

Health Care Providers' Perceptions on Diabetes Mellitus in Rural Guatemala

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Clendening Fellowship Proposal

February 13th, 2012

Introduction

Diabetes is a social disease; successful management depends not only on an individual patient's decisions and behaviors, but also on his or her interactions with other people. In indigenous Maya communities of Guatemala, where diabetes is one of the most common diseases, poverty, inaccessible health care, and limited educational opportunities complicate the diagnosis and treatment of diabetes mellitus. However, social interactions with friends, family members, and a myriad of competing health care providers significantly influence patients' experiences of diabetes as well. This study will explore health care providers' knowledge, attitudes, and care approaches for diabetes in four indigenous Guatemalan villages. These results will be used to develop a set of quality improvement goals and objectives for patient management in each of the four clinical settings.

Background

Guatemala has the highest indigenous population in Central America, and second-highest in all of Latin America. Despite Guatemalan Ministry of Health (MOH) efforts, there is a great lack of health care resources for indigenous population in rural areas. Health care accessibility in these areas is vital with the growing burden of non-communicable diseases such as diabetes. Within the indigenous population, type II diabetes mellitus is driven by a prevalence of sedentary lifestyle and brought about by increased urbanization and the decline in traditional agricultural lifestyles.

The primary treatment costs and adverse effects of diabetes result in an economic burden that weighs heavily on the more impoverished, rural areas of Guatemala. The debilitating effects of this chronic illness can threaten a person's employment and thus the overall well-being of an entire family. Along with the economic burden, diabetes is a social disease. The adherence to treatment is not only dependent on the individual patient but their family and social groups. Knowledge of diabetes varies within a broad range and can be affected by cases of medical pluralism. This references the often contradictory medical advice stemming from various sources such as: pharmacists, midwives, natural healers, market vendors, nurses, family members and friends.

While volunteering with the non-profit organization Wuqu' Kawoq, I observed the effects of medical pluralism amongst diabetic patients and their treatments. For example, Maria has been a diabetic patient for the past seven years and has sought various sources for her treatment. She first entered the program with Wuqu' Kawoq after being diagnosed with diabetes in a health center. She arrived at one of the free clinics for a blood glucose test to see if her current treatment of herbal remedies was working to lower her blood sugars. With a resulting glucose level of 232 mg/dl, I counseled Maria on diabetes. Maria obtained her free medications (metformin and glyburide) that day at the clinic but did not return for six months. Upon her six month return she was still using herbal remedies prescribed by a natural healer and believed her diabetes could be cured. Maria represents a common dilemma with diabetic patients and treatment adherence.

Many patients are vulnerable to the various sources of medical advice when there are no education initiatives within their communities. These issues can be overcome by extending the availability of quality medical services and diabetes educational groups. The social implications and immediate biomedical aspects of diabetes mellitus are inseparable and there is a great need to implement these programs within the indigenous population to approach these obstacles.

This past year, I volunteered with Wuqu' Kawoq and addressed our patients' needs in diabetes education. I partnered with the Institution of Nutrition in Central America and Panama (INCAP) and APRECOR (Guatemalan Organization for Prevention of Heart Disease) to create a manual on cardiovascular disease. I completed the manual with a focus on cultural adaptations for the rural diabetic patient population. The content of the manual was based upon results from a preliminary ethnographic investigation on perceptions of diabetes among indigenous patients. The manual addresses issues such as diabetes as a chronic medical illness, causation, diet and modifications, related organ damage, and the significance of familiar and peer support. The manual served as an important tool to overcoming some of the confusing advice provided within remote rural areas.

Although ethnographic surveys were distributed among the diabetic patients, there is no data on perceptions of diabetes among the health care providers in these rural areas. Much of the medical advice and information on diabetes is stemming from various sources including midwives, natural healers, nurses, physicians, and other health care providers. There are commonly more traditional healers (midwives, natural healers) than physicians in the remote rural areas. There is a need to better understand the perceptions of these various health care providers and to encourage a culturally-sensitive method for advancing the quality of care for diabetes.

