

Factors influencing Medication Adherence of Patients at the Blumenschien Clinic

Christina Bourne

Clendening Summer Fellowship Proposal

University of Kansas School of Medicine

Introduction

Non-communicable diseases like diabetes and hypertension are imposing a growing burden upon low-income countries, which have limited resources and are struggling to address existing problems related to infectious diseases. Honduras is one of the poorest countries in the Western Hemisphere and the second-poorest country in Central America (Central Intelligence Agency, 2012). Honduras has a high prevalence of malnutrition, waterborne illness and chronic illnesses, such as diabetes and high blood pressure. Dr. Pamela Stewart, a director of the Blumenschein Clinic located in Horconcity, Honduras, has experienced this first hand. While trauma, malnutrition, and waterborne illness are commonplace at the clinic, recently the incidence of chronic diseases like diabetes and hypertension has increased dramatically. Because many chronic diseases are initially asymptomatic, Dr. Stewart has been facing problems with poor medication adherence and lifestyle changes. It is not specifically understood why there are adherence issues with the Blumenschein Clinic patients. Dr. Stewart believes a complex constellation of social, economic, and behavioral factors are involved, but there is a paucity of empirical data available to understand the problem so that appropriate policies can be implemented to increase adherence.

Dr. Stewart has requested an assessment to: 1) better understand patients' beliefs and attitudes about their chronic disease diagnosis; and 2) assess medication adherence using the predictor variables: health literacy, demographic information, ability to obtain the prescriptions, and two dimensions of the Health Belief Model, perceived severity and cues to action. I plan to spend 8 weeks in Horconcity to implement this survey and help with the daily activities in the clinic. I will gather information on adherence by conducting an exit survey with 80 patients (10 patients per week) that have hypertension or diabetes after their healthcare encounter. The results of this survey should directly impact patient health care at the Blumenschein Clinic. Dr. Stewart plans to use these findings to improve communication and implement evidence-based education programs to improve patient health outcomes by encouraging medication adherence and lifestyle changes.

Background

My interest in international aid and medicine has been a journey. Growing up in Tucson, Arizona, and having Mexican heritage gave me an innate interest in Latino healthcare in the United States. Immediately after my undergraduate education, I worked as a nutritionist and translator in a Medicaid clinic that served a large Spanish-speaking population. Working at this clinic motivated me to undertake a Master's Degree program in Public Health. During my studies, I began to broaden my focus to both national and international issues, such as maternal mortality in Central and South America. I completed a research project on this and also co-presented my research at a graduate student symposium. Since completing my MPH at Washington University in St. Louis, I have become more determined to work on health issues in both national and international arenas. My long-term goal is to contribute to the improvement of healthcare access and utilization in lower-income communities in Central and South America while continuing to provide healthcare for Latinos in the United States.

The impact of the transition from communicable to non-communicable diseases is becoming a serious threat to health and longevity of those developing countries. Death and disability from chronic diseases now generally exceeds that from communicable diseases on a global scale. Interestingly, this phenomenon stems from a combination of economic and social factors, as these countries begin to experience more prosperity. This is a double-edged sword. On one hand, globalization is strengthening the economies of developing countries, but these countries then pass through a continuum of dietary, economic and health stages as they modernize and urbanize. The dramatic changes in diets and disease status around the world have been referred to as the "nutrition transition" (Popkin, 2009). My undergraduate degree in nutrition and graduate education lend credence to my ability to understand and address this transition. I also have a proven record on research. Appendix 1 shows some of my publications and presentations at scientific forums related to nutrition and chronic disease.

Upon matriculation into medical school, I discussed my interests with Judith Reagan, the previous director of the Office of International Programs, who recommended I contact Dr. Stewart. After talking about the possibility of doing a summer clinic rotation, Dr. Stewart expressed a strong desire for a community needs assessment and a survey to better understand health behaviors related to chronic disease management. Dr. Stewart, who has been involved with the clinic since she was in high school, has long wanted to gather this information but has not had the time to complete these surveys alone. Dr. Stewart and I agree that my interests, ability to speak Spanish, and formal training all are well-suited to successfully complete a health behavior assessment. Dr. Stewart has reviewed this proposal. She is enthusiastic about the data that will be gathered and I have her full support to carry out this project (Appendix 2).

