Detecting Diabetic Blindness in Low-Income Mexican Adults

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Latoya Simmons] Welcome to this edition of *PCD* Sound Bites. I'm your host, Latoya Simmons. The Mexican government recently declared Mexico to be in a state of emergency due to the high rate of diabetes. Long term diabetes and inadequate control of the disease can often lead to complications, like diabetic blindness. With no national screening program in Mexico to identify diabetic blindness, it often goes undetected. Today, I'm speaking with one of the winners of *PCD*'s 2017 Student Research Paper Contest, Kenny Mendoza-Herrera, a former graduate student at the National Institute of Public Health of Mexico and a current researcher at the Center for Nutrition and Health Research in Mexico. His winning research focuses on the development of a screening tool to detect diabetic blindness in low income Mexican adults. We'll discuss the results of his study and what impact the research has on the prevention of diabetic blindness and public health, particularly for Mexican adults. Thank you for joining me today, Kenny.

[Kenny Mendoza-Herrera] Thank you for having me.

[Latoya Simmons] What was the purpose of your paper and what did you hope to learn?

[Kenny Mendoza-Herrera] Yes, our main goal was to develop a practical and easy-to-apply tool to detect diabetic blindness in Mexican adults from low-income communities. This tool can be applied by non-specialist health personnel only through the evaluation of simple characteristics related to diabetes, such as glucose levels, blood pressure, and two simple questions about the duration of diabetes and physical activity for the diabetes control. I also want to make a special mention to my main statistic advisor who was Amado David Quezada. He's an excellent professor who was leading me in learning new complex methods used in our paper. He was very patient at teaching me the necessary knowledge for all the analyses. He was a key piece in the development of this paper and an excellent mentor.

[Latoya Simmons] Your study involved developing and utilizing a screening tool to detect and prevent diabetic blindness. Why was this important and how was it used in your study?

[Kenny Mendoza-Herrera] As you told us, Mexico is currently experiencing an epidemiological emergency due to diabetes. Around 15 percent of Mexican adults have diabetes and almost three quarters of them have an uncontrolled disease. Additionally, according to the national evidence, low-income sectors of Mexico have the lowest rate of accomplishment in ocular recommendations for populations with type 2 diabetes. For this, a considerable amount of this population could be at high risk of developing ocular complications and therefore diabetic blindness. If a practical strategy as the one we developed were applied in this population, we could timely detect, diagnose, and treat this ocular disease.

[Latoya Simmons] Your study involved collecting biochemical, clinical, anthropometric, and sociodemographic information from adults diagnosed with diabetes. How was this done and would you have done anything differently?

[Kenny Mendoza-Herrera] Yes, all ocular and other assessments were carried out in our mobile unit, an adapted unit to reach low-income communities. The logistic process was possible due to the support of generous organizations as the World Diabetes Foundation and the Mexican Council of Science and Technology. Also, this was possible due to the excellent leading of Dr. Simón Barquera, who is the Director of the Center for Nutrition and Health Research, and Andrea Pedroza, Dr. Jans Fromow and Cesar Hernadez who were the developers and coordinators in the underlying study, and of course my, my mentors. Although our tool was developed using simple economic variables, we would have liked to have the assessment of glycated hemoglobin, which is a variable to evaluate the glucose control in the previous three months of a person. This could have improved the precision of our tool; however, even without this evaluation, our tool showed an adequate performance to identify adults at high risk of diabetic blindness.

[Latoya Simmons] What would a screening program like the one described in your study mean for Mexico?

[Kenny Mendoza-Herrera] This could mean a great opportunity to improve the accomplishment of the ophthalmological recommendation in the population with diabetes. A timely diagnosis and treatment of the disease, which could possibly, in the long term, prevent many cases of diabetic blindness on Mexican adults. However, our team has a challenge that is to carry out future pilot studies to investigate the feasibility, cost, and effectiveness of our tool in the real practice.

[Latoya Simmons] What implications does your study have for public health in Mexico and globally?

[Kenny Mendoza-Herrera] The diabetic blindness causes a high social and monetary costs to the Mexican population and to the health system. At the same time, they have a big negative impact in the life quality of the people and their productivity. For the health system, the high expenditure due to the disease reduces their system's performance. In the long term, the implementation of strategies like our tool, could help improve the life quality of the population with diabetes, and therefore create a social and health global benefit that could help reduce these kind of costs.

[Latoya Simmons] Thank you, Kenny. You can read his study online at cdc.gov/pcd.

The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

[Announcer] For the most accurate health information, visit cdc.gov or call 1-800-CDC-INFO.