Description

To better understand health care providers' perceptions on diabetes, I will conduct qualitative surveys to explore the knowledge, attitudes, and practices of health care providers within the rural communities San Juan Comalapa, Tecpan, Santiago Sacatepéquez, and San Lucas Toliman. I will interview approximately twenty-four health care providers of various backgrounds such as natural healers, pharmacists, midwives, nurses, and physicians. I will interview six different health care providers from each community. The participants in the study will be selected through previous contacts and health care affiliates. The occupation of these health care providers will depend on the demographics of each community. For instance, the community of Tecpan is more urbanized than San Juan Comalapa and might have higher-educated health care providers such as nurses or physicians. Also due to the demographics of the indigenous communities, there are fewer physicians in these rural communities. Most physicians are located in more urbanized areas such as Guatemala City. I will predominantly interview midwives, natural healers, pharmacists, and then nurses in each community.

Many of the health promoters in these communities speak Kaqchikel Maya as their primary language and Spanish is their second language. I will determine their language preference before each interview. I am fluent in Spanish and at an intermediate level in Kaqchikel Maya. Due to the variance in Kaqchikel Maya between the communities, I will hire a Kaqchikel Maya translator when the interviewee's preference is Kaqchikel Maya. The qualitative surveys will be carried out in an informal interview setting. Each survey is written in Spanish for a translator to read because Kaqchikel Maya literacy is not common.

Guatemala presents barriers to travel often and other potential conflicts. Some of these conflicts arise due to detrimental weather (i.e. mudslides, volcanic eruptions, etc.), increased violence upon local chicken-bus travel, or other issues. This will potentially affect the study sample size.

I plan on carrying out qualitative research in Guatemala for four weeks with one week of Kaqchikel Maya lessons at the end of my stay. Most individuals in the rural villages speak Maya language as their first language and Spanish is their second language. In the more poverty-stricken communities, it is common for a person to complete only *educación básica*, or four years of schooling. Thus, many individuals in these regions depend on their primary language, and not Spanish. There are over half a million Kaqchikel Maya speakers in the Guatemalan highlands and most of the current diabetic patients speak Kaqchikel Maya. A higher level of fluency in Kaqchikel Maya is important within these smaller villages and I would like to further my studies with a native speaker. I will dedicate approximately two weeks in completing transcription of all interviews and data analysis in Kansas City where there are more resources such as computer accessibility.

Every week I will attempt to travel to a different community to see current diabetic patients with a community health worker and follow-up on their treatments. Below is a tentative schedule with a later departure to Guatemala because I will be presenting past research on diabetes at the Native American and Indigenous Studies Association (NAISA) Conference in Connecticut (this expense is not included in my budget).

March 5th - Begin IRB application with the Human Subjects Committee.

[June 3rd – June 6th] NAISA Conference in CT.

[June 9th – July 15th: Guatemala]

[July 16th – July 28th: Kansas City]

June 9th – 10th - Arrive in Antigua, Guatemala.

June 11th, Monday – Travel to Santiago, Sacatepéquez.

June 12th, Tuesday – Interview 2 Health Care Providers.

June 13th, Wednesday – Transcribe interviews.

June 14th, Thursday – Interview 2 Health Care Providers. /See patients with Guicha.

June 15th, Friday – Interview 2 Health Care Providers.

June 16th, Saturday – Schedule interviews for following weeks. /Travel to San Juan Comalapa.

June 17th, Sunday - *Rest*

June 18th, Monday – Interview 2 Health Care Providers.

June 19th, Tuesday - Transcribe interviews.

June 20th, Wednesday - Interview 2 Health Care Providers.

June 21st, Thursday - Transcribe interviews. /Return to Santiago Sac., see patients with Guicha.

June 22nd, Friday - Interview 2 Health Care Providers.

June 23rd, Saturday – Confirm interviews for next week. / Travel to Tecpan.

June 24th, Sunday - *Rest*

June 25th, Monday - Interview 2 Health Care Providers.

June 26th, Tuesday - Transcribe interviews.

June 27th, Wednesday - Interview 2 Health Care Providers.

June 28th, Thursday - Transcribe interviews. /Return to Santiago Sac., see patients with Guicha.

June 29th, Friday - Interview 2 Health Care Providers.

June 30th, Saturday - Transcribe interviews. / Travel to San Lucas Toliman.

July 1st, Sunday - *Rest*

July 2nd, Monday - Interview 2 Health Care Providers.

July 3rd, Tuesday - Transcribe interviews.

July 4th, Wednesday - Interview 2 Health Care Providers.

July 5th, Thursday - Interview 2 Health Care Providers.

July 6th – 8th - Visit Maya Ruins.

July 9th – July 14th - Kaqchikel Lessons.

July 15th, Sunday - Guatemala Departure.