My interest in Honduras extends beyond that of wanting to "experience" an international trip. I am truly passionate about these issues and hope to continue deepening my understanding of health and illness globally. As an M1 in Wichita, I am starting a "Global Health and Tropical Diseases" student interest group. Furthermore, I was chosen by the KUMC International Outreach to go to Patanatic, Guatemala, over Spring Break 2013 to work in their Community Health and Education Center. I am drawn to the creativity of the past Clendening Fellowship projects. I appreciate how they push the boundaries of traditional medicine. Understanding the diversity of the human experience by researching different cultures and traditions is just as important as understanding the basic pathology of a disease. I hope to deepen my peers' understanding of global health, but most importantly I want to help Dr. Stewart and her group improve the health and wellbeing of those that live in the communities surrounding the Blumenschein Clinic.

Description

Broad Issue – Global Burden of Chronic Disease

As a country develops, the types of diseases that affect a population shift from primarily communicable diseases, such as diarrhea and pneumonia, to primarily chronic, non-communicable diseases such as cardiovascular disease and diabetes. There are myriad reasons for this shift. Populations are aging, due to success against infectious diseases from public health interventions programs, expansions in screening and vaccinations, and sanitation. At the same time, patterns of physical activity and food are changing due to globalization (Nugent, 2008); (World Health Organization, 2009). This is especially true in Honduras, where 23% of all deaths annually are from communicable and nutritional conditions, compared to 31% of total deaths from cardiovascular diseases (World Health Organization, 2010) (Appendix 3). This prevalence is often not well recognized among health experts and policymakers because these ailments are less visible than communicable diseases, as they progress slower and tend to be underdiagnosed (Nugent, 2008).

About the Blumenschien Clinic and the Patient Population

The Blumenschien clinic is located in the La Buena Fe compound, which is near the small town of Horconcitos, two hours outside of San Pedro Sula. The clinic serves an estimated 800 families (approximately 4,800 people) in the surrounding “aldeas,” or communities. The clinic itself is mainly outpatient and is staffed by nurses and community health workers. There is no physician working in the clinic year round. Trauma, diabetes, hypertension, machete wounds, malnutrition, and environmental food/waterborne illnesses are common ailments at the clinic. No one is turned away due to inability to pay. Because the staff is from the communities that they serve, they are aware of any individual financial restraints and accept payment for care based on an informal sliding scale.

The Clinic is open Monday through Friday from approximately 8am-5pm. On average about 300 patients are seen monthly. Recently, Dr. Stewart has encouraged the staff to begin keeping basic medical records. This consists of an excel spreadsheet that includes the patient's name, the date the patient was seen, age, diagnosis, and treatment given (Appendix 4). Using this data, the incidence and new diagnosis of chronic disease can be calculated. In June 2012, 46 patients out of 404 total patients (11.4%) were seen for a new diagnosis of a chronic disease. This data is limited, however. There is no past medical history included on the spread sheet so it is difficult to quantify the prevalence of chronic disease in the patient population. For instance, a patient could have a primary diagnosis of a parasitic infection but also have a history of a chronic disease that was not addressed during the appointment. Because this history is not documented, the burden of chronic disease cannot be directly determined.

Specific demographic information about the surrounding aldeas is not available, but Dr. Stewart has worked at this clinic since she was in high school and has a general sense of those living near La Buena Fe compound. Overall, it takes individuals approximately 30 minutes to 2 hours to reach the clinic from the surrounding areas, depending on the conditions of the road and available transportation. The majority of those living around the clinic are agricultural workers and have an income of about three dollars per day. Because the government only provides education through the sixth grade, many people do not have formal education beyond sixth grade. The cost of tuition, books and school supplies is exorbitant compared to local incomes, so it is not uncommon to see five-year-old children using machetes to harvest crops rather than going to school.

