

Can better glucose monitoring improve workforce participation for people with diabetes?

Over 38 million people in the US have diabetes, a chronic illness that can have serious health and economic consequences. **Dr Belinda Román**, an economist at **St. Mary's University** in Texas, is investigating how improved access to glucose monitoring devices can help people with diabetes manage their condition and remain in the workforce. Focusing on the Hispanic population of South Texas, her research aims to break the cycle of poor health limiting work opportunities which in turn restricts access to healthcare.



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Field of research

Economics

Research project

Investigating the relationship between glucose monitoring and workforce participation in people living with diabetes

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www.romaneconomics.com

Living with a chronic illness not only impacts someone's health but might also limit their ability to work. In some countries, this might then impact their ability to access healthcare. If left unmanaged, chronic conditions, such as diabetes, can disrupt lives and livelihoods, meaning chronic illnesses present economic and social challenges as well as health issues.

Dr Belinda Román is an economist at St. Mary's University. She is investigating whether access to glucose monitoring devices can empower people with diabetes to better manage their health, stay in work and improve their quality of life. She hopes that the results of her research will lead to practical solutions that will break the cycle of poor health and economic instability.

Talk like an ... economist

Blood glucose — the sugar found in blood, which serves as the body's primary energy source

Chronic illness — a long-term health condition, often requiring regular, on-going care

Diabetes — a chronic illness in which the body cannot control blood glucose levels correctly. Over 90% of people with diabetes have type 2 diabetes

Employer-sponsored health insurance — healthcare that is paid for by an employer

Randomised controlled trial — a study in which participants are randomly assigned to receive either the intervention being investigated (the 'experimental' group) or the usual standard of care (the 'control' group). By comparing the outcomes of the two groups, researchers can establish whether the intervention is effective

Underserved community — a community with limited access to healthcare, education and other essential services

Workforce participation — the involvement of individuals in the job market

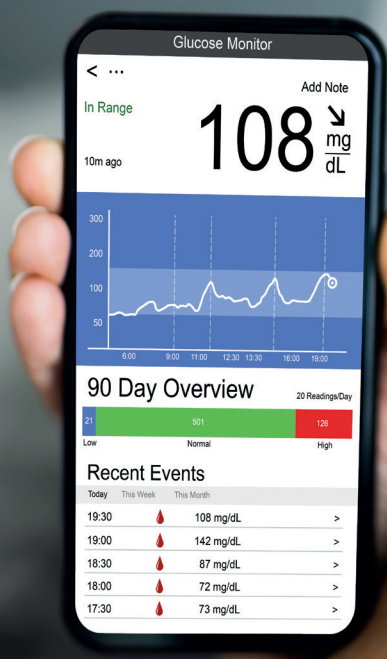
The cycle of poor health and economic instability

In the US, most people rely on employer-sponsored health insurance. As a result, individuals with a chronic illness that prevents them from working will lose their health insurance and so will be unable to access healthcare. If they are unable to receive appropriate treatment for their illness, then their

condition might worsen, preventing them from returning to work. Even those who remain employed often face challenges accessing the necessary care to manage their condition, especially in underserved communities where not all workers have health insurance.

What is diabetes?

Diabetes is a chronic illness that



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causes someone's blood glucose (sugar) levels to become too high. People who are overweight, have an unhealthy diet or have high blood pressure are more likely to develop type 2 diabetes, the most common form of the condition. Diabetes can be managed by monitoring blood glucose levels, eating healthily and exercising regularly. However, if left unmanaged, diabetes can cause blindness, heart and kidney problems, and the need for amputations.

Why is glucose monitoring essential for managing diabetes?

For people with diabetes, keeping their blood glucose levels within a safe range is essential for staying healthy and avoiding serious complications. An individual can monitor their blood glucose levels by pricking their finger to get a small blood sample or with a continuous glucose monitor that is inserted under the skin.

"Blood glucose levels vary daily, but there are ranges that are considered safe," explains Belinda. "However, if an individual does not know what their levels are, then they do not know what steps to take to keep their levels in range and their diabetes in check, which is why regular monitoring is important." But for people without access to monitoring equipment, often due to limited access to healthcare, managing diabetes is incredibly difficult.

Diabetes in South Texas

"My research focuses on a very neglected and misunderstood segment of society – the underserved and marginalised

Hispanic population of South Texas," says Belinda. This region and demographic have the highest rates of diabetes in the US and the highest rates of diabetic amputations, particularly in men aged forty to fifty. "This is economically significant because these individuals should be at the peak of their working life," explains Belinda.

The reason for the high incidence of diabetes in Hispanics in South Texas is complex. "Genetics is a key factor, as Hispanics have a genetic predisposition to develop the condition," explains Belinda. But this is not the whole story. "We are beginning to understand that economic factors, such as economic development, contribute to the growing rates of diabetes." The type of work people do also has an impact, as many jobs in the region are sedentary and involve long hours of sitting at a desk with limited physical activity. Additionally, South Texas has high rates of obesity. Unhealthy eating habits, often linked to limited access to affordable, nutritious food, further exacerbate the problem. Also, many Hispanic people in the region are immigrants who do not have sufficient health insurance.

How will Belinda conduct her research?

To investigate the link between glucose monitoring and workforce participation, Belinda will conduct a randomised controlled trial. She is working with two community healthcare providers which serve areas in South Texas where poverty and limited access to healthcare are common.

