

## ABSTRACT

### Improving Health Literacy and Health Care for Hispanic-Americans

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At its simplest definition, health literacy is characterized as the basic reading and numerical skills necessary for a person to function in a health care environment. Unfortunately, approximately 77,000,000 adults in the United States of America have basic or below basic health literacy skills. Inadequate health literacy seems to be the single biggest cause of poor health outcomes, primarily by inhibiting self-advocacy on the part of the patient. Awareness of health literacy is an important issue that is necessary for proficient navigation through the health care sphere by both the patient and the provider. In a nation that is comprised of all races, ethnicities, and cultures, over 24,000,000 residents speak English less than very well. The largest minority in America is the Hispanic population, currently representing 16% of the U.S. population (more than 50,000,000 people). Of this group, 16,000,000 have limited English proficiency. By 2050, it is estimated that 30% of individuals living in the U.S. will be of Hispanic origin. This thesis explores the broad topic and importance of health literacy, describes the major challenges faced by Hispanic-Americans in the health care setting, and identifies ways of improving health care for Hispanic patients.

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HISPANIC-AMERICANS

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## CHAPTER ONE

### A Literature Review on Health Literacy

#### *Health Literacy: A Definition*

Defining health literacy is a complex task but must be explored in detail to understand fully its implications in the United States health care system. There are many general definitions of the term, which tend to make it more difficult to discuss. A very precise, limited explanation reads that health literacy includes the “basic reading and numerical skills that allow a person to function in the health care environment” (Saefer and Keenan 463). In a publication by Nielsen-Bohlman, Panzer, and Kindig, they cite the National Library of Medicine’s definition as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (21). In another article, it is further defined as the ability to read consent forms, medical labels, basic health-care information, and understand written and oral instructions given by health-care professionals (Kickbusch 205). Health literacy is an essential skill for individuals, a public health imperative, an essential part of social capital, and a critical economic issue.

The skills needed for health literacy are arranged around five different domains of everyday life. The first and most obvious area is health care. The focus in health care is to develop abilities in navigating the health systems and encourage acting as a partner to health-care professionals. The second is within the home or community, in which skills include an application of health-promoting or protecting behaviors. This includes

self/family care and first aid. The third domain is within the workplace. Health literacy skills within the workplace include accident prevention, avoidance of industrial or occupational disease, job safety, health-promoting work environments, and a work-life balance. Fourth is within the political domain. This includes informed voting behavior, a knowledge of health rights, advocacy of health issues, and membership in health organizations. Last is the domain within the marketplace. These health literacy skills include making health-promoting decisions while purchasing goods and services (Kickbusch 207).

Within these five daily domains of life, individuals can apply health literacy in three dimensions. The first dimension is interactive, which refers to the literacy and social skills used to participate actively in maintaining one's health. This is applied in all five domains as it primarily involves communicating with others about health. The second is functional, referring to the basic reading and numerical skills related to health. This is especially necessary within the political domain and the marketplace, where informational statements or labels must be read in order to make an informed decision. Last, there is the critical dimension, which refers to the advanced cognitive and social skills that allow an individual to analyze health information and understand various dimensions of health. This is again important in all domains, but may primarily refer to the health care domain because it includes acquiring advanced skills needed to analyze health information, such as treatment options for diseases or medicinal labels (Kickbusch 207-208).

In his article, "The Meaning and the Measure of Health Literacy," David Baker discusses the importance of pre-existing individual capacities, which can be placed into

these dimensions. These capacities create the baseline of an individual's health literacy upon which more skills can be acquired or improved. These consist of reading fluency and prior knowledge. Reading fluency would fall into the functional dimension whereas prior knowledge pertains to the interactive dimension. Reading fluency consists of the ability to read and understand text, the ability to locate and use information in documents, and the ability to apply arithmetic operations and use numerical information in printed materials (879). Prior knowledge consists of an individual's former vocabulary and conceptual knowledge of health and health care.

### *Importance of Health Literacy*

Now that the many aspects of the term health literacy have been defined, we can discuss why health literacy and its improvement are important in our society. One of the number one reasons is that low health literacy leads to numerous health problems. In fact, it seems to be the "single biggest cause of poor health outcomes" (Kickbusch 208). First of all, low health literacy inhibits self-advocacy in health care settings. Patients with limited literacy cannot actively participate in health-related decisions and treatments. It is possible they will not even make it to an appointment simply because they do not know how to file for health insurance or they cannot figure out the directions to the doctor's office. Once they are at the appointment, they may have trouble filling out forms while in the waiting room. More likely than not, they will not ask for help, a feeling of shame keeping them from requesting assistance. It is possible they may sign a document they did not actually understand. If individuals lack the necessary social, oral, or written skills, they may not speak up to their health provider or ask questions when they are confused. They may nod along and pretend to understand the doctor, yet return home and take the

wrong dosage of medicine because they did not understand the directions. Low health literacy also means they will have less knowledge and understanding of their condition or disease, which translates to a limited ability to manage actively the disease and take care of their body (Martin 178). Furthermore, if they have children, they may not be able to take care of them properly when it comes to health and medications. Studies show that parents with low health literacy levels had greater risks of dosage errors when administering medicine for children, particularly errors of overdosing (Yin et al. 184). Communication is an essential part of health care. Patients need to be able to describe accurately their own symptoms, make appointments, and understand oral and written instructions in order to take care of themselves and their children. Those with limited health literacy cannot proficiently perform these tasks, which decreases the quality of care provided.

Limited health literacy not only affects the individual, but also society as a whole. According to researcher Kickbusch, people with poor health literacy are more likely to need emergency services, more likely to be hospitalized, less likely to be compliant with medicines, and less likely to use preventive services (208). All of these factors result in higher health-care costs. According to a 1998 estimation, low health literacy costs up to \$73 billion per year in the United States as a result of these factors (209). A study conducted by the Institute of Medicine found that patients with reading levels at or below a third grade level, and therefore with low health literacy, had on average Medicaid charges \$7500 greater than those who read at a higher level (Nielsen-Bohlman 24).

Unfortunately, in many health care settings, informational materials or forms are written at advanced levels, perpetuating these problems. Despite the fact that 20% of the

population reads at or below a fifth-grade level while the majority reads at an eighth-grade level, most health care materials are written at a tenth-grade level (Safeer and Keenan 463). Within the oral sphere, physicians do not always understand how to communicate effectively with their patients, and oftentimes the patients are too embarrassed or scared to admit they do not understand. Another factor that decreases an individual's health literacy level is the amount of competing information found online in our technological age. There are many contradictory and false sources of health information on the Internet or various forms of media that can confuse Americans, which can negatively affect the health literacy of an individual.

It is essential to understand that low health literacy can affect anyone if steps are not taken to educate citizens properly. However, the Institute of Medicine finds that low health literacy levels are most prevalent among individuals with limited formal education, individuals with limited proficiency in English, and among the older population (Nielsen-Bohlman 26). In an experiment exploring communication and health literacy issues, it was found that individuals with limited English proficiency (LEP) generally had the lowest rates of health literacy (Wynia and Osborn 102). In this experiment, a group of patients answered three questions on health literacy. The patients surveyed were between 25 and 44, female, and qualified either as a racial or ethnic minority. Of these patients, about one third qualified as having LEP. The study reported the following data: 53% of patients reported having difficulty learning about their medical condition due to misunderstanding written information; 61% of patients reported feeling a lack of confidence when completing medical forms on their own; 57% reported needing somebody to help them read hospital and clinic materials (107).

It was found that these same patients with lower health literacy levels had 37% lower odds of feeling that doctors and nurses listened to them, in comparison to patients with adequate health literacy. These patients had 28% lower odds of finding it easy to ask questions at the hospital or clinic (Wynia and Osborn 107). The most important finding of this study resides in the relationship between limited health literacy and lower perceived communication quality between patient and provider. A low level of health literacy not only poorly affects the individual but also damages or weakens the patient-physician relationship so important in the health care field.

### *Improving Health Literacy: A General Guide*

A definition of what health literacy is and why it is an important topic for the American nation has been given. It is now necessary to explore how to improve health literacy among the American population. Unfortunately, there is no quick fix for improving health literacy. It is an active skill that requires a lifelong process of learning new information. Individuals should be active in making health care decisions, aware of health issues within the cultural, political, and work domains, and be able to opt for healthy life choices. As previously stated, reading fluency and prior knowledge make up the baseline of health literacy for individuals, which means there should be an intention to improve, refine, or acquire new health literacy skills or abilities.

R. Rudd, in "Literacy and Health in America," defined five major areas in which improvement or instruction of health literacy skills should be focused. First is the area of health promotion. Generally this is the ability of an individual to purchase and cook healthy meals and take an initiative to exercise. Instruction should therefore be focused on providing information on proper nutrition and exercise. Second is health protection,

which includes the ability to decide between product options, to understand how to store food properly, and to make an informed decision when voting on health-related legislation. The goal here is to safeguard health by promoting these informed health protection behaviors.

