



Two approaches, one problem: Cultural constructions of type II diabetes in an indigenous community in Yucatán, Mexico



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ABSTRACT

The emerging epidemic of obesity and type II diabetes in Mexico has recently propelled the nation into the public health spotlight. In the state of Yucatán, the experience of diabetes is greatly impacted by two cultural constructions of disease. In this setting, elements of Yucatec Mayan health practices as well as the biomedical model affect the approach to type II diabetes. Both frameworks offer unique understandings of the etiology of diabetes and recommend different ways to manage the condition. Based on in-depth and semi-structured interviews with both community members and clinicians, the present study seeks to understand how diabetes is understood and treated in indigenous settings in rural Yucatán. We explore the context in which community members navigate between locally available healthcare options, choose one over the other, or incorporate strategies from both into their diabetes care regimens. The tension between indigenous community members and their biomedical healthcare providers, the changing food environment of this community, and the persistence of traditional gender constructions affect the management of type II diabetes and its associated symptoms.

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1. Introduction

Over the last three decades, the southeastern state of Yucatán, Mexico has witnessed a dramatic increase in the incidence and prevalence of type II diabetes. The less developed southern region of Mexico, which includes Yucatán, experienced a 128% increase in diabetes mortality rates from 1980 to 2000 compared to the more developed northern region, where mortality increased 32.5% (Barquera et al., 2013a). The emerging diabetes epidemic plays out against a backdrop of key cultural practices. Yucatán remains one of the most indigenous states in all of Mexico (INEGI, 2010). The 2010 population census reports that 62.7% of Yucatán residents age three or older identify as indigenous, the highest rate in the nation (INEGI, 2010). Spanish is the second language for many residents, and Maya is the first: 29.6% of all Yucatán residents age three or older speak an indigenous language (INEGI, 2010).

Historically, indigenous groups in Mexico have faced massive inequalities due to oppressive institutions and policies. While these policies are no longer in place, their effects are still pernicious in the

disparities that exist between indigenous and non-indigenous groups (Patrinós, 2000). Rates of poverty among the indigenous, for example, are approximately 50% higher than rates of poverty in the general Mexican population (García-Moreno and Patrinós, 2011). These inequalities extend to health, from higher rates of infant mortality to poorer access to healthcare to increased burden of disease, including type II diabetes (Patrinós, 2000). In a variety of settings, health vulnerabilities arise among populations when ethnicity and gender interact with social and economic inequalities such as those experienced by the Yucatec Maya (Page-Pliego, 2015; Farmer, 2001).

Additionally, the intersection and influence of several cultures affect the health behaviors in Yucatán. The Yucatec Mayan understanding of disease has evolved over centuries and incorporates elements from a wide range of cultural traditions (Page-Pliego, 2015). Indigenous understanding of physical health incorporates not only the body, but also harmony with nature, the emotional self, and other members of society (Hale-Gallardo, 2015). In addition to informing an understanding of disease etiology, this framework also influences healthcare treatments and decisions. The Maya have relied on plant-based remedies to manage their health problems for centuries, and many continue to do so today (Ortiz et al., 2007).

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The other dominant influence on healthcare behaviors in Yucatán stems from the culture of biomedicine. As seen in the more traditional approaches to medicine, biomedicine is influenced by a variety of historical, cultural, and political factors (Lock and Nguyen, 2010). Modern biomedicine is based on molecular biology and advancements in technology. Disease is often defined as deviations from the norm of measurable biological variables (Lock and Nguyen, 2010; Martin and Peterson, 2009). It tends to focus on patient experience solely as a progression of physiological symptoms (Higgs et al., 2008). Recently biomedicine has acknowledged the role of social determinants of health as well as emotional and psychosocial stress on chronic disease etiology and outcomes; some have begun to incorporate these factors into its model of disease (Higgs et al., 2008; Ely et al., 2011). However, the biomedical approach has a long and continuing tradition of physical health and illness only being shaped by biological processes and Western medical care (House, 2001).

Although there is literature exploring diabetes in Mayan populations, these studies tend to largely ignore the state of Yucatán. In a study on the influence of sugar-sweetened beverages (SSBs) on diabetes among the Maya of Chiapas, participants acknowledged the importance of these products in causing the condition (Page-Pliego, 2013). Additional research has explored the subjective understanding of six respondents in the state of Chiapas regarding the causes of their diabetes (Page-Pliego, 2015). Other studies of type II diabetes in Mayan populations of Mexico have focused on social support as a part of the care regimen (Juárez-Ramírez et al., 2015). Therefore, the current literature tends to separately emphasize one aspect of the diabetes experience – either causes or management strategies. Little work has been done on integrating both understanding of and care strategies for type II diabetes among the Yucatec Maya.

