

A Multicomponent Model to Manage Type 2 Diabetes in Hispanic Farmworkers

Introduction:

Type 2 diabetes is a public health issue disproportionately impacting the Hispanic population.¹ The economic cost from 2012 to 2017 has increased by 26%, totaling 327 billion dollars in direct medical costs and decreased productivity due to diabetes in the U.S.¹ Hispanics are the largest minority group in the U.S., making up 17.6% of the population and by 2050 it is expected to reach to 29% of the U.S. population.¹ It is twice as common for a Hispanic American to get diabetes than their white adult counterpart.² Research has shown that level of education and access to care impact the likelihood of getting diabetes.¹ According to Healthy People 2030, only 51% of adults 18 and older with diabetes receive formal diabetes self-management education and support.³ There is minimal data specifically on Hispanic farmworkers with diabetes due to lack of access to medical care and undiagnosed farmworkers. However, there is research that demonstrates social determinants of health are associated with poor health outcomes related to diabetes, such as lower education level, poverty, and unstable housing.⁴ Therefore, it is important to have a multicomponent program model when managing diabetes in the Hispanic farmworkers population that includes diabetes education, quality care, and increased access to care.

Type 2 Diabetes:

Type 2 diabetes occurs when the body develops “insulin resistance” and can’t use insulin efficiently or the pancreas loses the ability to produce enough insulin. When our body breaks down food, our blood sugar level rises. The body uses this sugar (glucose) for energy by using a hormone called insulin to help the body’s cells absorb these sugars. Insulin is produced by the pancreas. If our body does not produce enough insulin, or does not use the insulin efficiently,

then the sugar levels in our body rise. Diabetes is a very prevalent disease in the U.S., and by the end of this year 1.5 million people will be newly diagnosed with diabetes.⁵ Type 2 diabetes is the most common form of diabetes.⁶ Although historically type 2 diabetes has been primarily diagnosed in adults, adolescents and young adults are developing the disease at an alarming rate.⁶ If type 2 diabetes is not managed properly overtime, high blood glucose can damage the eyes, kidneys, nerves, and heart. Type 2 diabetes can be delayed or controlled with diet and exercise, however many people can go undiagnosed for years during the early stages of the disease.⁶ It is important to educate people on the risk factors for diabetes but also providing healthy living tips to help manage their diabetes.

Hispanic farmworkers in America:

Hispanic farmworkers are at even higher risk for diabetes due to environmental, social and cultural risk factors.⁴ National data shows that Hispanics 20 years and over have a 78% combined prevalence of overweight and obesity.⁷ The Hispanic population is also most likely to develop T2D at a younger age, with higher rates of complications and mortality.⁷ This prevalence is further increased when combined by lifestyle, socioeconomic and cultural factors. In California alone, it is estimated that there are over 829,000 people employed in agriculture labor.⁷ Studies have found that the prevalence of obesity is higher among the Hispanic population in California compared to other states. This data aligns with the “farmworker paradox,” this paradox is the belief that farmworkers are expected to have lower rates of overweight and obesity due to the long days of physical labor but in reality it is the complete opposite .⁷ This paradox demonstrates the importance of the issues low-income Hispanic populations face. Hispanic farmworkers in low-wage industries face disadvantages in prevention and management of their health problems. These disadvantages include limited access and use of

health services, access to healthy foods and limited knowledge makes managing their chronic disease even more difficult.