Third is the area of disease prevention. This includes the skills of initiating early screening detection, follow-up diagnostics, and determining health risks. The goal is to foster these skills so that individuals can take preventive measures within their own health care. Fourth is health-care maintenance. These health literacy skills include accurately describing symptoms, following medicinal labels, and calculating timing and dosage correctly for medicine intake. Fifth and last is system navigation, which focuses on instructing individuals in the abilities of locating facilities, choosing health insurance packages, and understanding medical forms (Rudd).

These five areas should be the main focus of any type of health literacy instruction. The Institute of Medicine pinpoints two major institutions in which instruction on these five health literacy skills should be centered. Instruction should primarily be focused on the educational system and the health system. Increasing health literacy instruction within our educational systems is vital because we can start from childhood in elementary schools. If children learn to opt for healthier choices early on in life it will become second nature, and they will be more likely to have improved health literacy as adults. Health literacy instruction is also vital within the health system, obviously. Primarily, physicians and care-providers need to realize the importance of literacy and how it affects the patient-provider relationship. Instructional or information health materials need to be written in common, plain language. Physicians should be

instructed to recognize a patient's literacy level so they can effectively communicate. They should focus on uniquely meeting each patient's needs, taking into consideration the effect cultural or ethnic differences may have on their health literacy level. In fact, after conducting their health literacy experiment, Wynia, Osborn, and their colleagues conclude by suggesting that health care organizations can improve health literacy by improving patient-centered communication.

The educational and health systems comprise the focal points for health literacy instruction and improvement; however, once programs have been implemented in these institutions, the next institutions to be targeted should be the workplace, the political sphere, and the public market. Workplaces should provide a healthy work environment, provide healthy meal alternatives, or allow more flexible work schedules to allow time for healthy activities. Within the political sphere, health literacy should be integrated into policy and health policy design, should be focused on research agendas, and should be discussed both locally and nationally. In short, it should constitute a clear and important objective of government officials. Last, health literacy can be improved within the public market by introducing clear and understandable labels on food products, to help customers make healthy choices.

### *Health Literacy in the U.S.*

In order to improve upon health literacy, it is important to begin at the baseline level within the community or the nation. The 2003 National Assessment of Adult Literacy (NAAL) comprises the most comprehensive and recent assessment of adult literacy on a national scale ("National Assessment of Adult Literacy"). The only other NAAL was performed in 1992. Approximately 18,000-19,000 individuals participated in

the 2003 NAAL, as well as approximately 1200 inmates from both federal and state prisons. Participants represented 38 states as well as the District of Columbia. The NAAL contains multiple questionnaires and/or assessments to analyze thoroughly the health literacy status of American adults (sixteen or older). First, there is the Background Questionnaire, which provides descriptive data on respondents. This questionnaire is administered verbally and takes approximately thirty minutes. Second, there is the Fluency Addition to NAAL (FAN), which measures basic reading skills. These include the ability to decode, recognize words, and read with fluency. Third, there is the Adult Literacy Supplemental Assessment (ALSA), which assesses the ability of the least-literate adults to read words and comprehend simple prose. Participants are given this assessment instead of the normal NAAL if they score low on the first two core screening tests or questionnaires. Usually, the results from this assessment have come from specific demographic groups, such as minorities, English as a second language (ESL) adults, and the prison populations of the nation.

After answering these previous tests and questionnaires, most participants were then given the actual NAAL. Upon completion, participants were categorized into four levels of literacy: below basic, basic, intermediate, and proficient. The test itself consists of 28 health-related assessment questions that participants answered. Then they attempted to accomplish three types of health literacy tasks within the broad sectors of clinical, preventive, and navigational health care. Then, participants were given twelve health-related, authentic stimulus materials such as medical instructions, medication information, health insurance, etc. These three sections of the test assessed each individual's prose, document, and quantitative literacy levels. An example of a prose task

includes locating information within a newspaper article. An example of a document task includes filling out the appropriate information on a form. Lastly, an example of a quantitative task includes balancing a checkbook. These two sectors are present in everyday life and therefore provide an accurate measure of adult literacy.

The results of the 2003 NAAL report that the majority of American adults have intermediate health literacy (~53%). This correlates to the ability to read instructions on a prescription label and be able to determine timing of medication. The next highest category of Americans was basic health literacy (~21%). This correlates to the ability to read a pamphlet and the ability to provide a few reasons as to why someone with no symptoms should still be tested for disease. 14% of participants were found to have below basic health literacy, which correlates to their ability to read a set of short instructions or understand what can be eaten or drunk before a medical test. Only 12% of participants, the lowest percentage, qualified as having proficient health literacy. Those with proficient health literacy could perform tasks such as using a table or calculate an employee's cost of health insurance for a year. Overall, these numbers correlate to an estimated 77 million adults with basic or below basic health literacy.

The participants within the below basic or basic health literacy groups encompassed all racial and ethnic groups; however, white participants had the lowest percentages, totaling 28% for both groups, with basic at 19% and below basic at only 9%. The highest group consisted of Hispanic participants with a total combined percentage of 65%, with basic at 24% and below basic at a very large 41%. Other important findings include trends displaying a lower level of health literacy within the following

circumstances: participants with lower levels of education, those with an older age (65 or over), and those with either no insurance or those on Medicare/Medicaid.

A flaw within the NAAL is that it does not measure knowledge of health issues, such as how to prevent high blood pressure, nor does it assess understanding of medical or scientific terms. The health literacy aspect of the test only measures the participants' ability to perform tasks using written and printed health-related information. The Institute of Medicine views the test as only measuring primary reading skills and not other critical skills necessary to proficiency in health literacy, such as cultural and conceptual knowledge, listening, and speaking (Nielsen-Bohlman 21). The test is not designed to assess the skills associated with listening and speaking, primarily due to the costs and difficulty of measuring them on a national scope.

### *Health Literacy Assessments*

On a more local level, health literacy is often measured using different assessments than the all-encompassing NAAL. Before reviewing the currently available health literacy tests, it is important to describe what a health literacy assessment should be testing. As aforementioned, there are three types of literacy; prose, document, and numeracy (quantitative). The best test would accurately assess each of these three levels of literacy, as they are all needed to navigate the health care field properly. To reiterate, prose literacy tests the ability to search, comprehend, and use “continuous” texts—editorials, news stories, brochures, etc. Document literacy tests the ability to perform these same tasks, but within non-continuous texts—job applications, drug or food labels, maps, etc. Quantitative or numeracy literacy tests the ability to identify and perform computations using numbers found in print materials—figuring out a tip or balancing a

checkbook. With these three types of literacy in mind, we can move on to reviewing the various health literacy tests currently available to health care providers and researchers.

Two of the more common health literacy tests are the Rapid Estimate of Adult Literacy in Medicine (REALM) and the Test of Functional Health Literacy in Adults (TOFHLA). The REALM focuses on measuring the vocabulary of participants through a 66-item word recognition and pronunciation test. This assessment can be given in approximately three minutes or less. However, the assessment does not test for actual comprehension of the words being read nor does it test for document or numeracy literacy. It is also only available in English. The TOFHLA includes a 50-item reading comprehension section in order to measure reading fluency. It also includes a 17-item numeracy section that tests participants on their ability to read and understand authentic hospital documents and medicinal prescriptions. This test is available in both English and Spanish, and in large print (Baker 880). This is a good test to use when a detailed evaluation of health literacy is needed, primarily for research. However, there is also a weakness, as the test takes approximately 45 minutes to administer (Cornett).

There are variations on these two tests. For the REALM assessment, there is also REALM-R (revised) and REALM-SF (short form). The REALM-R is an 8-item shortened version of the full REALM test. The REALM-SF is a 7-item word recognition test. Both are shortened versions that can be given in less than two minutes. However, they both tend to have the same weaknesses as the full version, lacking in their ability to test for actual word comprehension, document literacy, or numeracy literacy. All three REALM tests are only available in English. There is also a S-TOFHLA (short form), a shortened version of the full-length TOFHLA. This test is a 36-item reading

comprehension assessment. Despite its shortened length, it still takes 12 minutes to administer, making it less than ideal for clinical settings (Cornett).

There is a health literacy test available for Spanish-speaking participants, called the Short Assessment of Health Literacy for Spanish-Speaking Adults (SAHLSA-50). This test is a 50-item spin-off of the REALM. It is supposed to only take 3-5 minutes to administer despite its large quantity of vocabulary terms. Similar to the REALM, the test consists of a health-related word, followed by two words—one that relates to the first and one that does not (for example: jaundice—yellow or green; the participant would, hopefully, choose the term yellow). In a similar weakness to the REALM, this test also does not ask for comprehension of the words listed.