July 16th – July 28th – Kansas City, Kansas. Complete coding of interviews and entering into database. Analyze results.

Methods

Purpose of Study: This study will explore health care providers' knowledge, attitudes, and care approaches for diabetes in four indigenous Guatemalan villages. These results will be used to develop a set of quality improvement goals and objectives for patient management in each of the four clinical settings.

Data Collection: I will use qualitative research methods in this study with an accompanying Kaqchikel Maya translator when needed. I will carry out interviews with approximately twenty-four health care providers in four rural communities Santiago Sacatepéquez, San Juan Comalapa, Tecpan, and San Lucas Toliman. There will be interviews with six health care providers from each community. Health care providers will be through previous contacts and health clinic affiliates such as San Lucas Toliman Mission Clinic, ACOTCHI clinics in San Juan Comalapa and Tecpan, friend and community worker Guicha Ixcajuac of Santiago Sacatepequez, and others listed below. I will not be listing the names of the study participants to preserve anonymity but each participant is affiliated with one of the listed resources below.

Each interview will be in an informal setting with the qualitative survey attached below. This survey is in Spanish for the literacy of the translator, but interviews will be conducted in Kaqchikel Maya when appropriate. The survey content was composed based on past research methods and anthropological studies in my undergraduate education at the University of Kansas. These questions are open to criticism and edits by my mentors prior to distribution in Guatemala. All interviews will be recorded and transcribed. I will transcribe each interview to avoid personal bias in future data analysis. With each coded/transcribed interview, my mentor (as well as other colleagues) will be able to observe the results of this study.

Potential Challenges:

Guatemala is a developing country with daily obstacles not only to my research, but to individuals' transportation and routines. This study will be conducted in the wet season when mudslides are not uncommon and fluctuation in gang-related violence can pose barriers to travel. The number of study participants might vary based upon their availability and potential conflicts. I plan on a study sample of approximately twenty-four participants with six participants from each community. I would like the six participants of the community to include various health care providers such as two pharmacists or natural healers, two nurses, and two midwives. These numbers of health care providers will likely vary in each community not only due to potential conflicts in travel and scheduling, but also due to the demographics of each community as I mentioned above. Also, I am not a fluent Kaqchikel Maya speaker and this will create some discrepancy in the survey results. To avoid misinterpretations, I will be coding the interviews. To ensure efficient translation of the Spanish survey to Kaqchikel Maya, I will spend time confirming the correct translations with a native Kaqchikel Maya speaker.

Mentors:

- **Dr. Peter Rohloff**
Medical Director, Wuqu' Kawoq
Clinical Fellow, Harvard Medical School
peter@wuqukawoq.org

- **Dr. Allen Greiner**
Family Medicine Research Division
Associate Professor
University of Kansas School of Medicine
agreiner@kumc.edu

Health Care Provider Contacts*:

- **Asociación Civil de Comadronas Tradicionales de Chimaltenango (ACOTCHI)**
(Traditional Midwives Association of Chimaltenango)
Chimaltenango Department
<http://www.acotchi.org>

- **Erika Yax**
Head Midwife in ACOTCHI Clinic of San Juan Comalapa, Chimaltenango, Guatemala
Phone: (502) 5206 – 2423
acotchi@yahoo.com

- **Rodrigo Hernandez**
ACOTCHI Coordinator
Phone: (502) 4379 – 9711

- **Yolanda Mux**
Head Midwife in ACOTCHI Clinic of Tecpan, Chimaltenango, Guatemala
Phone: (502) 5384 – 2296

- **Herlinda Ic**
Nurse working in the Chimaltenango Department Region
Phone: (502) 570 9 - 8152
herlinda@wuqukawoq.org

- **Guicha Ixcajuac**
Community Health Worker in Santiago Sacatepequez
Phone: (502) 5315 – 8642

- **Maria Ticun**
Midwife in Santiago Sacatepequez
Phone: (502) 7830 – 2842

- **Dr. Rafael Guizar**
Physician in Chimaltenango Department
Phone: (502) 4583 – 0925

- **Dr. Augustin Rodriguez**
Physician in Chimaltenango Department\
Medical Director of Companero de Salud
Phone: (502) 4946 - 8389

- **Florencio Cali**
Site Director and Coordinator
(Contact for pharmacists in the four communities).
Phone: (502) 5735 - 5553
florencio@wuqkawoq.org

- **San Lucas Mission**
Kathy Huebert
La Parroquia
San Lucas Tolimán
Sololá 07013
Guatemala
CENTRAL AMERICA
Phone: (502) 7722 – 0112
<http://www.sanlucasmission.org/healthcare.php>

*With the above contacts I will contact affiliated midwives, nurses, and collaborating physicians (most I have collaborated with in past research). The participants of this study are not listed to preserve anonymity but are affiliated with the listed organizations/clinics.