Each healthcare provider will recruit 300 people with diabetes to take part in the trial for six months. Half of the participants will be given a free blood glucose monitoring device (either a finger prick monitor or a continuous glucose monitor) which will send their glucose levels to Belinda's research team. If a participant's glucose levels fall outside of their safe range, then they will receive text messages to prompt them to adopt healthy behaviours, such as avoiding sugary foods and drinks. The other half of the participants in the trial will receive their usual care and will act as the 'control' group. Throughout the six months of the trial, Belinda's research team will also ask all participants about their workforce participation. This approach will allow Belinda to explore whether effectively managing diabetes can impact people's health and ability to work.

"I'm hoping we can find ways to help people with diabetes keep track of their glucose levels," says Belinda. "Knowledge is power, so self-knowledge should empower individuals to manage their personal well-being." By providing glucose monitoring devices to people with diabetes from underserved communities, Belinda hopes they will be better able to manage their condition. And hopefully, with better health, these people can participate more in the workforce. From this, Belinda hopes her research will lead to improved health and economic outcomes for individuals and wider Hispanic communities in South Texas.

About *economics*

Many people assume that economics is ‘merely the study of money’. But in reality, the field is vast and covers a huge range of topics. “Economists study just about everything,” says Belinda. “Money is what facilitates our economy, but economics is about understanding how humans meet their needs and about improving quality of life. The task is to explain how economics can help solve problems.”

Economists study everything from the production of goods and services to how people make decisions. They investigate the role of governments in managing economies, how resources are allocated, and how global trade affects local communities. Economists also study issues related to healthcare, education, poverty and inequality, in the hope of making systems fairer and more efficient.

As a discipline, economics is incredibly diverse. It blends mathematical models with social science, drawing on data to explain and predict patterns in human behaviour. This makes it a useful tool for solving real-world problems, whether in business, government or healthcare. It helps policymakers design better policies, businesses make informed decisions, and individuals understand the impact of their choices.

While studying economics can lead to many very rewarding careers, it also comes with its own unique set of challenges. “I believe the next generation of economists will be challenged by the rapid changes technology brings to everything,” says Belinda. “Humans do not change as quickly, so the balance and personal well-being of people will be key.” But the constant evolution of technology and society is also what makes the field so exciting and presents economists with new problems to solve, making the work dynamic and relevant.

Pathway from school to *economics*

To pursue a career in economics, you should focus on studying economics itself, but it is also important to have a broad educational foundation. “A well-rounded economist will have a wide range of knowledge and ideas to draw from,” says Belinda. Key subjects to consider include history, philosophy, mathematics, sociology and business.

Many universities offer undergraduate and postgraduate degrees in economics. Learn more about studying economics at St. Mary’s University: www.stmarytx.edu/academics/programs/economics.

Do not worry if you are not yet sure about committing to a degree in economics – according to Belinda, many students do not specialise in economics until later in their undergraduate studies. As economics can be applied to so many areas, including health, policy, culture, sports and entertainment, exploring these fields can help you decide which path within economics excites you the most.

Look for economics-related internships or summer placements to gain experience in business, government or research organisations. St. Mary’s University, for example, offers outreach programmes where high school students can visit the campus and get a feel for university life.



Meet Belinda

As a teenager, I was very involved with my high school music programme. But I was also able to experience jobs in healthcare. My father was a paediatrician, and he got me a summer job at a clinic on the border between El Paso (Texas) and Ciudad Juárez (Mexico), where I worked in the labour and delivery ward. This exposed me to healthcare challenges early on.

While studying to enter medical school, I took an economics class at a local university. The professor had just returned from Washington D.C. and shared his experiences of being on a committee that helped to develop policy. It was about figuring out how to make the economy work for everyone and I thought, “I would like to do that!” I changed my degree from pre-med to economics, and the rest is history!

Before becoming an academic, I worked in Latin America for a project funded by the US Agency for International Development (US-AID). I had the best time, and it really showed me how and where dollars actually make a difference. I have carried that experience with me to every job I have held since.

I also worked in the US House of Representatives in Washington D.C. This work was very varied – I started on the lowest rung of the office and worked my way up. I saw first-hand how voter engagement can influence our elected officials, and I saw how the policy machine works. This helped me understand the internal workings of our national government.

I spent time working for the American Chamber of Commerce in the UK. This was a wonderful experience because I got an inside look at how international trade and business work. Chambers are membership organisations, so I learnt a lot about fundraising and business deals at the highest levels.

I set up my own economics consultancy, Román Economics, and through this I have done economic impact studies for local governments and non-profit organisations. I am often asked to undertake specific research projects that are not related to my academic work, which helps keep my skills up-to-date and shows my students what economists really do.

When I’m not working, I enjoy experimenting in the kitchen, exercising, gardening and reading.

Explore careers in economics

Economics is a versatile field with a broad range of career opportunities. “Economics is a very useful and flexible degree and is useful in just about any job,” says Belinda. “A degree in economics signals commitment, an ability to finish a complex process and critical thinking skills, which can be applied in most jobs.”

Economics organisations, such as the American Economic Association (www.aeaweb.org/resources/students) and the International Economic Association (www.iea-world.org/activities/featured-economists), provide educational resources, careers advice, networking opportunities and interviews with economists.

Prospects provides information about the careers you could pursue with a degree in economics, including what different roles involve and the salaries you can expect: www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/economics