One of the most recent health literacy tests is the Newest Vital Sign (NVS). It is the first health literacy assessment that can be administered in approximately three minutes and is available in both Spanish and English. The assessment is six items long and focuses on the activity of reading and understanding information on a nutrition label. It was created using the TOFHLA as a reference standard. In the first study to validate its accuracy, 250 English-speaking patients and 250 Spanish-speaking patients were tested by a team of researchers (Weiss 517). Participants were given both the NVS and the full TOFHLA in order to examine the precision of the NVS test in determining health literacy. Six different scenarios were proposed and tested but ultimately the “ice cream nutrition label” scenario was most effective and today defines the NVS. A hard copy of the ice cream nutrition label is given to the patient as a reference to use as the interviewer asks six questions that emphasize numeracy and reading skills. This first study found the NVS to be a “reliable and accurate measure of literacy with high sensitivity for detecting

persons with limited literacy” (520), which was confirmed in a second study a couple of years later (Osborn et al. S42).

The questions not only involve mathematical numeracy skills, but also abstract reasoning skills and “locate-the-information” skills, which work to assess reading and comprehension. The appeal of this test lies in the fact that nutrition labels are common items present in the daily life of all patients. For chronic diseases or food allergies, understanding nutrition labels is essential to health management (Weiss 521). The NVS excels in identifying patients with limited health literacy skills, but its weakness is in classifying patients with adequate literacy. Therefore, it appears to be a useful screening tool in clinics, but should not be used in research settings that require measurement precision (Osborn et al. S44).

### *Una Transición*

Despite the widely acknowledged importance of health literacy, the concept remains largely unaddressed in clinical settings (Welch, VanGeest, and Caskey 286). Furthermore, much of the research focuses on assessing the health literacy of native English speakers. According to the Institute of Medicine, non-native Americans, whose primary language is something other than English, have additional problems when it comes to health literacy (Nielsen-Bohlman 19). Language barriers and the specific medical vocabulary necessary within health care multiply the problems that put patients at risk for limited health literacy. According to researchers Matthew Wynia and Chandra Osborn in their article, “Health Literacy and Communication Quality in Health Care Organizations,” “future research should explore potential interactions between language barriers and health literacy on patient perceptions of communication quality and patient

health outcomes” (108). In a nation that is comprised of all races, ethnicities, and cultures, approximately 9% of citizens speak English “less than very well” (US Census Bureau). This percentage may seem small and insignificant, but in a country as large as our own, that equates to over 24 million people.

According to the 2010 National Census, 16%, or 50.5 million residents, are of Hispanic or Latino origin. In addition, approximately 12% of the nation speaks Spanish at home instead of English. Of these 34 million Spanish-speakers, 47% speak English less than very well. This equates to more than 16 million people. So, as of 2011 when this data was last collected, more than 16 million Hispanic-American residents were unable to speak English at an adequate level within their daily lives (US Census Bureau). It is hard to contemplate the difficulties that 16 million LEP Hispanic patients face when trying to navigate the health care system. With such large statistics, there is no doubt that further research should begin with Spanish-speaking patients.

## CHAPTER TWO

### Health Literacy and the Hispanic-American Population

#### *Health Care and Hispanic-American Patients*

Addressing health care access among Hispanics is of major public concern. Currently the group represents 16% of the U.S. population, and by 2050, it is estimated that 30% of individuals (more than 1 out of every 4 Americans) living in the U.S. will be of Hispanic origin (Juckett 48). In order to be more accurate, it is necessary to define a few terms and subgroups. Often the terms Latino and Hispanic are used interchangeably. However, the two have different connotations. Latino refers to people born in a country whose language evolved from Latin (Caballero S10). The term is often used, however, to describe individuals of Cuban, Mexican, Puerto Rican, South or Central American descent, or from any other Hispanic culture or origin, regardless of race (Juckett 48). Hispanic refers to people born in a country conquered by Spaniards, and for whom Spanish is the language of origin. Both terms are similar in that they refer to an individual's ethnicity, not their race. Ethnicity is associated with culture and is characterized by common ancestry, language, and customs (Caballero S10). Overall, the term Hispanic is often used as it inherently conveys the presence of both Spanish language and culture. Latino, in its truest sense, would encompass all countries that derived their language from Latin, which would include more than just Spanish-speaking countries. In this paper the term "Hispanic" will be used most commonly, but Latino and Hispanic may be used interchangeably.

Furthermore, it is important to know the various subgroups within the Hispanic-American population. Mexican-Americans comprise approximately 65 percent, and have mostly settled within the Southwest. The second largest subgroup includes Puerto Ricans, comprising approximately nine percent of the national total. Most Puerto Ricans have settled in the Northeast. The third largest subgroup of Hispanic-Americans includes the Cuban-Americans, comprising approximately 3.5 percent. Most Cuban-Americans have settled in Florida. Within the overall Hispanic-American population, approximately 23 percent live in poverty (Juckett 48). The 2011 census survey reported that almost 30 percent of Hispanic individuals living in the U.S. could not speak English very well or even at all (US Census Bureau). These individuals are classified as limited English proficiency (LEP) speakers.

There are certain medical ailments and diseases that appear frequently within Hispanic-American populations. One of these is not necessarily an illness, but may manifest in various symptoms. The adjustment reaction that recent immigrants must undergo when arriving in the United States may cause medical problems. Symptoms include a common feeling of loneliness, culture shock, fear of deportation, frustration with delayed immigration protocols, dismay over anti-immigration legislation, and an overwhelming burden of financial concerns. Immigrants often experience higher states of stress due to these issues, which may lead to an overall depressed sense of being. Such stress and depression may manifest as headaches or somatic symptoms. Another common medical problem among Hispanic patients is neurocysticercosis. This disease is the most common cause of seizures in Latino immigrants and is generally caused by the consumption of food contaminated with pork tapeworm. Hypertension is also a common

ailment, although its prevalence is only 4 percent higher than non-Hispanic whites. However, Hispanic-Americans are less likely to be treated for hypertension due to lower levels of awareness within their cultural community (Juckett 49).

Two of the most common and serious illnesses that plague Hispanics are obesity and type 2 diabetes mellitus. Both have disproportionately higher rates when compared to non-Hispanic whites. Both diseases are exacerbated by a relatively unhealthy diet and lack of physical activity or exercise. Traditional Hispanic foods can be high in fat and calories. In one dietary analysis, Mexican-Americans consumed significantly more carbohydrates and saturated fats than non-Hispanic whites (Caballero S12). Compared with non-Hispanic whites of 20 years or more, Mexican-Americans are on average 10 percent more obese. The greater prevalence of the disease is often attributed to the relatively high-carbohydrate and high-calorie diet followed by Hispanics. Relatively speaking, Hispanic-Americans often have a more sedentary lifestyle than their non-Hispanic white counterparts (Juckett 49). Furthermore, within Hispanic society, being somewhat overweight is often perceived as simply being healthy. Through this cultural value, Hispanics may be less likely to identify themselves as overweight or obese.

Additionally, 12 percent of Hispanics 20 years or older have type 2 diabetes mellitus. In comparison with non-Hispanic whites, Mexican-Americans have a three times higher incidence of diabetes mellitus. The higher prevalence of obesity increases the risk for this type of diabetes. Genetic factors also may play a part in the higher incidence of the disease. However, the disease is often allowed to progress and worsen because Hispanic patients either have less access to health care or do not choose to seek help until symptoms manifest. In either case, Hispanic patients are diagnosed later when

the disease has worsened, increasing the risk for complications. It may also be more difficult to treat Hispanic patients for diabetes than their non-Hispanic counterparts. In accordance with the cultural value of *simpatía* (kindness, conflict avoidance), declining food at a social event or familial gathering may be perceived as impolite, rude, or socially unacceptable. Therefore, it may be difficult to modify a patient's meal plan or diet because of these concerns. Furthermore, some Hispanic patients have misinformed ideas about the disease. One treatment program surveyed patients and found that 43 percent mistakenly believe that insulin causes blindness (Caballero S13). It is possible that these misguided beliefs stem from the mixing of modern, Anglo-American ideas with the traditional folk beliefs of Latinos.

While a vast majority of Hispanic-Americans do not fully rely on the beliefs and values of traditional folk medicine, or *remedios caseros*, it is essential to understand this cultural background when considering health and Hispanic individuals. The cultural presence of ethnomedicine and traditional healing are both alternative forms of medicine, mostly documented in Mexicans (Pérez-Escamilla, Garcia, and Song 10). Ethnomedicine has been defined as “the study of traditional medical practice...concerned with the cultural interpretation of health, diseases and illness...a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment” (Williams). Traditional healers, or *curanderos*, use “intuition, sensing, [and] feeling the person's vibration” to diagnose and interpret illness, with treatments including herbal teas, herbal baths, counseling, massage, rituals, and prayer (Pérez-Escamilla, Garcia, and Song 10). According to Rochelle Kelz, Hispanics can be classified into three general classes when it comes to traditional folk healing. There are conservatives, who retain

strong social and cultural ties to their country of origin, maintaining strong beliefs in traditional folk beliefs and practices. Magic and religion often have importance in their daily lives. On the other end of the spectrum are the highly assimilated, who rely almost entirely on modern medicine, avoiding traditional healing techniques. Many Hispanic-Americans can be classified within the moderate transitional group, which is characterized by a heterogeneous mixture of traditional folk beliefs and Anglo-American traits (18).

