providing care and support to people with diabetes. As diabetes mellitus is at high risk or worsens, it is prone to serious complications. If there is an increase of people who are not being treated then nurses may have to manage the complications such as blindness, renal, cardiovascular, and kidney disease on top of managing type II diabetes symptoms. Nurses will

need to know diabetes management, what medications to give, wound care for any foot ulcers, and stay up to date with treatments (Kumar & Mohammadnezhad, 2022). It will be important for nurses to involve more multidisciplinary members such as audiologists, ophthalmologists, podiatrists, pharmacists, and dentists for the complications that were developed (CDC, 2022). The nursing community will need to provide more intensive care, continuous monitoring of blood sugar, and assist with wound care.

### **Risk Reduction/Treatment of the Problem**

In type II diabetes, the body still has working beta cells, allowing insulin production. The key to preventing type II diabetes is nutrition and exercise. A healthy diet includes reducing saturated and trans-fat, and low carbohydrate consumption. Compliance is most important during nutritional therapy. Low-fat, low-carb, and sugar-free diets can help reduce blood pressure, triglycerides, and slow the rate of developing long-term complications (Kanaley et al., 2022). Carbohydrate counting prevents blood sugar from rising too quickly so it's important to know how much is being taken. Fats should not be more than 25-30% of the meal (Dickinson, 2023, pp. 1300). We can find healthy fats in olives, nuts, and avocados. Lean meat protein is recommended as the primary source of protein (Dickinson, 2023, pp. 1300). Instead of adding sugar or drinking sodas, sweeteners can be used without messing with blood glucose (Dickinson, 2023, pp. 1300).

Another prevention is exercising, it helps increase insulin sensitivity and lower blood glucose. It is important to have a carb snack before exercising to prevent hypoglycemia. Some examples of aerobic exercises are walking, jogging, bicycling, and hiking. Doing yoga or tai chi helps to "improve A1C, blood lipids, glycemic control, and neuropathic symptoms", it is all about promoting physical activity and reducing stress (Kanaley et al., 2022). Number one is

eating healthy, diet is important to prevent a hyperglycemia episode by lowering glucose intake. Number two is regular physical activity, whether that's running, jogging, or swimming. It's important to exercise three times a week to increase HDL and improve insulin sensitivity. Regular blood sugar monitoring helps to keep an eye on what is going on in the body, and lifestyle choices are based on the blood sugar level.

Even if someone has risk factors, we can use diagnostic tests to diagnose and see how well diabetes is being managed. Typically, it's diagnosed through routine lab work or when symptoms become more noticeable (Dickinson, 2023, pp. 1289). However, when signs and symptoms start to show such as polyuria, polydipsia, polyphagia, fatigue, recurring infections, and vision changes, it means that 50-80% of beta cells are no longer secreting insulin (Dickinson, 2023, pp. 1289). Hemoglobin A1C is used to see how well blood glucose is being managed and if there's sugar hanging in the blood in the last 90-120 days (Dickinson, 2023, pp. 1289). The goal for A1C is to be less than 6.5%. It's important to monitor hemoglobin A1C to determine treatment plan. A type of screening that is important to do is to check blood sugar before meals using a blood glucose meter. A type of diagnostic that can help distinguish between type I and type II diabetes is collecting insulin serum. A venipuncture is performed where one sample of insulin and another for glucose level is being collected (Lippincott, 2022). If there's severe decrease in insulin level and glucose level is high it indicates type I diabetes but if insulin level is high and blood glucose is normal then it indicates Type II diabetes (Lippincott, 2022).

### **Planning of Teaching Content**

Learning outcomes is they will understand that exercising doesn't require running, it can be walking for 30 minutes every day. They will walk 30 minutes every day or exercise 2-3 times per week. I will give out examples of exercise that has something involved with their interests. I

will suggest putting timers and create a schedule that allows for exercise on certain days. Another objective is that they will understand what type of foods correlates to type of nutrients and relate it to their favorite foods. A person will learn what to eat and be engaged by using their favorite foods as examples. They will teach back what a diabetic diet consists, or we can create a meal plan with them that has low fat and low carbohydrates. They will also continue to monitor blood glucose before meals. We will utilize a tri fold poster and handouts that contains food ingredients and exercise examples. In our teaching plan, we will include signs and symptoms of hypoglycemia and hyperglycemia so they can recognize and know what to do if that happens. We will teach the importance of monitoring feet, skin, and eyes to detect complications. We will encourage the community to engage by asking them questions, play a spin the wheel game to assess what they learned, and give out snacks that are low fat and sugar free.

### **Conclusion**

Untreated Type II diabetes can lead to significant complications such as cardiovascular disease, kidney dysfunction, and neuropathy. However, there is hope in preventing by focusing on a balance healthy diet and regular physical activity every week. It is crucial to raise awareness among susceptible ethnicities by providing them with the knowledge and resources that will encourage them to adopt a healthier lifestyle for their quality of life. By taking action and educating the community about the impact that diabetes mellitus has on our body, it will help them better understand why it's important to make positive choices. By ensuring that they understand the key points of type II diabetes, we can promote a better overall health and decrease the risk of diabetes progression.

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