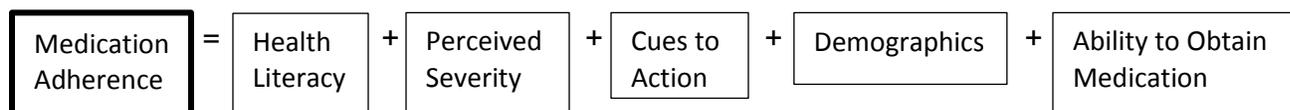
Problem the Clinic is Facing

Dr. Stewart has seen the transition from communicable to non-communicable diseases firsthand. The incidence of the diagnosis of hypertension and diabetes has increased tremendously. Unfortunately, despite this serious diagnosis, many of Dr. Stewart’s patients do not adhere to the prescribed medication regimen and lifestyle changes. Dr. Stewart understands that barriers to medication adherence may present differently in diverse patient populations and believes that this non-adherence is multifactorial. It is well understood in the United States that health literacy, perceived severity, demographics and ability to obtain prescriptions are essential determinants of adherence, and poor communication is thought to contribute to worse care for ethnic minority patients (Kressin & Petersen, 2001). Although these factors have been extensively explored in the United States, it is explored less internationally. There is a large gap in the literature about medication and lifestyle adherence in Central America, especially in Honduras. This lack of critical data forces healthcare workers to use generic statistics and information that may or may not be generalizable or relevant to the population that the practitioner is working in to increase patient adherence.

Project Proposal

The objective of this proposal is to determine the factors driving patient adherence. I will give an oral exit survey to patients who have been diagnosed with hypertension or diabetes (either they received the diagnosis that day in the clinic or they have a past medical history of diabetes or hypertension). The point of the exit survey is to understand the factors that influence medication adherence, the outcome variable. These factors, or predictor variables, that will be measured using this survey are: health literacy, demographic information, and the ability to obtain medications. Pillars of the Health Belief Model will be represented in two of the predictor variables: perceived severity and cues to action (Figure 1).

Figure 1: Model Predicting Medication Adherence with Predictor Variables



I will verbally conduct the exit surveys with patients immediately following their healthcare encounter (Appendix 5). Each survey will require approximately 45 minutes. First, I will ask open-ended questions regarding the key points or issues discussed during the consultation. This will be followed by the survey, which was created from validated questionnaires. Each interview will be audio recorded so that qualitative and quantitative data can be scored and analyzed.

At the end of the summer I will compile a report for Dr. Stewart that will give her an understanding of what is influencing patient medication adherence. These findings can serve as the evidence-based backbone for future program implementation. For instance, using this survey I might see that patients who do not perceive their disease as severe have poor medication adherence. Dr. Stewart and her team can then emphasize the severity of the disease during their subsequent patient encounters. Dr. Stewart also discussed the possibility of patient education programs. She has been hesitant about starting these programs without an understanding of how to best use her resources. In my report, I will use the data obtained to make specific recommendations about education program ideas.

Questionnaire Framework and Justification

The following four subcategories explain the justification for the survey content. Each variable (other than demographic information) has a validated, Spanish-language survey associated with it. I was unable to find surveys that were validated in Central or South America. The majority of these surveys were validated in non-English speaking, low-SES, Hispanic populations in the United States.

Adherence

Adherence to a medical regimen continues to rank as a major clinical problem in the management of patients with chronic diseases treated with drugs and lifestyle modification. Research suggests that the self-report method may provide a reasonably accurate estimate of adherence (Morisky, Ang, & Krousel-Wood, 2008). The Morisky Medication Adherence Scale (MMAS-8) will be used. This is a structured, eight-item, self-reported questionnaire will be used to assess medication adherence. The medication adherence measure proved to be reliable, with good concurrent and predictive validity in primarily low-income, minority patients with hypertension. According to the authors, the questionnaire might function as a screening tool in outpatient settings with other patient groups (Morisky, Ang, & Krousel-Wood, 2008). Furthermore, this scale was recently used to assess adherence as an outcome in a very similar study design addressing barriers to medication adherence in a underserved, Hispanic, non-English speaking population in the United States (Bailey, et al., 2012). Dr. Jamie Barner was kind enough to provide the translated and back-translated Morisky Scale that was successfully implemented in this study (Bailey, et al., 2012).