Travel Contacts:

- **Florencio Cali**
Site Director and Coordinator
Phone: (502) 5735 - 5553
florencio@wuqkawoq.org

- **Ernesto Lopez**
Owner of Travel Services
Phone: (502) 4570 – 9329
Phone 2: (502) 5317 - 0624
antiguaturistica@yahoo.com

Kaqchikel Maya Translators (if needed):

- **Magda** (San Juan Comalapa)

Phone: (502) 4132 – 3430
magda@wuqukawoq.org

- **Juan Ajsavinac (Patzun)**
Phone: (502) 5959 – 3865
ajtzihsyan@yahoo.com
- **Rony Otzoy Chipix (San Juan Comalapa)**
Phone: (502) 4187 – 6130
Ron.ajmaq@yahoo.es

Teachers for Kaqchikel Maya Lessons:

- **Rafael Hernandez Huit**
Phone: (502) 4500 – 6994
corazondeletras@yahoo.es
- **Filiberto Patal**
Phone: (502) 5327 – 4040
fpatal@yahoo.com
- **Magda (San Juan Comalapa)**
Phone: (502) 4132 – 3430
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- **Juan Ajsavinac (Patzun)**
Phone: (502) 5959 – 3865
ajtzihsyan@yahoo.com
- **Rony Otzoy Chipix (San Juan Comalapa)**
Phone: (502) 4187 – 6130
Ron.ajmaq@yahoo.es

Lodging:

- **Wuqu' Kawoq Clinic**
*2 calle 5-43 zona 1
Santiago Sacatepéquez
Guatemala 03006
Central America*
- **Casa Luna, Antigua**
Owner: Mario Hernandez
Phone: (502) 5173 - 9432

- **Magda's home, San Juan Comalapa**
Phone: (502) 4132 – 3430
magda@wuqkawoq.org

- **Florencio Cali's home, Tecpan**
Phone: (502) 5735 - 5553
florencio@wuqkawoq.org

Type 2 Diabetes Mellitus in Guatemala:
Survey of Knowledge, Attitudes, and Practices of Health Promoters

Date: ___/___/___

Information to read to respondent:

The purpose of this survey is to learn about your knowledge, attitudes and practices regarding diet and treatment for diabetes (DM). Your answers will not be given to anyone and your identity will remain anonymous. Your participation is voluntary and you may choose to stop the interview at any time.

Thank you.

For the Interviewer:

Please circle the selected answers(s). Do not read responses unless instructions indicate you to do so.

General and Demographic Information

AGE: _____

GENDER: Male/Female (Circle One).

JOB TITLE: (Circle One).

- a. Midwife
- b. Nurse
- c. Pharmacist
- d. Natural Healer
- e. Physician

1. How many years of experience do you have in this occupation? _____
2. Where did you receive your education and how many years was the program?
3. What languages do you speak? (Check all that apply).
 - a. Kaqchikel
 - b. K'ichee'
 - c. Spanish
 - d. English
 - e. Others: _____
4. Are you able to read or write in any of those languages?

- a. Yes, _____
- b. No

DM Treatment, Diet Awareness and Knowledge Questions

- 5. In your opinion, how serious is DM?
 - a. Very serious
 - b. Somewhat serious
 - c. Not very serious
 - d. I don't know

- 6. What symptoms does the diabetic patient complain of normally?

- 7. In your opinion, can anyone get DM?

- 8. How or why does a person get DM?

- 9. What treatments do you provide to a person with diabetes?

- 10. Do these treatments cure DM?
 - a. Yes
 - b. No

- 11. How much does it cost for diagnosis and treatment?

- 12. How often do diabetic patients seek treatment from you?

- 13. How often do patients return for treatment?

- 14. What are some reasons patients do not return for treatment?

- 15. Does diet affect a person with DM?
 - a. Yes
 - b. No

- 16. If yes, how can diet affect a person with DM?

- 17. How do you explain the illness DM to your patients?

- 18. Explain what else you know about DM.

Thank you very much for your participation in this survey.