All *remedios caseros* are used to treat minor illnesses and are especially helpful when medical care is limited. There are many names that encompass this general field of traditional folk medicine. Within each Latino or Hispanic subgroup there are certain types or names. *Curanderismo*, simply lay or folk healing, is the prevalent term in Mexico and much of Latin America. In Brazil and Cuba, it is *Santería*, a religion based on belief in the power of the saints to speak and cure through the living (Juckett 50). In Puerto Rico, *espiritismo*, or spiritualism, relies on the belief that evil spirits cause illnesses and emotional or social problems. Besides *curanderos*, *yerberas* (herbalists), *hueseros* (bone setters), *parteras* (midwives), and *sobadores* (similar to massage or physical therapists) are all important individuals in traditional medicine. *Brujos* or *brujas* (witches, witchdoctors, etc.) may be needed for diseases believed to have been caused by sorcery.

However, *curanderos* are the main healers sought after by Hispanic individuals. They are especially important in their ability to distinguish between hot and cold illnesses, a characteristic of traditional Hispanic medicine. This idea stems from the ancient belief that disease is caused by an imbalance of the body. Cold illnesses are then

treated with hot techniques and vice versa. A few examples of traditional cold illnesses include cancer, colic, indigestion, decreased libido, headache, menstrual cramps, pneumonia, and upper respiratory infections. On the other hand, traditional hot illnesses include anger, diabetes mellitus, diaper rash, gastroesophageal reflux, peptic ulcers, hypertension, *mal de ojo*, pregnancy, sore throat or infection, and *susto* (soul loss) (Juckett 50).

*Susto* and *mal de ojo* represent illnesses that are interpreted differently due to cultural predispositions. In modern Anglo-American medicine, it is recognized that posttraumatic stress disorder causes symptoms of posttraumatic shock or anxiety. However, in traditional Hispanic medicine, this type of shock or anxiety is caused by *susto*, or the loss of one's soul following a tragic event (Juckett 50). Similarly, the *mal de ojo*, or evil eye, is a phenomenon that can explain illness for Hispanic individuals. When someone casts an envious glance (*mal de ojo*) on a person, especially a child, they have placed a hex on that individual. This may lead to illnesses and problems thriving or developing. A common and simple way to remove the hex is to touch the individual. There are many traditional Hispanic illnesses and specific folk remedies or treatments. Several of the most common ones are summarized in Table 1 on the following page (22).

It is also important to analyze the cultural values Hispanics view as important when it comes to health care. First of all, there is the idea of *simpatía*, or kindness. Encompassed within this value is the idea of politeness and conflict avoidance (Juckett 51). *Personalismo* is the value of friendliness. Hispanic individuals value personal connections and developing relationships. Physicians can achieve this by asking the patient about his or her family, providing close physical contact (handshakes—

Table 1: Traditional Latino Illnesses

<i>Diagnosis</i>	<i>Characteristics</i>	<i>Traditional Treatment</i>
Ataque de nervios (“nervous attack”)	Intense but brief release of emotion thought to be caused by family conflict or anger	No immediate treatment other than calming the patient
Bilis (anger)	Outburst of anger	Herbs, including wormwood
Caida de la mollera (“fallen fontanel”)	Childhood condition characterized by irritability and diarrhea thought to be caused by abrupt withdrawal from the mother’s breast	Holding the child upside down or applying gentle pressure to the hard palate
Empacho (indigestion)	Constipation, cramps, or vomiting thought to be caused by overeating	Abdominal massage and herbal purgative teas; an egg passed over the abdomen supposedly “sticks” to the affected area
Fatiga (shortness of breath, fatigue)	Asthma symptoms and fatigue	Steam inhalation and herbal treatments, including eucalyptus and mullein (gordolobo)
Frio de la matriz (decreased libido)	Pelvic congestion and decreased libido thought to be caused by insufficient rest after childbirth	Damiana tea, rest
Mal aire (“bad air”)	Cold air that is thought to cause respiratory infections and earaches	Steam baths, hot compresses, stimulating herbal teas
Mal de ojo (“evil eye”)	A hex cast on children, sometimes unconsciously, that is thought to be caused by the admiring gaze of someone more powerful	The hex can be broken if the person responsible for the hex touches the child, or if a healer passes an egg over the child’s body; the egg is then broken into a bowl of water and placed under the child’s bed; child may wear charms for protection
Mal puesto (sorcery)	Unnatural illness that is not easily explained	Magic
Pasmo (“frozen face”)	Temporary paralysis of the face or limbs, often thought to be caused by a sudden hot-cold imbalance	Massage
Susto (“soul loss”)	Posttraumatic illness (e.g., shock, insomnia, depression, anxiety)	Barrida ritual purification ceremony (herbs used to sweep patient’s body) repeated until the patient improves

Adapted from “Caring for Latino Patients” (Juckett 50)

—hugging, etc.), and showing a genuine interest in the patient’s life. *Respeto* stands for respect and is especially important when physicians treat older patients.

Older patients should be addressed accordingly, using *señor* or *señora* while avoiding the use of their first names. In accordance with *respeto* is the idea of *modestia*, or modesty. Some Latinos may be conservative and physical exposure should be both negotiated and limited. *Familismo* is the concept that loyalty to one’s extended family comes before individual needs. A patient’s health decisions often involve extensive discussion with their extended family rather than making an individual decision. *Machismo* is the idea of manliness. Men are expected to take care of and provide for their families. This value can lead to delayed health care for men, as they may see pain as a sign of weakness and attempt to endure their physical ailments. On the other hand, if reminded that their health is associated with their ability to provide for their family, they may be more likely to get care earlier. *Fatalismo* is the idea of fatalism and is deeply connected to religion. This is the belief that individuals cannot alter their health or disease because it is already predestined. This can severely inhibit patients from both seeking treatment and from adhering to a treatment plan. In one study, 78 percent of surveyed Hispanic patients believed they were suffering their disease because it was God’s will. Of those patients, 81 percent believed that only God could control their disease (Caballero S13).

Discussing the practice of traditional folk healing and common cultural values does not mean that all Hispanic patients will display these traditional beliefs and techniques, but it is important for physicians to be aware of them. The presence of these beliefs, or lack thereof, may be affected by education, socioeconomic class, and

acculturation. Within first generation immigrants, these traditional beliefs are more likely to be present, whereas second or third generation Latinos may not subscribe to the same values and beliefs. It is smart to ask Hispanic patients if they use alternative therapies in conjunction with modern medical techniques. Physicians must be sensitive to Latino and Hispanic cultural beliefs (Juckett 48).

Now that a thorough overview of health and how it relates to Hispanic individuals has been established, it is possible to analyze Hispanic health literacy levels in relation to their non-Hispanic white counterparts. Understanding the cultural and traditional values, beliefs, and ideas that shape Hispanics' perceptions about health care allows a more thorough understanding of why there is such a large disparity between this ethnic group and their counterparts. To begin, a survey cited in Richard Safeer and Jann Keenan's "Health Literacy: The Gap Between Physicians and Patients" found that of two hospital clinics surveyed, only 35% of English-speaking patients had fair to poor health literacy whereas 62% of Spanish-speaking patients fell within this range (463). These Spanish-speaking patients were LEP patients. The Office of Health and Human Services, Office of Civil Rights, defines LEP individuals as "those who cannot speak, read, write or understand English at a level that permits them to interact effectively with health care providers" (Zun, Sadoun, and Downey 912). Unfortunately, LEP individuals are often excluded from programs and often experience delay or denial of health care services based on inaccurate or incomplete information on forms because they do not understand the material. Spanish-speaking Hispanics are less likely to have a usual source of care in comparison to English-speaking Hispanics. Further consequences of inadequate

communication between LEP patients and physicians include ethical concerns and impairment of the exchange of information and communication between the patient and physician.

LEP respondents in a study examined in Elisabeth Wilson's "Effects of Limited English Proficiency and Physician Language on Health Care Comprehension" were more likely to report problems understanding medical situations, confusion about medications, trouble with medication labels, and bad reactions to medications (3). Nearly half of LEP respondents in this study reported difficulty understanding a medical situation, while over a third reported problems with using medication. LEP respondents were significantly more likely to be older females with low levels of education and income, underinsured, and short-term residents of the United States. Furthermore, LEP status is often associated with insurance, income, race and ethnicity factors that have been shown to increase the risk for health disparities (Wilson et al. 4).

