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REVIEW

Transculturalizing Diabetes Prevention in Latin America

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Abstract

BACKGROUND Type 2 diabetes (T2D) imposes a heavy burden in developing countries, requiring effective primary prevention policies. Randomized clinical trials have identified successful strategies in T2D prevention. However, translating these results to real-life scenarios and adapting to ethnocultural differences is a major challenge. Transculturalization allows incorporating cultural factors to diabetes prevention strategies to optimize implementation of clinical trials results. The purpose of this paper is to review the transcultural adaptations developed for T2D prevention in Latin America (LA).

METHODS A comprehensive literature review spanning 1960-2016 was performed, using "Diabetes," "Latin America," "Prevention," "Screening," and "Tools" as key words.

RESULTS Two major tasks are underway in LA: adaptation of screening tools for high-risk individuals, and implementation of diabetes prevention programs. The Finnish Diabetes Risk Score (FINDRISC) is the most widely used screening tool to detect new cases of T2D and people with prediabetes, and it has been adapted (LA-FINDRISC) to include the waist circumference cutoff values appropriate for LA population (≥94 cm for men and ≥90 cm for women). The validation of the LA-FINDRISC performance depends on the local characteristics. A LA-FINDRISC score >10 may be the best cutoff to identify individuals with impaired glucose regulation in population-based studies, but a higher score (>12-14) might be more appropriate in a clinical setting. A shorter version of the FINDRISC using only the 4 variables with highest impact has been developed and validated in Colombia (ColDRISC). The translation of the Diabetes Prevention Program study in a Latino population in Venezuela found a significant improvement in cardiometabolic risk factors. An adaptation of the Diabetes Prevention Study in the DEMOJUAN study in Barranquilla, Colombia, reduced 2-hour postload glucose.

CONCLUSION Successful transculturalization strategies have been implemented in screening tools and prevention programs in LA.

KEY WORDS FINDRISC, Latin America, prevention, type 2 diabetes, validation.

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INTRODUCTION

The Global Dimension of Diabetes Prevention. Type 2 diabetes (T2D) and its complications impose a heavy burden on public health systems worldwide.[1,2] In 2013, T2D represented the 12th leading cause of disability-adjusted life years[3] and the 17th leading cause of death globally.[4] The worldwide prevalence of diabetes in the adult population was 415 million (8.8%) in 2015 and predicted to rise to 642 million (10.4%) by 2040.[5] In Latin America (LA), the International Diabetes Federation estimated that 9.4% adults had diabetes and 7.9% had impaired fasting blood glucose (IFG) in 2015, and these numbers are expected to rise to 11.9% and 9.4%, respectively, in 2040.[5] In the South and Central America region, 24% of adults with diabetes are undiagnosed, extending to 50% in some countries.[6]

The main drivers of T2D prevention appear to be weight loss and increased physical activity,[7] and therefore these interventions must be included in effective prevention strategies to reduce the burden of T2D.[2] Prospective studies have found that T2D can be prevented by early intervention in people with IFG and/or impaired glucose tolerance (IGT).[8-12] However, translating results from controlled clinical trials to real-life scenarios represents a major challenge, particularly when adapting ethnocultural differences.[13] *Transculturalization* describes the process of adapting concepts from one culture to another, without changing either culture.[14] In other words, transculturalization in diabetes prevention involves the incorporation of cultural factors to optimize implementation of a scientific template for diabetes prevention.[15]

A recent systematic literature review pointed out that screening for T2D and IGT, with appropriate intervention for those with IGT, seems to be cost effective.[16] However, the cost effectiveness of a policy of screening for T2D alone, without offering an intervention to those with IGT, is still unclear. A number of risk-scoring models have been developed[17-19] for screening, even though some of them are limited by the need of laboratory tests. Recently, a study validating existing non–laboratory-based models and assessing the variability in predictive performance in European populations found that existing diabetes prediction models can be used to identify individuals at high risk of T2D in the general population.[20] The Finnish Diabetes Risk Score (FINDRISC) is the most widely used tool because of its simplicity, affordability, and reliability.[21] Nevertheless, validation of these tools as part of the transculturalization process is still needed.[22] This review summarizes the key LA studies evaluating screening tools that are culturally adapted to the region, as well as the strategies that have been successfully implemented for diabetes prevention.

METHODS

The purpose of this paper is to provide a review of the adaptations developed for T2D prevention in LA, focused on screening tools and the translation of diabetes prevention programs. Because of the limited evidence published on this topic, we were unable to perform a systematic review. Instead, a comprehensive literature review spanning 1960-2016 was performed, using "Diabetes," "Latin America," "Prevention," "Screening," and "Tools" as key words. This review also contains original data from the authors only previously published in posters.

RESULTS

Strategies of Transculturalization in Diabetes Prevention.

Transcultural Initiatives in Latin America. Transculturalization incorporate ethnocultural factors to optimize implementation of an evidence-based template, and in this case, for diabetes prevention and care.[15] The clinical practice algorithm (CPA) has emerged as the ideal format to convey recommendations and is based on validated transculturation protocols.[23] The CPA is a derivative of related clinical practice guidelines. After transcultural adaptation, the CPA is then implemented, evaluated according to prespecified outcome metrics, and then optimized for a specific target population.[23] A stepwise approach to transculturalization process presented in an algorithmic format, including validated protocols and frameworks for cultural adaptation, has been proposed.[24]

The transculturalization experience in LA has already been initialized. For example, after comparing measurements of visceral adipose tissue obtained by computerized axial tomography with abdominal circumference in participants from 5 LA countries, it was proposed that the cutoff point to identify people with abdominal obesity is ≥94 cm in men and ≥90 cm in women, which differs from other ethnic groups.[25] In a US population it was estimated that a cutoff of body mass index (BMI) > 30 kg/m^2 underestimates the proportion of participants with excess body fat in the obese range as measured by bioimpedance.[26]