Health Literacy

Health literacy will be assessed using the Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50). It is a validated health literacy assessment tool containing 50 items designed to assess a Spanish-speaking adult's ability to read and understand common medical terms (Lee, Bender, Ruiz, & Cho, 2006). The SAHLSA was based on the Rapid Estimates of Adult Literacy in Medicine (REALM), known as the most easily administered tool for assessing health literacy in English (Lee, Bender, Ruiz, & Cho, 2006).

Health Belief Model: Perceived Severity and Cue to Action

Perceived severity is a dimension of the Health Belief Model (HBM), which includes possible medical, clinical, and social consequences resulting from not adhering to provider recommendations. Perceived severity will be measured using the six-question Brief Illness Perceptions Questionnaire (IPQ-Brief). The Illness Perceptions Questionnaire was developed to measure patients' representations of their illness and has a Cronbach's alpha= 0.84, indicating good internal reliability (Moss-Morris, Weinman, & Petrie, 2002). Finally, the HBM considers that a stimulus is necessary to trigger the decision-making process. This so-called "cue to action" might be internal (ie disease symptoms) or external (ie interpersonal interactions or mass media communications) (Janz & Becker, 1984). Similar to the questionnaire used by Kressin et al, "cue to action" is measured with our survey by asking patients if their friends or family help them to remember to take their medication (Kressin & Petersen, 2001).

Demographics and Ability to Obtain a Prescription

Basic demographic information, including gender, marriage and number of children, will be asked on the survey. This information can proxy as an indicator of social support. Also, patients will be asked about their ability to obtain medication. Patients will be able to state if

they are never, rarely, sometimes, often or always able to obtain their medications. If the patient is unable to always obtain their medication, we will have an open-ended question addressing the reasons they are unable to obtain the medication.

Data Analysis

An ordered logistic regression will be used if the proportional odds assessment is met to assess the ordinal, dependent-variable adherence (high, medium and low adherence). The first predictor variable, health literacy, will be collapsed into a dichotomous variable according to the validated survey instructions. Patients with scores above 37 will be considered health literate. The second predictor, perceived severity (part of the HBM), will be scored using the IPQ-Brief (Appendix 6). An overall score will be given that represents the degree to which the illness is perceived. A higher score reflects a more threatening view of the illness. The third predictor, cue to action (part of the HBM), will also be dichotomous. Yes, a family member might remind the patient to take medication, or no, the family does not remind the patient to take medication. The fourth predictor, ability to obtain medications, will be assigned scores from 1 through 5 (1=never able to obtain medication, 5=always able to obtain medication).

Timeline

I plan to spend eight weeks working in the Clinic in Horconciitos, Honduras. In addition to implementing this patient survey, I will be helping the staff with the patient load. To ascertain a representative and feasible sample size for this exploratory study, I will interview 10 patients per week. This number is not based on a power calculation but is a realistic number to accomplish. The power could not be directly calculated because the medical records do not include patient history, so chronic disease prevalence is not exactly known. Dr. Philip Twumasi-Ankrah, a biostatistician in the Department of Preventive Medicine at KUMC-Wichita, believes that this number could be representative with the incidence numbers obtained from the medical records (~46 new diagnoses per month). Weekends will be used to score surveys and do data entry. At the end of the summer, a report will be compiled and presented to Dr. Stewart with specific recommendations that can be implemented in order for her to increase patient adherence.

Methods

The Blumenshein Clinic has ongoing collaboration with KUSOM and has been offering medical rotations to forth-year medical students. I plan to fly into San Pedro Sula, Honduras, on June 1, 2013, and stay in Honduras through July 27, 2013. The Clinic provides accommodations (Appendix 7), meals and transportation to Horconciitos from San Pedro Sula Airport. Because I plan on working in the clinic for the majority of the summer, additional transportation is not necessary but is available through the Clinic. My main contact will be Dr. Pamela Stewart, who will join me at the beginning of the summer to help me begin my study and orient me to the clinic and the surroundings. She will also return to Honduras at the end of the summer. My additional mentor on the project design has been Dr. Philip Twumasi-Ankrah. He has agreed to further assist me upon my project completion with data analysis.