Another research study from the 1990's was conducted within two urban public hospitals—Atlanta and Los Angeles—in which researchers administered the TOFHLA to patients in both Spanish and English to test their health literacy levels. Approximately 35% of the English participants had inadequate health literacy, while more than 61% of the Spanish-speaking participants had inadequate health literacy. Their research supported the conclusions outlined in the previous study. On average, Spanish-speaking patients have more inadequate health literacy levels than their similar English-speaking counterparts. LEP and language discordance between patients and physicians have been shown to result in poor comprehension, poor interactive communication, and patient dissatisfaction (Robert Wood Johnson Foundation). Poor patient-physician

communication contributes to poor health care quality. In fact, the research team of Zun, Sadoun, and Downey found that non-English speakers were less satisfied with their care in a study within emergency departments (ED) and stated they were less likely to return to the same ED. The most common complaint of Spanish-speaking patients in the ED was a “failure on the part of the medical staff to fully appreciate the presenting complaints” (913).

The inadequate levels of health literacy, the language barriers, and the dissatisfaction with the patient-physician relationship lead to even further problems with LEP patients. These factors can result in serious harm for Spanish-speaking patients. A study examining adverse events in six different American hospitals found that 49.1% of events experienced by LEP patients involved physical harm whereas only 29.5% of those experienced by English-speaking patients involved physical harm. Over half of the time, adverse events resulted from communication errors between LEP patients and their providers, compared to only 1/3 of the time for English-speaking patients. Furthermore, Spanish-speaking patients have a “great deal of trouble understanding medication use instructions” (Dilworth, Mott, and Young 2). Almost half of the patients studied felt that the side effects of their medications were not explained fully to them, while only 14% of non-Spanish-speaking patients felt the same way. If there is miscommunication about medicines, serious injury or death can occur. A patient may under-dose or overdose, take their medicine at the wrong time, take their medicine with the wrong foods or drinks, etc. Depending on the drug prescribed, these mistakes could be benign or lethal.

### *Barriers to Care; Inadequate Health Literacy*

Hispanic-American patients suffer many barriers to adequate health care, leading to inadequate health literacy. Largely these include language differences, lack of insurance, different cultural beliefs, illegal immigration status, cultural mistrust, and illiteracy. A more specific barrier to proper health care may be traditional healing. While traditional folk medicine is often harmless and may be used in conjunction with modern medical techniques, subscription to traditional practices can become a barrier to adequate health care. Naturally, there is a predisposition to seek alternative care first, such as self-treating or requesting the help of family, a friend, or a *curandero*. This predisposition is even stronger in immigrants, who have limited access to health insurance and education upon arriving in America and must resort to these types of traditional medicine. They may have retained deeply rooted cultural beliefs about origins of health and disease, which further prevents them from seeking out medical help in clinics or hospitals.

In many instances, Hispanic patients do not largely engage in preventive medicine. If they feel fine and are without pain, then they assume they are healthy. This can be a problem when failure to diagnose diseases early leads to more severe consequences and disease progression. One specific example where this is especially a problem is within neonatal care. Often, traditional Hispanic women do not seek out care during their pregnancy unless they experience severe symptoms. This delay may lead to fatal consequences for the baby (Kelz 11).

Another common barrier to care is lack of citizenship. Many LEP Hispanic patients seen in clinics may be noncitizens. Non-citizenship status of Hispanic immigrants leads to program eligibility barriers, as well as a fear of deportation or stigma.

It is possible that one of the problems for Hispanic patients is the cultural barrier. One study found that cultural stigmas prevent women, especially, from being tested and getting care. The idea of *machismo* and prevalence of gender inequalities in traditional Hispanic culture “may play a role in Latina’s self-efficacy to be conscious of her risk and take measures to find out if she is [HIV] positive” (Pérez-Escamilla, Garcia, and Song 9). In a traditional, patriarchal culture, a woman’s sense of self-efficacy is discouraged or even stifled and so presents obstacles in the United States in preventive medicine.

Obviously one of the largest problems facing LEP patients and decent health care is the language barrier. Language barriers decrease access to primary and preventive care, impair patient comprehension, decrease patient adherence, and diminish patient satisfaction. According to one researcher, “language barriers may be as important as reading difficulties for Spanish-speaking patients” (Wilson et al. 1). A specific problem identified is false fluency, where “physicians mistake the meaning of a Spanish word because of unfamiliarity with cultural or linguistic subtleties” (Juckett 48). This miscommunication could possibly lead to severe consequences, depending on the word or phrase that is misinterpreted by the physician. Furthermore, one study set out to examine the effect of health literacy on patient-physician communication and how it varies with language concordance and/or type of communication among both English and Spanish-speakers. From a sample size of approximately 770 patients, 30% reported poor receptive communication, 28% poor proactive communication, and 56% poor interactive communication (Sudore et al. 399). Receptive communication is defined as unidirectional, physician to patient. Proactive is also unidirectional but

patient to physician communication. Interactive is bidirectional communication. LEP was found to be associated with poor interactive communication.

The study also analyzed the effect of the type of communication. Spanish-concordant patients are defined as Spanish-speaking patients that interacted with Spanish-speaking physicians. Spanish-discordant refers to Spanish-speaking patients who interacted with English-speaking physicians, requiring the use of interpreters. The results of the study indicated a high frequency of poor interactive communication among Spanish-concordant participants with limited health literacy. It is possible that the physicians tried to spend their time providing clear explanations instead of engaging in a more interactive conversation. For Spanish-concordant patients, limited health literacy was found to be a barrier to proactive and interactive communication; however, adequate health literacy can facilitate good communication with a Spanish-speaking physician. Unfortunately for Spanish-discordant patients adequate health literacy was unable to compensate for poor communication within all three domains (Sudore et al. 400). As a result, adequate health literacy can only act as a buffer against poor patient-physician communication when the two speak the same language.

There are a few studies that show variable reasons for difficulties for LEP patients. One study tested the English-language competency of self-declared English-speaking Hispanic patients through the use of the REALM and the S-TOFHLA (Zun, Sadoun, and Downey). Most of these patients did not proficiently demonstrate the English-language skills necessary to communicate within the health care environment. Many stated they were competent in the English language but failed to pass a health literacy English-language exam. So it is possible that even Hispanic patients who claim to

speaking English will undergo difficulties in the health care setting, undermining their English capabilities. Based on another study, a 2001 California Health Interview Survey, it was estimated that close to half a million Hispanic immigrants living in California sought health care in Mexico instead of America (Pérez-Escamilla, Garcia, and Song 7). Dominant factors encouraging this phenomenon include lack of insurance or citizenship, amplifying the obstacles that limit health care access in the U.S. for LEP immigrants.

There are also problems present within the pharmaceutical setting. The pharmacist has a very important role and can make a profound impact on the patient's medicinal use and understanding. Research suggests that pharmacists lack the skills necessary to counsel Spanish-speaking patients. In one study, 95% of pharmacists reported "not knowing any Spanish" or "knowing a few words" of Spanish despite the fact that 48% of them described a "perceived need for Spanish in their practice." In order to overcome this problem, pharmacists reported communicating nonverbally (66%), writing directions in Spanish (30%), referring the patient to a Spanish-speaking employee (17%), or actually communicating in Spanish (11%). LEP patients seem to have decreased access to pharmacy services and experience perceived discrimination. Even with bilingual staff, pharmacists reported that English-speaking patients received better counseling compared to Spanish-speaking patients (Dilworth, Mott, and Young 4). Language becomes a communication barrier, with patients experiencing difficulties understanding their medications in a pharmaceutical setting. Unfortunately, the consequence of these barriers is a large disparity in the quality of care that Latino patients receive in comparison to other racial and ethnic groups.

### *The Use of Interpreters in Health Care*

The use of professional interpreters is often introduced in order to overcome a few of these barriers to adequate health care for Hispanics. LEP Hispanic patients face numerous problems in health care settings, primarily due to cultural and language barriers. However, a serious problem manifests in the fact that many health care businesses lack trained interpreters, leading to reliance on bilingual staff or even children of the patients (Juckett 48). Such interpreters can result in miscommunication, but if they are well-trained medical or professional interpreters, communication can be improved between Spanish-speaking patients and physicians. In the study “Language Barriers and Illiteracy Can Affect Patient Health Care,” researchers found that only 38% of Spanish-speaking participants without an interpreter rated their understanding of the disease as good to excellent, whereas 67% of Spanish-speaking participants with an interpreter rated their understanding of the disease as good to excellent.

