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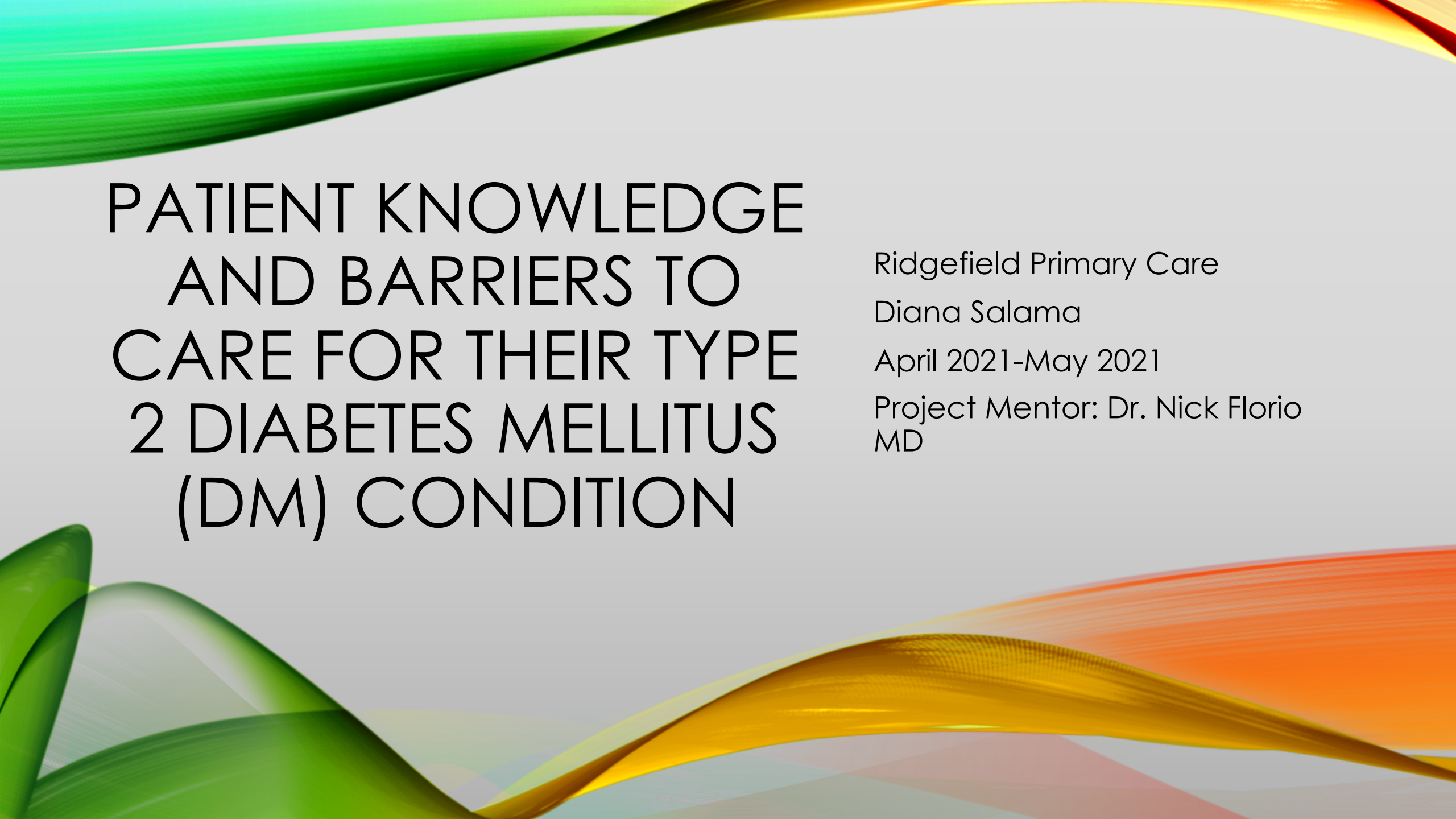


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PATIENT KNOWLEDGE AND BARRIERS TO CARE FOR THEIR TYPE 2 DIABETES MELLITUS (DM) CONDITION

Ridgefield Primary Care

Diana Salama

April 2021-May 2021

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MD

PROBLEM IDENTIFICATION

- According to the October 2020 Connecticut State Department of Public Health Statistics Report:
 - 9.6% of adults 18 and older have diabetes in Connecticut.
 - The prevalence has been increasing reported by Eastern Connecticut health districts such as in:
 - Waterbury, New Britain, Hartford, and Bridgeport
 - The prevalence is highest among 45–64-year-olds at 12.2%
 - Prevalence of Diabetes is highest among the Hispanic and Black population at 12.5% and 10.9% respectively.
 - Diet:
 - 64% of adults 18 and older with diabetes eat one fruit a day,
 - 76% consume one vegetable a day, while 16.3% consume at least five fruits and vegetables per day.
 - 51.4% of Connecticut adults 18 and older with diabetes have taken a class on how to manage their diabetes.
 - Higher prevalence with education and income.