I will contact the KU Human Subjects Committee to determine if I will need to apply for IRB exempt status to administer the survey.

Budget

Description	Cost
Roundtrip airfare from Wichita, KS to San Pedro Sula, Honduras	\$700.00
Transportation from airport, housing, and meals for 8 weeks	\$700/month = \$1400.00
Audio recorder	\$100.00
SPSS Software	\$115.00
Copying surveys and misc. office supplies	\$100.00
Total	\$2415.00

Mentor Contact Information

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Appendix 1: Publication history related to chronic disease and nutrition**Publications**

Pepino, Y., & Bourne, C. (2011). Non-nutritive sweeteners, energy balance, and glucose homeostasis. *Current Opinion in Clinical Nutrition and Metabolic Care* , 14 (4), 391-395.

Morrow-Howell N, Gehlert S. Social Engagement and a Healthy Aging Society. In Anderson L, Prohoska T, Binstock B. Public Health and Aging. 2nd Edition. Johns Hopkins University Press
Acknowledgement: Christina Bourne

Posters

Maternal Mortality around the World: Country Level Indicators
2011 Graduate Research Symposium

Effect of Bariatric Surgery-Induced Weight Loss on Glucose Homeostasis
Principal Investigator: Marta Yanina Pepino de Gruev, Ph.D.

Abstract

Effect of Roux-enY Gastric Bypass Surgery-induced Weight Loss on Taste Perception and Eating Behavior
Obesity 2011 - the 29th Annual Scientific Meeting of The Obesity Society.
Pepino, Yanina & Bourne, Christina

Appendix 2: Letter of support from Dr. Pamela Stewart, one of the directors of the Blumenschien Clinic

Pamela Stewart <drpes@me.com>
To: Christina Bourne <cbourne523@gmail.com>

Tue, Feb 12, 2013 at 11:50 PM

Great Awesome - very professional - I would like your permission to share the final proposal with others who also might add to your funding needs.

You most definitely have my approval and vigorous support!

minor correction - I was there initially at 18years of age, high school.

I just returned from the trip and the gas prices have skyrocketed even in the short time I was there - the cost for travel to the clinic from san pedro has risen to \$125 US each way (of course we pay in lempira) I hope that it will not continue rising. Food prices have also risen. I would suggest that you change the monthly to \$700 just in case, as I am not sure with these prices if I can get the same rates in June/July.

We will have to do all printing and copying here as it would be cost prohibitive to try it there let alone chancy -may not be possible.

I can forward the Jan 2013 report if you like and I can have the Nurses maybe look at the names and add who has bp and dm issues. We should plan on having lots of reading glasses (various strengths- we can ask ophthalmologist / optometrist to donate) because even if they can read they frequently can not see well enough to read.

I will not be in Wlchita for at least 3 weeks. Call on weekends x 2 - first of march maybe.
Very well done!!

I will be down 2-3 week with you at the beginning and another 2-3 weeks at the end of your project. The "end" visit will be with a team.

Excellent JOB

† Pamela †

en las Manos de Dios

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Pasted text from the screen shot email above