Based on semi-structured interviews with indigenous participants and biomedical doctors in rural Yucatan, we explore the etiological understandings of and management strategies for type II diabetes. We examine the diversity of factors that influence how diabetes is understood and managed in one rural, indigenous *pueblo* in Yucatán.

2. Research methods and study site

Ethical clearance was provided by the Fulbright U.S. Program.

2.1. Study setting

We performed our study in the small, rural community of Tope (pseudonym) in the state of Yucatán. Located approximately 100 miles from the state capital of Mérida, the population of Tope is 5250 (INEGI, 2010). The community was selected for its size, rural location, and the prominent indigenous presence within the community, as well as for social networks established by the second author in previous research. Over 80% of the population of Tope reports speaking Yucatec Maya (INEGI, 2010). In addition to the widespread use of the Yucatec Mayan language, other indicators of the indigenous presence include the use of traditional *huipiles* among many women as their preferred manner of dress. Many men still make their living working in the *milpa* (parcel of land), following the Mayan custom of slash-and-burn agriculture. People sleep in hammocks in *palapa*-style housing, while tortillas and other foods are cooked over open flames in outdoor kitchens.

Previous research identified Tope as a new sending community of international migrants to the United States. The subsequent influx of remittances infused this indigenous community with previously unavailable goods and services. Of particular interest was the newly constructed biomedical health clinic, staffed by two

physicians and one director. The clinic provided primary care and included a small pharmacy with medications available for diabetes treatment. Government health programs subsidized these medications as needed. A well-resourced clinic of this magnitude is exceptional in a Yucatec town the size of Tope. Several participants noted that Tope's international migrants in the United States had pooled resources to fund the construction of the clinic. A plaque outside the clinic acknowledged the role that international migrants played in the clinic's inception: "To our brothers in Portland, Oregon".

2.2. Methodology

The research relied on qualitative techniques of semi-structured interviews and a snowball-sampling frame. A total of 36 interviews were conducted, 34 with community members as well as an additional two interviews with the clinicians employed in the health care facility. Due to the limited amount of respondents in any population with diabetes as well as to time constraints, scientific sampling was not an option. Additionally, due to sensitivity of the topics, we determined that snowball sampling and personal interviews were the most effective way to recruit respondents into our study. Snowball sampling allows researchers to more easily identify and build a sample of respondents with hidden or even stigmatized characteristics (Esterberg, 2002). Community participants were initially chosen in consultation with the key informant, a community leader greatly involved in indigenous preservation and economic empowerment. Our key informant provided introductions and ensured access to community members. Additionally, the participants themselves actively recommended other potential respondents, referring us to relatives and friends. The snowball sampling method produced 34 community participants (9 men and 25 women), who ranged in age from 33 to 88 years old and represented a variety of socioeconomic statuses and geographic areas of Tope. While we hoped to interview equal numbers of men and women, men often declined to answer questions about diabetes. All community participants identified as indigenous. Of the 34 participants, 24 had type II diabetes and 10 did not. Non-diabetic participants were included to enrich the understanding of the significance of type II diabetes in the community as a whole.

The principal investigator (PI) lived in the vicinity of Tope for nine months during the fall of 2014 through the spring of 2015. Interviews were conducted from September through March. Interview questions were posed in Spanish by the PI. Responses were given in Spanish and in Yucatec Maya. Again the key informant was central to the research process, as she translated between Spanish and Maya when necessary. The interviews ranged from 20 min to over two hours in duration, with an average of 35 min per interview. Due to high rates of illiteracy among the respondent population, verbal informed consent was obtained from each participant prior to the interview.

The interview guide for the community members explored participants' impressions of social, cultural, and dietary influences on diabetes. The interviews were designed to examine participants' perspectives regarding the etiology of type II diabetes, diabetes management strategies, and the food environment. The interviews also sought to identify barriers to effective diabetes management, such as access to healthcare, food choice and availability, and exercise. The probing questions allowed participants to elaborate about practices and influences related to diabetes that seemed most relevant to them. A separate interview guide for the two general practitioners employed by the clinic used a biomedical focus to probe their understanding of the state of diabetes within Tope. For example, the clinicians were asked to describe the

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