PUBLIC HEALTH COSTS

- According to the Public Health Department, costs of diabetes in Connecticut: (2017)
 - 3.7 billion dollars spent total for diabetic related care
 - 281.2 million was billed for diabetic related hospitalizations
 - 83.7 million dollars is spent on lower limb amputations that is diabetic related
- According to the American Diabetes Association of Connecticut:
 - Every 4 minutes a limb is amputated due to diabetes
 - Medical expenses for diabetic patient average about 2.3 times higher than those who do not have diabetes.
 - Prevention Costs in Connecticut:
 - The CDC Division of Diabetes Translation has spent \$701,088 on diabetes prevention and educational programs (2016)
- According to the Department of Public Health CT: 111,511 total visits to the ED (2018)
 - The number of ED visits due to diabetic related morbidities:
 - Hyperglycemic crisis
 - Hyperosmolar hyperglycemic syndrome
 - Hypoglycemia

COMMUNITY PERSPECTIVE: FROM THE EYES OF THE PROVIDERS:

PHYSICIAN : DR. NICK FLORIO MD
AND
LPN: SARA ZARCONE

1. Do you think your patients understand what diabetes is and or what it does to their health/body?

- ❖ Physician: "Some patients do understand, and some don't. Patients sometimes feel that they are fine and do not feel the effects of their disease and so they don't really think much into it which is why they may not be compliant with their meds/diets/etc."
- ❖ LPN: "Half of them yes and half of them no. Older patients understand more, usually they are more elderly, active, and healthier. The younger ones (40s-50s) either care a lot or don't care at all."

2. Do you think your patients understand what the medications they are taking are meant for?

- ❖ Physician: "Lots of patients describe the medication color and or shape instead and that's how they keep up with it. Those that do understand it have better outcomes and better control."
- ❖ LPN: "Older patients know what they are for and know the names of the meds and why they need to take it. The younger patients (40s and 50s) do not know the name or what it is for. They know the symptoms that it causes them, and they know the physical characteristics of them."

3. Do you see any barriers that prevent your patients from taking effective care of their diabetes?

- ❖ Physician: "There is the problem of convenience, where there are patients who do not want to inject themselves or who feel that it will be uncomfortable to inject themselves. So, due to the fear, they just don't attempt it at all even if its importance is necessary."
- ❖ LPN: "Expensive medications have been voiced by the patients, mostly insurance issues."

4. What is the pattern that your patients have taken after they have found out about their diagnosis?

- ❖ Physician: "When patients find out about their diabetes, they tend to at first try to manage it, but some tend to then fall off their controlled management."
- ❖ LPN: "When patients finds out, it's usually in the prediabetes range and are told what to do. They do it for a month to watch, but later stop acting on it."

5. How would you say the anxiety/stress is surrounding patients' and their condition?

- ❖ Physician: "I began to see more anxiety and stress surrounding diabetes due to COVID since there is a higher risk factor for worse outcomes having the comorbidity associated with it."
- LPN: "For the older patients, they have more stress and are stricter with their intake. The younger patients are all about the medication."

INTERVENTION AND METHODOLOGY

Living with Type 2 Diabetes
(information taken from CDC)

<https://www.cdc.gov/diabetes/basics/diabetes.html>



So what is the cure?

- ◆ No cure BUT losing weight, eating healthy food, and being active can really help. Taking medicine as needed, getting diabetes self-management education and support, and keeping health care appointments can also reduce the impact of diabetes on your life.

How can I manage it?

- ◆ You may be able to manage your diabetes with healthy eating and being active, or your doctor may prescribe insulin, other injectable medications, or oral diabetes medicines to help manage your blood sugar and avoid complications. You'll still need to eat healthy and be active if you take insulin or other medicines. It's also important to keep your blood pressure and cholesterol close to the targets your doctor sets for you and get necessary screening tests.



- Fill half with non-starchy vegetables, such as salad, green beans, broccoli, cauliflower, cabbage, and carrots.
- Fill one quarter with a lean protein, such as chicken, turkey, beans, tofu, or eggs.
- Fill one quarter with carb foods. Foods that are higher in carbs include grains, starchy vegetables (such as potatoes and peas), rice, pasta, beans, fruit, and yogurt. A cup of milk also counts as a carb food.
- Count your carbs: ask your doctor the best way to do this
- Portion your food
- Then choose water or a low-calorie drink such as unsweetened iced tea to go with your meal.

What is Type 2 Diabetes:

Most of the food you eat is broken down into sugar (also called glucose) and released into your bloodstream. When your blood sugar goes up, it signals your pancreas to release insulin. Insulin acts like a key to let the blood sugar into your body's cells for use as energy.

If you have diabetes, your body either doesn't make enough insulin or can't use the insulin it makes as well as it should. When there isn't enough insulin or cells stop responding to insulin, too much blood sugar stays in your bloodstream. Over time, that can cause serious health problems, such as heart disease, vision loss, and kidney disease.