Education on T2D:

Agriculture workers are more vulnerable to develop type 2 diabetes due to various factors- one major factor includes their education level and their understanding of the disease.⁴ Properly educating Hispanic farmworkers will change cultural perceptions about diabetes, empower them to take control of their own health and prevent long term complications. In one study done in North Dakota with Hispanic migrant farm workers, participants demonstrated the normalization of diabetes for these families due to having multiple family members with diabetes.² However, many of the participants admitted they did not understand diabetes was a chronic disease.² Some participants also did not know the cause of their diabetes, and others had the misconception that a life stressor “triggered” their diabetes.² Other participants in the study believed that they could have done nothing to prevent the disease due to their belief that diabetes is only hereditary.² By understanding that diabetes is a chronic, preventable disease, farmworkers would be able to understand the seriousness of their disease, and that their lifestyle choices can improve or worsen their disease. Diabetes can be managed with healthy eating and exercise, but some may need medication, including insulin, to properly manage their disease.⁶ Explaining this to farmworkers can empower them to do something about their diabetes, and may even prevent it in some. Educating Hispanic farmworkers as to why managing diabetes is important is also essential to help prevent long term complications of diabetes. This is imperative, because the Hispanic population has shown to have higher rates of long-term diabetes complications compared to their white counterpart.² These complications include cardiovascular disease, chronic kidney disease, neuropathy, foot health, oral health, vision loss and many more.⁸ Although educating Hispanic

farmworkers is an essential component of helping them understand and manage their diabetes, providing quality care that meets their healthcare needs is just as vital.

Quality Care:

Addressing the health care needs of a diabetic Hispanic farmworkers is multifactorial; it includes consideration of language barriers, educational levels, cultural beliefs, and socioeconomic instability. There is little data on multifactorial models due to the lack of services offered to this population. However, studies that have incorporated this multifactorial model have seen a positive impact in the health of Hispanic farmworkers. This suggests that providing quality, multifactorial care to Hispanic farmworkers, can reduce the elevated mortality rate, as well as the high medical costs associated with diabetes seen in this population.⁹ Quality care should include culturally sensitive health care services, effective patient self-managements, proper preventative diabetes screenings and education provided in lay terms in their preferred language. “Promotoras” have also been used in conjunction to support farmworkers. “Promotoras” are community health workers that help facilitate culturally relevant and social support within the community.¹⁰ The community health workers encouraged social support by facilitating group sessions that taught farmworkers to set concrete and achievable self-management goals. The Community Preventative Service Task Force (CPSTF) did a systemic review on 44 studies of outcomes with interventions engaging community health workers to help manage diabetes.¹¹ The data showed that implementing a health worker from within the community can help positively effect self-management behaviors and improve clinical outcomes in the farmworker communities. Community health workers and group sessions not only created a place for emotional and network of support, but also helped increase comfort in farmworkers talking with their healthcare providers about diabetes. Providing quality care for Hispanic

farmworkers means addressing all aspects of their healthcare needs. Having a multimodal approach to care will help reduce stress, improve health outcomes, and help build patient trust within the healthcare system. In order to enhance health professional's quality care to these communities, they need to be knowledgeable on related complications and cultural aspects of diabetes. While quality care is important, access to care is also critical for treating patients. If patients are unable to attend appointments, then they cannot get the high-quality care they need.

Access to care & management:

Hispanic farmworkers have a low adherence to diabetes management due to multiple socioeconomic barriers that prevent them from proper access to care.¹² These barriers include long working hours, harsh living conditions, lack of basic housing, isolation, and lack of transportation.¹² These barriers limit access to following up at doctor visits, obtaining their medications, and availability of healthy food sources. Socioeconomic factors have been found to be the main determinants for low antidiabetic adherence.¹³ Many of these farmworkers live and work far from the main town or city where they can see doctors, pick up medications or buy fresh groceries. Their long work-day makes it difficult for them to attend regular clinic or pharmacy hours. Many farmworkers also do not have a driver's license or a car, making transportation difficult and often means they are reliant on others for their transportation needs.¹¹ Their living conditions also make it difficult for them to store or make fresh healthy meals. Although educating farmworkers and providing quality care for them is important, so is increasing access to care and resources to help them become adherent to their diabetes management. Cluster clinics on site have been shown to be the most beneficial, because that eliminates the need for farmworkers to get to clinic, leave work and saves them time.⁹ Cluster clinics are mini-clinics that are physically arranged at a single site where patients can circulate

