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Implementation of an Evidence-Based Diabetic Screening Tool in Rural Belizean Communities

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Background

Type II Diabetes Mellitus (TIIDM) is a growing epidemic in Belize. The prevalence is increasing yearly, responsible for considerable health complications and deaths (International Diabetes Federation, 2023). Rates are much higher in Belize than in any other developing Central American country, and many rural citizens are undiagnosed and untreated (Pan American Health Organization [PAHO], 2009). Access to healthcare is complex, and travel is often required in rural areas. Primary-care visits in Belize are significantly less than in surrounding North and Central American countries (PAHO, 2009). As a result, chronic illnesses such as TIIDM often go undiagnosed among children, adolescents, and adults—leaving TIIDM a leading cause of death in Belize (Magkano et al., 2020).

Purpose

To implement a diabetic screening tool in rural Belizean communities with the aims of (a) increasing TIIDM risk screening and (b) increasing blood glucose (BG) testing via mobile community clinics.

Screening Forms

Using the Johns Hopkins Nursing Evidence-Based Practice Model, a literature review and critical appraisal were performed to evaluate best practices for rural, community-based TIIDM screening. As a result, the American Diabetes Association screening form, a validated risk factor screening form, was selected, modified for cultural applicability, and implemented in rural Belize communities.

Implementation

During a visit to Belize in 2022, pre-implementation data was gathered from the communities and clinics. In 2023, the forms were implemented in the communities. Nursing school student volunteers were trained on how to administer the form and did so in the rural communities of San Ignacio in March. Adults who scored a 5+ and children who scored a 2+ were considered high risk and invited to the mobile clinic the next day for a free blood glucose (BG) check.

Data Analysis

- In 2022, before screening was implemented, only 10.9% of clinic patients had a BG check completed in the clinic.
- In 2023, clinic BG checks tripled to 29.1% after implementing community-based risk screening.
- During implementation, 127 screening forms were completed. 25% of the population screened HIGH RISK.
- Of the population that screened HIGH RISK, 67% followed up at the mobile clinic the following day for a BG check and diabetes education with a provider.

Conclusion

The use of a community-based TIIDM screening tool to identify high-risk individuals increased the number of BG checks performed in a clinical setting in rural Belize.

Link to Practice

Community-based risk screening was an effective, low-cost method to improve BG testing and provide education about TIIDM risk factors. This may benefit other rural communities with high disease burdens and limited access to care.

Impact

Screening for TIIDM has the potential to ultimately lower the incidence of complications of TIIDM. This can have an immediate impact on individuals.

This can reduce the burden on the workforce, economy, health care system, and country as a whole. This can have a long-term impact on the community.