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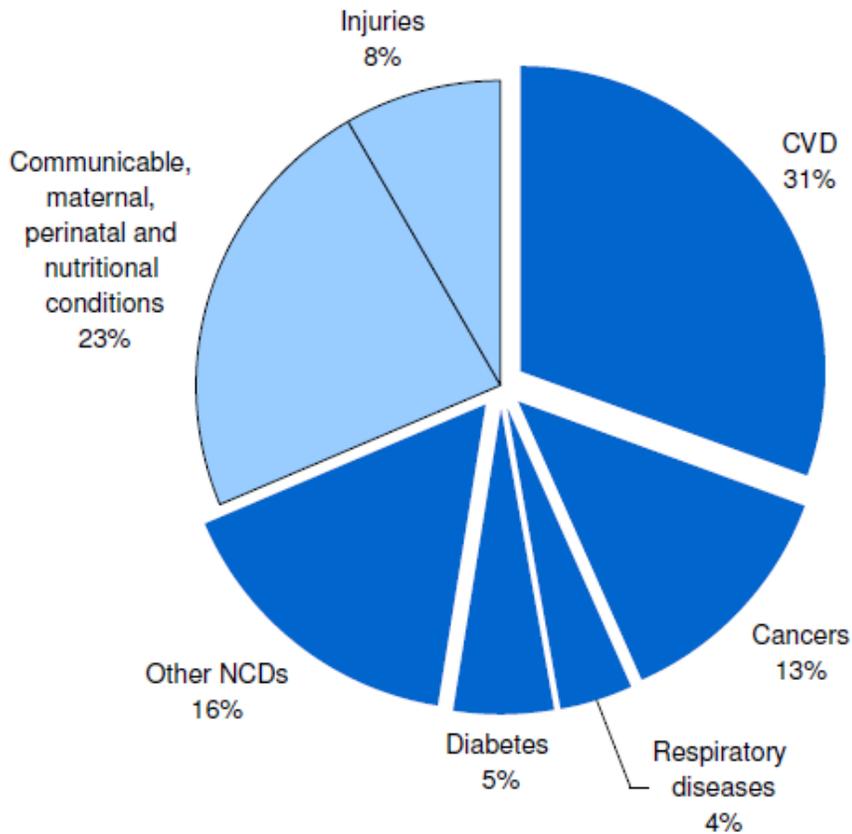
HM [620-275-5811](tel:620-275-5811)

cell [620-271-1276](tel:620-271-1276)

Appendix 3: Proportion of Total Deaths in Honduras in 2010

69% of deaths are due to non-communicable diseases

Proportional mortality (% of total deaths, all ages)*



NCDs are estimated to account for 69% of all deaths.

http://www.who.int/nmh/countries/hnd_en.pdf

Appendix 4: Screen Shot of Medical Records from the Blumenshein Clinic

FECHA		N	M	H	DX	TX	TABS	CAPS	SUSP	CREM	COSTO
9/1/2012	1 Felicity Argueta		41		Prediabetes	Taylenol	15				
9/3/2012	2 Cladia Mejia		24		Gripe	Desloratadine	12				
9/3/2012	3 Higinio Leiva			50	Gastritis	Omeprazol	20mg	20			
9/3/2012	4 Angelina Pineda		46		Amebiasis	Metronidazol	14				
9/3/2012	5 Marvin Josue	3			Diarrea	Suero					
9/3/2012	6 Lesly Bardales	2			Tos	Expectorante			30ml		
						Taylenol			30ml		
9/3/2012	7 Yesenia Reyez		28		Intoxicacion	Gabapetin 300mg	60				
9/3/2012	8 Brayen Marquez	2			Alergia	Alergil			30ml		
9/3/2012	9 Samuel Marquez	8m			Gripe	Advil			30ml		
9/3/2012	10 Andres Zepeda			81	Artritis	Naproxeno 500mg	12				
9/3/2012	11 Leopoldina Hernandez		49		Dolor Muscular	Ibuprofeno	15				
9/3/2012	12 Marcia Cardona		35		Dolor Abdominal	Antiespasmodico	12				
					Parasitismo	Albendazol					
9/3/2012	13 Damary Sarmiento		23		Dengue Clasico	Ibuprofeno	14				
9/3/2012	14 Andres Marroquin			45	Oido Tapado	Extracion de Cerumen					
						Taylenol	15				
						Hierro	30				
9/3/2012	15 Jose Reyez			27	Dengue Clasico	Ibuprofeno	18				
9/3/2012	16 Yesel Perez	6m			Diarrea	Continuar lactancia					
9/3/2012	17 Ramon Jimenez			20	Herida	Sutura 3 puntos					
						Ibuprofeno	15				
9/3/2012	18 Ronal Castillo	2			Parasitismo	Mebendazol			30ml		
9/3/2012	19 Jose Munoz			86	Cefalea	Taylenol	18				
9/3/2012	20 Maribel Gonzalez		40		Oidos	Extracion de Cerumen					
1/3/1900	21 Enrique Euceda			39	Cefalea	Ibuprofeno	21				

