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## Promoting Healthy Lifestyle Changes to Help Prevent and Manage Diabetes

Diabetes is a serious worldwide public health challenge that has been growing in prevalence. In the US, the burden of type 2 diabetes, including prevalence and risk of complications, is greater for minority groups, especially Latinos and African Americans [1]. Innovative interventions are needed to help reduce the risk and burden of diabetes, especially in higher risk groups. Internet-based 3-dimensional (3-D) virtual worlds offer an opportunity to reach large and diverse populations for the provision of education and support in making healthy lifestyle changes that lower risk of diabetes for individuals at risk or help manage diabetes in those with this condition.



Our recent study focused on developing, implementing, and evaluating a virtual world program to support self-management in low-income African Americans with diabetes.

This virtual environment, called "Diabetes Island", allows people (as avatars) to explore a 3-D island with many educational and fun activities. It was designed to help educate people about diabetes self-care and making healthy lifestyle changes. This virtual space includes buildings (such as home, restaurant, grocery store), educational structures (such as auditorium, learning center), and recreational areas (such as dance club, sports fields, beach). Using avatars, people can access a variety of educational activities and resources 24/7. Interactive educational activities are available, such as "choosing a healthy lunch on the go" focused on making healthier choices through reading menu labels at a fast food restaurant. In addition, scheduled educational sessions are offered by health professionals (as avatars; see photo) focused on a variety of diabetes care and lifestyle topics presented formally in the auditorium (pictured) or informally, such as a dietitian-facilitated discussion of healthy cooking in the home.

### What we have learned to date:

1. ***It takes a team to conduct intervention research!***  
This project included a large multidisciplinary team of researchers, multiple research partners, community advisory committee members, programmers, research staff, and students at all levels.
2. ***It is equally as important to bring the community to the research, as it is to bring research to the community!*** Including members within the community of focus is critical to the development of feasible and effective interventions. Whenever possible, we work to

include members of the community and research sites throughout the research process.

3. Our ***study's quantitative findings show promise*** in improving diabetes distress, self-care barriers, behaviors, and reducing weight.
4. Our ***qualitative findings were also positive***. Participants shared stories about how this approach helped them make healthy behavior changes and lose weight. In addition to impacting self-care, they also described that the virtual world allowed them to socialize or enjoy activities through their avatars (e.g., dancing) that were difficult in their real world. One participant even stated: "The avatar is a better me."

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### Where do we go from here?

Although our work shows promise for educating and supporting people with diabetes, further development and research is needed. Our goal is to continue to develop and tailor this virtual world approach for other groups with and at risk of diabetes. Our future research goal is to examine the impact of this virtual world approach within large and diverse populations.

You can learn more about this research by contacting Dr. Ruggiero at [ruggier@uic.edu](mailto:ruggier@uic.edu) and you can read about the full study at: <http://games.jmir.org/2014/2/e10/>

To learn more about diabetes, go to the American Diabetes Association website:

<http://www.diabetes.org/diabetes-basics/> or to learn about diabetes rates: [1] CDC Diabetes Report Card 2012 <http://www.cdc.gov/diabetes/pubs/pdf/diabetesreportcard.pdf>

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### About Our Researcher

Dr. Ruggiero is a Professor of Community Health Sciences and a Research Fellow at the Institute for Health Research and Policy in the School of Public Health. She is a clinical psychologist and a behavioral scientist. Her research focuses on identifying innovative approaches to promote healthier lifestyles to reduce diabetes risk and to improve and support self-management in those with diabetes. She also works to identify effective strategies to reach underserved groups to offer effective lifestyle change interventions.

She received a Bachelor Degree in Psychology from the Pennsylvania State University and Master of Arts and Doctoral degrees in clinical psychology from Louisiana State University. She completed a clinical internship and a post-doctoral fellowship in Behavioral Medicine at the Brown University Program in Medicine.

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