La Diabetes Mellitus en Guatemala:
Encuesta de Conocimiento, Actitudes, y Practicas de los promotores de salud

FECHA:

Leer al promotor de salud:

El objetivo de esta entrevista es para aprender más de sus conocimientos, actitudes, y prácticas asunto de la dieta y de la diabetes. Su respuesta y su identidad serán anónimas. Su participación es voluntaria y se puede parar la encuesta en cualquier momento si usted quiere.

Gracias!

Entrevistadora:

Por favor, marque la respuesta escogida. Sólo lea las opciones cuando las instrucciones le indican hacerlo.

Información General

NOMBRE:

EDAD:

SEXO:

Ocupación:

- a. Comadrona
- b. Enfermera
- c. Farmacéutico
- d. Naturista
- e. Médico

1. ¿Cuántos años de experiencia ha tenido en esta ocupación? _____
2. ¿Dónde recibió su educación y por cuánto tiempo has estudiado para cumplir su educación?
3. ¿Cuáles idiomas habla usted?
 - a. Kaqchikel
 - b. K'ichee'
 - c. Español
 - d. Ingles
 - e. Otros: _____
4. ¿Sabe leer o escribir? ¿En cuales idiomas?
 - a. Sí, _____
 - b. No

Tratamiento, Dieta y Conocimientos sobre la Diabetes

5. ¿En su opinión, que tan grave es la diabetes?
 - a. Muy grave
 - b. Grave
 - c. No es muy grave
 - d. Saber
6. ¿Cuáles son los síntomas que molestan a los diabéticos normalmente?
7. ¿En su opinión, a quienes les pega la diabetes?
8. ¿Por qué le pega a uno la diabetes?
9. ¿Cuáles son los tratamientos que dan a los diabéticos?
10. ¿Se puede curar la diabetes?
 - a. Sí
 - b. No
11. ¿Cuánto vale el tratamiento?
12. ¿Qué le hizo buscar tratamiento para la diabetes? ¿Cuánto tiempo pasó antes de que buscó tratamiento?
13. ¿Cuánto tiempo pasó hasta que el paciente vuelve otra vez para su tratamiento?
14. ¿Cuáles son las razones que los pacientes no regresan?
15. ¿Le afecta al diabético la dieta?
 - a. Sí (Véase la pregunta 16).
 - b. No
16. ¿Cómo afecta la dieta?
17. ¿Cómo se explica a la paciente acerca de la diabetes?
18. ¿Qué más ha oído o aprendido de la diabetes?

Muchas gracias por su participación en esta entrevista.

Budget:

Airline Ticket	\$782.50
Kaqchikel Maya Translator	\$200.00
Lodging and Meals	\$800.00
Airport Pick-up/Drop-off Transportation	\$60.00
Other Transportation*	\$500.00
Kaqchikel Maya Teacher	\$200.00
Total	\$2542.50

*Transportation fees will depend on current state of gang-related violence on chicken-bus travel. This number is currently conservative in presumption travel will more expensive and coordinated through Ernesto Lopez for safety issues.

Flight	Depart	
AMERICAN AIRLINES 1059	Kansas City (MCI) June 9, 2012 03:15 PM Travel Time : 1 h 40 m Cabin Class : Economy Seat : unassigned	Dallas/ Fort Worth (DFW) June 9, 2012 04:55 PM Booking Code : N Plane Type : M80
AMERICAN AIRLINES 2195	Dallas/ Fort Worth (DFW) June 9, 2012 05:45 PM Travel Time : 3 h 5 m Cabin Class : Economy Seat : unassigned	Guatemala City (GUA) June 9, 2012 07:50 PM Booking Code : N Plane Type : 738
Flight	Depart	
AMERICAN AIRLINES 2162	Guatemala City (GUA) July 15, 2012 08:35 AM Travel Time : 3 h 25 m Cabin Class : Economy Seat : unassigned	Dallas/ Fort Worth (DFW) July 15, 2012 01:00 PM Booking Code : N Plane Type : 738
AMERICAN AIRLINES 2036	Dallas/ Fort Worth (DFW) July 15, 2012 04:25 PM Travel Time : 1 h 30 m Cabin Class : Economy Seat : unassigned	Kansas City (MCI) July 15, 2012 05:55 PM Booking Code : N Plane Type : M80

Average Fare**Adult \$678.00****Taxes & Fees****Adult \$104.50****Flight Subtotal****\$782.50**

Bibliography:

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