Appendix 5: Questionnaire**Morisky Medication Adherence Scale****Preguntas sobre sus medicamentos de la diabetes**

Nos gustaría entender como usted toma sus medicamentos de la diabetes. Por favor conteste las preguntas debajo.

1. ¿A veces se olvida tomar sus medicamentos de la diabetes?
 Sí
 No

2. ¿Durante las últimas 2 semanas, hubieron algunos días en los que usted no tomó su medicamento de la diabetes?
 Sí
 No

3. ¿A usted reducido o dejado de tomar su medicamento sin decirle a su doctor porque usted se sintió peor cuando lo tomó?
 Sí
 No

4. ¿Cuándo viaja o sale de casa, se le olvida a usted algunas veces llevarse su medicamento de la diabetes con usted?
 Sí
 No

5. ¿Se tomo su medicamento de la diabetes ayer?
 Sí
 No

6. ¿Cuándo siente que tiene la diabetes bajo control, algunas veces para usted de tomar su medicamento?
 Sí
 No

7. ¿Se ha sentido usted fastidiado/presionado de seguir en su plan de tratamiento para la diabetes?
 Sí
 No

8. ¿Qué tan seguido tiene usted dificultad en recordar de tomar todos sus medicamentos para la diabetes?
 Nunca
 Casi Nunca

- Algunas veces
- Muy seguido
- Siempre

Short Assessment of Health Literacy for Spanish Adults (SAHLSA-50)

<http://www.ahrq.gov/populations/sahlsa.pdf>

Stem	Key or Distracter		"no se" (Don't know)
1. próstata	__glándula	__circulación	__no se
2. empleo	__trabajo	__educación	__no se
3. menstrual	__mensual	__diario	__no se
4. gripe	__sano	__enfermo	__no se
5. avisar	__medir	__decir	__no se
6. comidas	__cena	__paseo	__no se
7. alcoholismo	__adicción	__recreo	__no se
8. grasa	__naranja	__manteca	__no se
9. asma	__respirar	__piel	__no se
10. cafeína	__energía	__agua	__no se
11. osteoporosis	__hueso	__músculo	__no se
12. depresión	__apetito	__sentimientos	__no se
13. estreñimiento	__bloqueado	__suelto	__no se
14. embarazo	__parto	__niñez	__no se
15. incesto	__familia	__vecinos	__no se
16. pastilla	__tableta	__galleta	__no se
17. testículo	__óvulo	__esperma	__no se
18. rectal	__regadera	__inodoro	__no se

19. ojo	__oír	__ver	__no se
20. irritación	__rígido	__adolorido	__no se
21. abnormal	__diferente	__similar	__no se
22. estrés	__preocupación	__feliz	__no se
23. aborto espontáneo	__pérdida	__matrimonio	__no se
24. ictericia	__amarillo	__blanco	__no se
25. papanicolaou	__prueba	__vacuna	__no se
26. impétigo	__pelo	__piel	__no se
27. indicado	__instrucción	__decisión	__no se
28. ataque	__herida	__sano	__no se
29. menopausia	__señoras	__niñas	__no se
30. apéndice	__rascar	__dolor	__no se
31. comportamiento	__pensamiento	__conducta	__no se
32. nutrición	__saludable	__gaseosa	__no se
33. diabetes	__azúcar	__sal	__no se
34. sífilis	__anticonceptivo	__condón	__no se
35. inflamatorio	__hinchazón	__sudor	__no se
36. hemorroides	__venas	__corazón	__no se
37. herpes	__aire	__sexo	__no se
38. alérgico	__resistencia	__reacción	__no se