However, another study concluded that when patients and physicians do not speak the same language, adequate health literacy cannot function as a buffer even with the presence of a professional medical interpreter (Sudore et al. 400). These researchers asserted that in a clinical setting with an interpreter, physicians are less likely to engage in interactive, patient-centered communication with Spanish-speaking patients. Despite the findings of this group, many researchers agree, “there is a need for the more liberal use of [professional] interpreters” (Zun, Sadoun, and Downey 914). Untrained interpreters can lead to many mistakes such as inaccurate translation, misleading the patient, omissions, additions, condensation, or substitution. Family members should not be used as interpreters. If patients provide their own familial interpreters it may actually

be violating Title VI of the Civil Rights Act of 1964. According to the article, “Title VI of the Civil Rights Act of 1964 Consequences of Non-Compliance,” “this law prohibits federal financial assistance recipients from discrimination in their subsidized programs or activities based on race, color, or national origin” (Adelson). Essentially, if a patient is receiving federal money, grants, subsidies or any type of government assistance, this law applies to them. This law encompasses LEP Hispanic patients, as language-based discrimination equates with national origin discrimination. As an example of what can happen when this law is violated, Adelson uses a true case story:

Paramedics responded to an emergency call involving an 18 year-old man who spoke primarily Spanish and needed medical attention. The paramedics had no Spanish-language skills or training to enable them to communicate with him. The federally subsidized hospital that the paramedics worked for did not have a trained interpreter available to assist them. The paramedics misunderstood what the man told them and provided inappropriate emergency care that eventually left him a quadriplegic. He and his family filed suit and settled their case for \$71 million.

As demonstrated by this example, the use of non-professional interpreters can be dangerous for both patient and provider. Adelson understood that professional interpreters can be costly, the cost pales in comparison to a possible \$71 million legal fee. Unfortunately, a study found that only 26% of Spanish-speaking patients used an interpreter. Of that amount, approximately half of those interpreters were physicians and nurses, while only 12% of those interpreters were professionals (Zun, Sadoun, and Downey 915).

It is evident that there are many barriers to proper health care access for Hispanic-Americans. It is absolutely essential to identify these barriers and problems so that progress can be made to better the situation. The next chapter will explore improving health literacy and health care access of this group.

## CHAPTER THREE

### Improving Health Literacy and Health Care

#### *Identifying Patients with Limited Health Literacy*

It is imperative to realize that health literacy is not only the problem of the patient. Both the provider of the patient and the overall health care system share this problem. It is extremely important that health care workers are aware of patient health literacy so that they can mold appointments and education materials to the needs of patients with any level of health literacy. This is the starting place of improving health care within the community and ultimately the nation—first recognizing the health literacy status of each individual patient, specifically those of low health literacy. It is not likely that patients will admit they do not understand nor that they believe they have inadequate health literacy levels. In fact, one study found that the majority of patients interviewed believed that they read “well,” despite having low health literacy (Safeer and Keenan 464). For this reason, physicians and nurses cannot solely rely on patients to provide accurate information pertaining to their health literacy.

However, studies have also shown that physicians are often unable to identify properly the levels of their patients. A study conducted by Safeer and Keenan attempted to find the accuracy of the abilities of physicians to measure a patient’s health literacy levels. Medical residents classified only 10% of their patients as having inadequate health literacy, whereas more than one third of the patients constituted this group. It was found that most physicians attempt to ascertain their patient’s health literacy status by asking for the highest level of education they have reached. Unfortunately, this information is

rarely an accurate indication of their ability to navigate the health care system, as the health literacy level of a patient is often lower than the highest level of education they have achieved (Safeer and Keenan 464).

Instead of asking for the education level of patients, health care workers should watch for certain behaviors that may indicate inadequate health literacy skills. Safeer and Keenan list numerous suggestive behaviors, which include: asking staff for help; bringing along someone who can read for them; an inability to keep appointments; making excuses, such as “I forgot my glasses” when asked to read information; following medication incorrectly; not following medical instructions to alleviate problems; postponing decision making, saying things such as “I’ll do it when I get home”; and mimicking the behavior or actions of others (464). While watching for these behaviors would be a step in the right direction for health care workers, the most accurate way to ascertain a patient’s health literacy level is through health literacy tests, specifically the Newest Vital Sign (NVS).

In a clinical setting, if time permits and patients are willing, the NVS is one of the best ways to obtain a better understanding of a patient’s health literacy. The NVS is recommended over other assessments outlined in the first chapter due to its practicality in a fast-paced clinical or hospital environment. It is a rapid test, taking on average a total of three minutes to complete. It is available in both Spanish and English. It spares patients having to demonstrate potential inadequate reading skills to their interviewer, as they would have to do with the REALM assessment. The common stigma associated with illiteracy does not appear to translate to health literacy. Furthermore, in a study it was

found that administering the test incurred very minimal harmful effects for patients (VanGeest, Welch, and Weiner).

A common objection to daily health literacy testing is the worry that testing may elicit shame from patients. This study sought to find if there was any validation to this objection. Patients were given the NVS and then asked to complete a reaction survey. More than 99% of patients reported that the NVS did not induce feelings of shame (VanGeest, Welch, and Weiner 402). Furthermore, 97% of the patients found that participating in the test was not difficult and that they would recommend clinical screening for health literacy if it could help doctors improve care, even those with the lowest levels of literacy. Not a single patient believed that screening was a waste of their time.

A further study sought to find if the NVS would incur any significant time, costs or utilization disadvantages to implement in the daily practice. Researchers wanted to see if the NVS would actually be a drain on resources to implement, proving to be a burden rather than an advantageous practice. It was found that the time to hand out the NVS and explain instructions to the patients added less than 30 seconds of additional time to the appointment (Welch, VanGeest, and Caskey 285). Patients completed the NVS while waiting for their physician to enter the room, during a time in which they would normally be waiting. It took on average less than two minutes to score the NVS and enter the score into the patient's record. Furthermore, physicians reported a two-to-five minute increase in time during office visits in their efforts to tailor communication to the patient's literacy level and checking for understanding. Thus researchers found that the NVS incurred no significant time increase in the daily clinical appointment.

As for costs, it was found that in order to start administering the NVS regularly it would cost approximately \$8000 for this specific clinic consisting of 45 intake and clinical personnel. This includes the cost of physician and staff training, printing of training materials, and printing of the NVS screening instrument (Welch, VanGeest, and Caskey 285). During staff training, health care workers admitted that screening increased their awareness of the importance of health literacy and helped them communicate better with each patient. The majority of physicians, nurses, and staff interviewed noted their own inability to identify correctly individuals with limited health literacy without the help of the NVS. Furthermore, approximately two thirds of the staff felt that identifying patients' health literacy status with the NVS improved the quality of care they were able to deliver. However, in a follow-up survey, it was found that there was a tendency to revert back to normal (preintervention) care processes and behaviors (286). Knowing this, it would be important to schedule refresher training if clinics started to implement the NVS within their daily routines.

#### *Physician-Patient Interaction: Verbal Communication*

Physicians should first focus on identifying properly the health literacy status of the patient. With this information in mind, physicians can now tailor appointments to each individual patient, keeping in mind their health literacy level. It is known that patients with low health literacy have a more difficult time understanding verbal information (Cornett). On average, only about half of the information verbally provided by the physician may be retained. Despite this low retention rate, most patients are uncomfortable or ashamed to ask the physician to repeat or clarify the information. Therefore, if a patient does not ask questions, it should not be automatically assumed that

they understand the information presented to them. They simply may be too embarrassed to ask clarifying questions. Generally, during a conversation with a patient, physicians should speak slowly and limit the amount of information given to patients in one sitting. If a physician must provide a lot of information, it is a good idea to provide a short list of the most important points. This type of organization helps to break down more complex instructions so that the patients can take away the main ideas of the information. Physicians should also avoid abstract words or general principles; two concepts with which limited health literacy patients often struggle. For example: “If a patient is told to take medicine twice daily, but not at specific times, the patient may not know when to take it, and decide to take two tablets at the same time so as not to forget the second dose of the day” (Cornett). This kind of incorrect administration of medication can be avoided by knowing how to properly present information to patients properly.

More specifically, one of the most important methods for improving verbal communication between the physician and their limited health literacy patients is called the teach-back method, a method cited by researchers Safeer and Keenan, Sudore, Juckett, Golova, and Cornett. The method is as simple as its title. Physicians foster an environment of interactive health care by asking their patients to “teach-back” what they have just been told. For example, a physician may explain how to use a medication, then ask the patient to repeat back to them how they should take their medication. In this way, physicians are ensuring that what they have explained to their patients has been both learned and retained. Cornett provides several example phrases or questions that physicians could use while employing the teach-back method. For example, the following phrases would help foster an environment of interactive learning: “Please tell me in your

own words what we have discussed.” “What might you tell your family or a friend about your condition?” “Some people have problems remembering to take their medicine. If this happens, what will you do?” “What would you do if \_\_\_\_\_ happens?” (Cornett).

There are a few general problems that physicians may encounter while assisting limited health literacy patients, including problems with referrals, medication errors, and difficulty with forms. First of all, when it comes to physician referrals, any type of referral can be a problematic experience for individuals of low health literacy.

Oftentimes, patients may be given a referral form and/or a number to call in order to make a new appointment for either a test, another consult, a treatment, or a procedure.

Upon making a new appointment, the patient may have to find directions to the new clinic or hospital, a task that can be difficult for those with inadequate literacy skills.

Once at the new clinic, hospital, or center the patient will most likely have to fill out further paperwork or registration forms, which again is a task that those with inadequate literacy find challenging.