around the site to receive multidisciplinary care (screening, monitoring, examining and referring).⁹ Diabetic clinics should include full access to all yearly diabetic screenings, such as vision, dental, and foot exams to make it easier for patients to have well-rounded care in one location. By having all services available in one location, it helps with continuity of care, and patients would feel more inclined to go to their appointments by being in a clinic familiar to them. Social services should also be incorporated to provide assistance in applying for food stamps, providing information on food pantries, and working with vendors to provide healthier meals.¹² A study done in the US-Mexico border showed improved health outcomes when social services taught farmworkers about patient advocacy to help patients set up doctor appointments, help fill out paperwork for services, and assist in accessing health resources such as glucose strips and medications.¹⁰ Many Hispanic farmworkers are unaware of the many resources available to them, while others may not know how to fill out documentation for these services.¹⁰ That is why it is essential for Hispanic farmworkers to be made aware of the various sources that are available to them, as well as connecting them with social workers that can help them manage the different barriers they come across in the healthcare system. As healthcare workers, it is our duty to provide information of these source to Hispanic farmworkers to help them manage their diabetes.

Intervention:

In 2010, the University of California Davis conducted a 10-week obesity prevention pilot study among Spanish-speaking farmworkers.⁷ The majority of the participants in this study self-identified as Mexican and Spanish as their primary language. The study results were significant for weight reduction, improvement in knowledge of healthy eating, increased physical activity and changes in their dietary lifestyles. Researchers focused on utilizing an on-site and hands-on

approach, another key aspect of their intervention success was a result of researchers providing farmworker's care in their native language. These tactics allowed researchers to build trust and rapport within the community. Furthermore, a study in the East Coast with a population of Spanish speaking farmworkers showed that diabetes and hypertension are the most common health concerns within this group.¹⁴ The study supported that language was one of the most common barriers to their health care. It is important to note that diabetes is a complex disease and there is not one simple approach to managing it, especially in the Hispanic farmworker population, where socioeconomic barriers are common and numerous. This means that the approach to helping farmworkers manage their diabetes should be a multicomponent approach. Having a culturally appropriate presentation in Spanish that explains diabetes in lay terms and provides information on the various free resources available to help them manage diabetes is important. Without proper patient-provider communication complex medical topics such as diabetes will remain undertreated and underdiagnosed among this population. Hence, this presentation will include basic information on type 2 diabetes such as that discussed in paragraph two. The presentation will include local resources that the Hispanic farm working community can access. Aside from the PowerPoint presentation, I will also be providing a pamphlet in Spanish that will include dietary and exercise tips and free resources they can access. To create this pamphlet, I will be utilizing websites such as the CDC, America Diabetes Association, and the American Heart Association as my main resources. Overall, the goal of this presentation is to engage participants, provide an environment where farmworkers feel comfortable asking questions, and empower patients with the knowledge to adopt positive lifestyle changes to combat their diabetes diagnosis and improve their overall health.

Conclusion:

Hispanic farmworkers' low-income status, migrant status, minimal education, and lack of health care access makes this population more vulnerable to uncontrolled diabetes and complications of T2D.⁴ For this reason, a simple 20–40-minute clinic visit with a diagnosis of diabetes is not enough to help manage diabetes for Hispanic farmworkers. Thus, a multicomponent model that includes basic education of the disease, quality care and access to care is the best for the Hispanic farmworker community to manage diabetes. The multicomponent model addresses the multiple barriers that this community experiences when it comes to managing diabetes. Overall, studies showed an improvement in glycemic control, fewer visits to the ER or hospitalizations, and lifestyle changes when multiple barriers to health care were addressed. Providing proper resources in various domains such as peer/farmworker support, community involvement, environmental and health care will help Hispanic farmworkers have better outcome management of their diabetes. Helping Hispanic farmworkers manage their diabetes will not only benefit them but also help improve the healthcare cost for diabetes management in the U.S.

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