39. riñón	__orina	__fiebre	__no se
40. calorías	__alimentos	__vitaminas	__no se
41. medicamento	__instrumento	__tratamiento	__no se
42. anemia	__sangre	__nervio	__no se
43. intestinos	__digestión	__sudor	__no se
44. potasio	__mineral	__proteína	__no se
45. colitis	__intestino	__vejiga	__no se
46. obesidad	__peso	__altura	__no se
47. hepatitis	__pulmón	__hígado	__no se
48. vesícula biliar	__arteria	__órgano	__no se
49. convulsiones	__mareado	__tranquilo	__no se
50. artritis	__estómago	__articulación	__no se

The Illness Perception Questionnaire

<http://www.uib.no/ipq/>

El Cuestionario Breve de Percepción de Enfermedad

En las siguientes preguntas, por favor, marque con un circulo el número que mejor representa su opinion

1. ¿Cuánto afecta su enfermedad a su vida?

0	1	2	3	4	5	6	7	8	9	10
no la afecta absolutamente nada						afecta gravemente mi vida				

2. ¿Cuánto cree Ud. que durará su enfermedad?

0	1	2	3	4	5	6	7	8	9	10
muy poco tiempo						para siempre				

3. ¿Cuánto control siente Ud. que tiene sobre su enfermedad

0	1	2	3	4	5	6	7	8	9	10
absolutamente ninguno						control total				

4. ¿En que medida cree Ud. que su tratamiento ayuda a mejorar su enfermedad

0	1	2	3	4	5	6	7	8	9	10
absolutamente nada						ayuda muchísimo				

5. ¿En que medida siente Ud. síntomas debidos a su enfermedad?

0	1	2	3	4	5	6	7	8	9	10
absolutamente ningún síntoma						muchos síntomas graves				

6. ¿En que medida está Ud. preocupado por su enfermedad?

0	1	2	3	4	5	6	7	8	9	10
absolutamente nada de preocupado						extremadamente preocupado				

7. ¿En que medida siente Ud. que entiende su enfermedad?

0	1	2	3	4	5	6	7	8	9	10
no la entiendo nada						la entiendo muy claramente				

8. ¿En que medida lo afecta emocionalmente su enfermedad? (Es decir, ¿Lo hace sentirse con rabia, asustado, enojado o deprimido?)

0	1	2	3	4	5	6	7	8	9	10
Absolutamente nada de afectado emocionalmente						Extremadamente afectado emocionalmente				

Por favor, haga una lista con los tres factores más importantes que Ud. cree que causaron su enfermedad, enumérelos en orden de importancia.

Las tres causas que yo considero más importantes son:

1. _____
2. _____
3. _____

Cues to Action

1. ¿Tus amigos or familiares te recuerdan tomarte la medicina?
 - Si
 - No

Obtain Medication

1. ¿Qué tan seguido te dan las medicinas?
 - Nunca
 - Casi Nunca
 - Algunas veces
 - Muy seguido
 - Siempre

Appendix 6: The Brief Illness Perception Questionnaire Scoring Instructions

Each item of the Brief IPQ assesses one dimension of illness perceptions:

The **consequences** score is simply the response to item 1.

The **timeline** score is the response to item 2

The **personal control** scores is the response to item 3

The **treatment control** score is the response to item 4

The **identity** score is the response to item 5

The **coherence** score is the response to item 7

The **emotional representation** is the response to item 8.

Illness **concern** is measured by item 6. This reflects a combination of emotional and cognitive representations.

Item 9 is the **causal** item. Responses can be grouped into categories such as stress, lifestyle, hereditary, etc. determined by the particular illness studied. Categorical analysis can then be performed, either on just the top listed cause or all three listed causes.

In some circumstances it may be possible to compute an overall score which represents the degree to which the illness is perceived as threatening or benign. The internal consistency of this score will depend on the illness studied and it is recommended this is checked. To compute the score, reverse score items 3, 4, and 7 and add these to items 1, 2, 5, 6, and 8. A higher score reflects a more threatening view of the illness.

Appendix 7: Accommodations at the Blumenshien Clinic