In order to combat creating these potential problems, a

physician should include very clear and simple instructions for the referral. He or she should then review the instructions with the patient, perhaps through the teach-back

method, and ensure that the patient is able to understand what is required of them. If

possible, physicians should include a map or simple directions on these instructions,

limiting the number of items they must find out on their own. The best option, but least

practical, would be for the physician to call on behalf of the patient to set up the referral appointment, ensuring it is made correctly.

Second, patients of limited health literacy often have medication administration errors. If parents must provide medication to their children, this can become a serious

concern to know how to properly administer medicine. Recently, within pediatric outpatients the most harmful, yet preventable, drug effects are due to errors within medication administration (Yin et al. 181). Within one study, researchers found that at least half of the participating parents made errors while dosing liquid medication for their children. This study tested the dosing accuracy for limited health literacy patients with various dosing instruments. The dosing instruments tested included two dosing cups—one with black printed calibration markings, the other with clear etched markings—, one dropper, one dosing spoon, one oral syringe, and one oral syringe with bottle adapter. Both of the cups resulted in poor dosing accuracy, of which 99% of those errors were due to overdosing (183). It was found that the oral syringes were a favorable instrument of health care providers when they want to ensure maximal accuracy (181). This study found that health literacy is significantly related to dosing errors and that parents are at a high risk for dosing error with cups. Health literacy plays an important role in dosing accuracy, a fact that all physicians should take into account while providing medication to patients of limited health literacy.

Finally, physicians may often find that their patients of inadequate health literacy have difficulty filling out registration forms, consent forms, or health histories. In order to minimize errors, all forms should use simplified language, avoiding as many specialized, medical terms as possible while maintaining an easy-to-read format. Furthermore, if a patient is struggling to complete forms, staff should offer to help them in a confidential manner. It also may be helpful to encourage patients to bring certain forms already completed to the appointment and to write down any questions prior to meeting with their doctor. Physicians and staff should always encourage patients to come prepared to their

next appointment with any concerns, information, or questions. Patients should be instructed to bring a prepared list of any medications, test results, or pertinent health care records to their appointment in order to provide detailed information for their provider. At home, they could ask a friend or family member to help them complete this form, avoiding any risk of embarrassment within the social setting of a clinic. If this practice could be implemented, it is helpful to limited health literacy patients to keep a running list of their medications for them at the clinic. In this way, the patient does not become confused trying to figure out their medications, and their physicians can access their medicinal list within their personal records.

#### *Physician-Patient Interaction: Written Communication*

Interestingly, it often seems that reading and comprehension skills of patients are overlooked when developing health education materials (Badarudeen and Sabharwal 2573). Patient education materials are almost always written at a level too difficult for the majority of the population to read and understand properly. In order to produce helpful education materials that pertain to a certain community, it is necessary first to ascertain the literacy of the target population. The approach should be the same as previously outlined, by using health literacy tests, specifically the NVS, to obtain a snapshot of the community's health literacy status. By knowing this information about the target population, clinics and hospitals can reevaluate their education materials and change them to reflect the literacy levels and needs of their patients.

A general rule to follow would be to write patient education materials at a 6<sup>th</sup> grade level or lower, including pictures and illustrations (Safeer and Keenan 463). While this may sound demeaning to patients, it has been found in numerous studies to be the

level at which the majority of the population can properly understand health education materials. One specific study demonstrated the benefits of such materials by finding that simplifying material to a 6<sup>th</sup> grade level or lower resulting in an increase in pneumococcal vaccination rates (466-467). Generally speaking then, information should be simple and clear information, with little to no medical terminology. It is important, specifically to those with inadequate health literacy, to provide, show, or draw pictures to enhance their understanding. Researchers have agreed upon the use of images and illustrations to enhance education materials for limited health literacy patients. Photos should be used to support key verbal points spoken by a physician or nurse. These should be photos that are simple and concrete rather than complex, avoiding unnecessary details (Cornett). After communicating verbally, physicians and staff should provide written information, as it is “vital in reinforcing verbal communication” (Badarudeen and Sabharwal 2573). One researcher created quick-reference tables as guidelines for improving the readability and comprehension of written text in patient education materials. Furthermore, another table was created to outline how to improve visuals and illustrations in order to enhance the comprehension of education materials (Golova 2577). Both tables are provided on the following page (page 42).

Table 2

<i>Guidelines for Improving Readability and Comprehension of Written Text in Patient Education Materials</i>
Limit the number of messages
Use short sentences
Use conversational style as if you are talking to someone
Limit medical jargon
Avoid ambiguous words
Select familiar words and use them consistently
Use analogies that are familiar and culturally appropriate for the target audience
Instead of real numbers, when conveying statistics use words like “half” or “one-third”
Avoid symbols and quotation marks

Adapted from “Literacy Promotion for Hispanic Families in a Primary Care Setting: A Randomized, Controlled Trial” (Golova et al. 2577)

Table 3

<i>Guidelines for Visuals and Illustrations To Enhance Comprehension of Patient Education Materials</i>
Limit the number of messages portrayed in a single image to one
Limit details and keep the illustrations relevant
Line drawings are better than real photographs
If real-life photographs are used, care should be taken to make sure the background does not contain any distractions
Images should be culturally appropriate
Images should be placed right next to the relevant text
Unless relevant, use black and white drawings as opposed to color drawings
Images of internal body parts should be accompanied by an image that shows where in the body that particular body part is located
Provide appropriate captions and highlight area of interest in the image with the use of circles and arrows

Adapted from “Literacy Promotion for Hispanic Families in a Primary Care Setting: A Randomized, Controlled Trial” (Golova et al. 2577)

Another widely used guideline for creating appropriate patient education materials is the Pfizer Principles for Clear Health Communication (Cornett). This guideline is a set of five different elements meant to guide clinics and hospitals in creating efficient education materials for their patients. The first element to clear health communication is to explain the purpose and benefit of the document from the patients' point of view, since they will be the ones reading the document. Second, education materials should actively involve the patient learning. Creators of education materials should have an idea about the typical behaviors and actions that their recipients take. Using this information, the document should focus on and describe useful and realistic steps that the learner could take. Third, the material must be simple to read. Once again, simple, common language is necessary. Pfizer encourages employing an active voice and using headings and subheading to organize the key messages logically. Fourth, the material should look easy to read. White space is important and should contrast sharply with the font, designating direct attention to the key points of the document. Last, visuals should be selected based on their ability to both clarify the written material and their ability to motivate the learner (Cornett).

#### *Specific Techniques for Bilingual Physician-Patient Interaction*

Most of these general techniques and methods also apply towards the Hispanic patient of limited health literacy. For example, the teach-back method is extremely beneficial in interactions with Hispanic patients as well. However, there are particular techniques that should be set apart and employed specifically for interactions with Hispanic patients. The Latino Health care Taskforce identified nine large-scale principal strategies that could help improve Latino health care and health literacy. The first element

to this plan is to create a national strategic action plan for Latino health improvement. A plan of this caliber would require acknowledgment from the President and would span critical federal agencies within the U.S. Department of Health and Human Services, including the National Institutes of Health, Agency for Health care Research and Quality, Health Resources and Services Administration, Centers for Disease Control and Prevention, Bureau of Health Professions, Centers for Medicare and Medicaid Services, and Administration on Aging (Valdez and de Posada 8). This action plan would also involve other organizations, such as the U.S. Census Bureau and the Departments of Labor, Commerce, and/or Immigration. The goal of this strategy is to analyze and restructure priorities of these organizations in order to better meet Hispanic health care needs.

The second strategy is to expand market-based options to reduce the number of uninsured patients. This would require state and federal governments to implement new or different health plans. The Latino Health care Taskforce outlined a few possible options to accomplish this strategy. The government could offer tax credits for small employers or for individuals without access to employer-sponsored coverage. Health savings accounts could be stimulated in order to help individuals and small business employees afford insurance coverage (Valdez and de Posada 8). Most importantly, a “one-stop shopping center” for health care for Latinos should be created. This would include a phone number and website that provide basic health care information in both Spanish and English. It could also include information on available health care or insurance programs for Hispanics as well as local community health centers.

The third strategy is to seed-fund five Latino health empowerment centers. Seed-funding is when an investor purchases part of the business, or center in this instance. There are regional, national, and university-based Latino Health Empowerment Centers in areas with large populations of Latin Americans. These centers are federally seed-funded and can work to provide assistance to communities, businesses, organizations, or universities in order to identify, evaluate, and disseminate the most efficient practices for improving Latino health care (Valdez and de Posada 9). The fourth strategy is to implement community-based initiatives to boost enrollment in federal health programs for children. This strategy strives to improve child health care coverage and access by creating new or modifying existing youth health care programs. This would also involve identifying and eliminating barriers that prevent Latino youth from receiving proper health care.