What do I do to manage my Diabetes?

- ◆ You'll need to check your blood sugar regularly. Ask your doctor how often you should check it and what your target blood sugar levels should be. Keeping your blood sugar levels as close to target as possible will help you prevent or delay diabetes-related complications!
- ◆ Regular physical activity, getting enough sleep, and relaxation exercises can help.
 - ◆ Develop a healthy eating and activity plan
- ◆ Recognize the signs of high or low blood sugar and what to do about it
- ◆ If needed, give yourself insulin by syringe, pen, or pen, or pump
- ◆ Monitor your feet, skin, and eyes to catch problems early

PORTIONING FOOD IS KEY

1. 3 ounces of meat, fish, or poultry
Palm of hand (no fingers)
2. 1 ounce of meat or cheese
Thumb (tip to base)
3. 1 cup or 1 medium fruit
Fist
4. 1–2 ounces of nuts or pretzels
Cupped hand
5. 1 tablespoon
Thumb tip (tip to 1st joint)
6. 1 teaspoon
Fingertip (tip to 1st joint)

- ◆ I created a handout with information taken from the CDC about what Type 2 DM is and the appropriate way to portion food for better blood sugar control. After reading the handout, the patient was instructed to take the survey.
- ◆ I was able to obtain surveys from 5 patients on the following: YES/NO questions.
 - ❖ Do you understand what Diabetes means more than you did before coming in today?
 - ❖ Do any of these make it harder for you to understand your condition?
 - Language barrier: I would understand it better in my native language
 - Do not know where to read about it
 - I get confused during my discussion about it during my visit
 - ❖ I do not want to know anything about it
 - ❖ Did you know what the right diet was to eat before today?
 - ❖ Would you find it helpful to speak with a nutritionist to help with managing your condition?
- ❖ Do you have barriers/hardships with finding and eating the right food?
 - ❖ Circle all that may apply to you:
 - Financial difficulties make it harder to buy healthier options
 - No grocery store nearby or the grocery store has very little healthy options
 - No time to cook due to work or other tasks
- ❖ Do you take your medications daily?
 - ❖ If NO, circle all that apply to you.
 - Cost
 - Forget
 - Do not understand why I need to take it or what it is for
 - I do not like pills/ needles etc.
 - Side effects of medications
- ❖ After today, do you see yourself sticking to your medication routine more?

SURVEY RESULTS/RESPONSE AND DATA

- ❖ 60% of the patients did not understand Diabetes more than they did before coming in for their visit.
 - ❖ 20% of patients circled that language barrier and not knowing where to read about it contributed to lack of understanding of their condition.
- ❖ 20% of patients said they did not know what the right diet was for correct diabetic care before reading the handout.
- ❖ 60% of patients said they do not have barriers.
- ❖ 20% said for a barrier : they have no time to cook due to work or other tasks.
- ❖ 20% said they would find it helpful to speak with a nutritionist.
- ❖ 100% said they do take their medications daily.
- ❖ 100% of patients said they see themselves sticking to their medication routine more after their visit today.

EVALUATION/EFFECTIVENESS AND LIMITATIONS

- Evaluation: (AFA topics addressed by the intervention includes: interprofessional, cultural competency, and medical practice transformation)
 - The handout and survey served as a great tool to examine the knowledge patients have about their condition and the possible barriers that may keep them from properly aiding their condition such as language barriers and lack of knowledge about resources.
 - Because the intervention was given before the visit, it served as a great source to assess their struggles and how it can be properly addressed during and after the visit. It served as a great addition to instigating conversation with the physician.
 - The handout and survey served as a patient educational tool and contributed to physician/provider education about patient understandings of their condition which will better patient-centered care.
- Limitations:
 - Small sample size (5 patients)
 - Patients were given the survey, but some accidentally took it home with them instead of leaving it in the exam room.
 - Some of the providers in the facility did not remember to give handouts/surveys to their patients before their patient visits.
 - The survey was given to the population who live in Ridgefield which is not representative of most of the population in Connecticut both ethnically and by socio economic status.

FUTURE INTERVENTIONS/ PROJECTS

- ❖ This handout intervention and survey tool could be utilized as an educational opportunity for the patient and as a learning opportunity for providers to understand barriers their patients have to their care.
- ❖ This intervention may also be utilized to instigate conversations about resources present which can aid in patient's knowledge about Type 2 DM.
 - This will lead to a better understanding of medications and the purpose of taking them. With more knowledge comes a decrease in fear, especially in terms of false perceptions of side effects of specific medications.
 - More knowledge of Type 2 DM pathophysiology may lead to better diet choices by the patient.
- ❖ This intervention with its knowledge from responses may bring about even more future intervention/projects such as group Diabetic meetings. Patients will relate to one another by sharing their successes in diet, medication routines, and exercise habits.
- ❖ Another intervention may include increasing the number of follow-up visits by making them every 2-3 months . This may aid in better outcomes when patients see their progression.

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INTERVIEW CONSENT

- **Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.**