The fifth strategy is to establish a national multimedia Hispanic health literacy initiative. The Latino population needs to be educated about “basic health literacy, appropriate health behavior and effective navigation of the health care system” (Valdez and de Posada 10). The Latino Health care Taskforce proposes creating several centers for research that focus on developing programs and strategies designed to target Latino populations. These research centers should have several different divisions or aspects. There should be an entertainment industry outreach, which essentially serves to utilize media forms to provide education to audiences. Marketing on such bilingual broadcasts should focus on providing information about preventive health care methods and how to reduce certain risk factors for common diseases. There should also be a news media outreach system that utilizes “journalistic approaches to influence information-seeking and

utilization of health care services to increase community-based screening and immunization for disease prevention, and to reduce incidence of disease progression among audience members.” In order to target young adult and youth audiences, there should be Web-based media, used to provide entertaining information promoting health and disease prevention. Last, there should be national dissemination of innovations, including the “technical information, case studies, and summaries of model programs and approaches for culturally appropriate, consumer-driven health information” (Valdez and de Posada 10).

The sixth strategy is to expand initiatives to ensure a diverse health care workforce. The focus should be on increasing opportunities for underrepresented minority students in health care fields, such as nursing, health management, and other health programs. This may also involve increasing financial aid resources to minority students, such as grants, loan programs, scholarships, and/or paid on-campus job opportunities. These resources should be different than simply student loans. The seventh strategy is to embark on medical malpractice reform. Due to the high cost of medical malpractice insurance, physicians and health care workers are discouraged from practicing in underserved areas, where there are often large numbers of Latinos.

The eighth strategy is to invest in and create health care information technology. Health care information should be more accessible, safer, and more cost effective. Electronic health care support systems should be implemented to increase the availability of health care information technology to patients. Last, the ninth strategy is to begin benchmarking progress in Latino health. This is a critical aspect required to improve progress towards bettering Latino health care. Fact sheets should be published

periodically identifying various trends while research should be conducted analyzing current methods, reporting on the efficacy of practices and techniques.

There is also a lot that can be done to improve Hispanic patient visits on a smaller scale. First of all, limited-English proficiency (LEP) patients should be identified as a high-risk group so that physicians and nurses know they require special attention. This is one of the most important actions that can be taken to help LEP patients. It is similar to preventive medicine in that it takes steps to ensure there are fewer problems later. After identification, the best thing a LEP Hispanic patient could be given to improve their health care needs is a bilingual physician. Having a language-concordant physician would provide a significant benefit for LEP patients as they could communicate their concerns or questions in their own native language without fear of miscommunication. Obviously every physician is not going to be natively bilingual. However, in a country in which the Hispanic population is consistently growing, medical schools should begin considering medical Spanish as required coursework. Hospitals, practices, and clinics could look into providing medical Spanish training programs for their physicians after medical school. Language training must be rigorously developed and evaluated, however, to avoid false fluency. False fluency can lead to significant errors in communication. If bilingual physicians are not available, it is recommended to use a professional interpreter to facilitate patient-physician communication. In fact, a more liberal use of professional interpreters overall is needed rather than relying on nonprofessional aid from family or friends of the patient.

Improvement is also needed within the pharmaceutical field. Oftentimes patients leave the doctor's office and make their way to the pharmacy to pick up a prescription.

Pharmacies should also have bilingual staff or at least bilingual materials. It would be extremely beneficial to provide written prescription drug information in Spanish, but the prevalence and ability of this practice varies widely based on geographical location. In a study, researchers actually found that many pharmacists feel that Spanish language courses should be taught in pharmacy school or at least in continuing education classes (Dilworth, Mott, and Young). Furthermore, the majority of these pharmacists wanted to improve their own Spanish-skills. Overall, language discordant pharmacists and physicians should be able to better recognize a patient's language needs in advance of the appointment, so that they can use this information proactively to arrange for a professional interpreter at the appointment.

Language is not the only concern, however, when attending to Hispanic patients. Physicians should also be very aware of certain cultural predispositions that may arise when interacting with Hispanic patients. Physicians that simply learn the language of Spanish are only providing adequate medicine. It is necessary to learn cultural norms in order to better understand a Hispanic patient's attitudes, actions, and beliefs: "for health care professionals to be able to effectively communicate across cultural boundaries, they must have skill, practice, knowledge of the other culture, an ability to be flexible, and a willingness to accept variations" (Kelz 26). Some cultural differences may include Hispanic patients neglecting to ask questions or display fear due to the idea that either signifies a lack of respect and trust for their provider. Another could be the emphasis Hispanics place on family, resulting in a patient's personal health care decision being made after extensive consultation with their extended family. Furthermore, the concepts of formality and authority are important in the Hispanic culture, meaning physicians

should use the “usted” verbal tense when addressing all patients of the same age or older than their selves. The informal “tú” form should only be reserved for children. While many of these cultural predispositions were discussed in chapter two, a few specific ones will be discussed that may have important clinical implications.

First of all, nonverbal cues are very important within the Hispanic culture. A doctor that enters the room and maintains a far distance from the patient, neglecting any sort of physical contact, will be viewed as cold and distant. The patient will have a difficult time trusting this sort of physician. If a physician decides upon some sort of treatment plan without first doing at least a physical examination, Hispanic patients may be less likely to trust their provider. Generally, Hispanic patients trust physicians more that do some sort of test and then arrive at a diagnosis. There are also a few nonverbal cues that may be interpreted differently by an Anglo physician than a Hispanic patient, for example a lack of eye contact. In the presence of an authority figure, Hispanics are often taught to avert their eyes downward, casting their head towards the floor instead of making direct eye contact as a sign of respect. This action should not immediately be perceived as disrespect, dishonesty, or even guilt, despite those natural implications in America’s Anglo-Saxon culture (Kelz 26). Prolonged eye contact may be seen as a sign of anger or defiance to Hispanic patients and so they may not engage in such behavior in order to show respect for their provider.

Second, physicians may run into difficulties when dealing with the concept of time. The Hispanic perception of time may be very different than the Anglo-Saxon perception of time. According to Kelz, time in the United States is divided into two divisions according to noon and midnight, indicated by A.M. and P.M. In Hispanic

culture, time may be divided into four different divisions. Noon and midnight are also acknowledged, meaning *mediodía* and *medianoche* in Spanish respectively. However, time is then further divided into *noche* and *madrugada*. *Noche* refers to the time from sunset to midnight whereas *madrugada* refers to the period between midnight and sunrise. The cultural difference between perception of time can be seen in the common English idea that the “clock runs” whereas in Spanish *el reloj anda*, or the clock walks (Kelz 27).

In general, in interactions with Hispanic patients, physicians can expect to find a more flexible and slower-paced lifestyle with an emphasis on cultivating relationships rather than perfecting efficiency. Family needs take priority over any sort of scheduled appointments and Hispanic patients may arrive tardy to scheduled appointments. Physicians should not lecture such patients but attempt to calmly explain why timely manners in health care are important. It is best to avoid making appointments that are not in the relatively immediate future. Despite the literal translations of the following words, *inmediatamente*, *momentico*, or *mañana* do not normally mean immediately, in a moment, or tomorrow in Hispanic culture. These words can often be used to refer to any sort of time in the distant future. As for prescription medication, it is best to associate the medicine “with specific times such as at mealtime or before going to bed” (Kelz 27). Hispanic patients may be less likely to follow a regiment of taking medication every four hours without some sort of association like this.

Being aware of these cultural predispositions is the first step towards growing a better relationship with Hispanic patients. It is then necessary to take a step further and foster a culturally sensitive environment within the health care clinic, hospital, center, etc.

For physicians, it is important to know that most of the alternative therapies outlined in chapter two are not harmful and can be combined with conventional care. Of course it is important to do research on specific methods to ensure that the alternative treatment is not, in fact, harmful. However, if a traditional Hispanic patient wants to continue undergoing harmless, alternative treatments while still following modern medicinal care, then this should simply be accepted rather than frowned upon. Within the standard appointments, clinics should consider scheduling extra visit time for patients with LEP to ensure they receive adequate attention. It is already understood that they are a high-risk group and so pre-scheduling more time with them could be very beneficial for both the clinic and the patient.

As would be expected, one of the top ways to foster a culturally sensitive environment is to hire bilingual staff and physicians. Better yet, health care centers could hire Hispanic staff and physicians. However, it would also be valuable to encourage existing staff to learn Spanish. There are free or paid Medical Spanish podcasts available to stream or download, online Medical Spanish courses, Medical Spanish courses at local colleges, Medical Spanish dictionaries or books, etc. Any resource could be utilized to aid existing staff to take a step towards interacting with Hispanic patients. Staff should also be educated about the cultural differences between Latinos and non-Latinos. This could be accomplished with training sessions, bulletin boards, over lunch breaks, or during meetings. Another important way to foster a culturally sensitive environment is to offer evening hours and more flexible scheduling. Offering later hours would increase access to care while offering more flexible scheduling would allow more patients to be

seen in a sign-in order rather than during fixed appointments. This would aid with the problems that arise due to the Hispanic cultural perception of time.

Health care centers should post bilingual or Spanish-language signs in order to cater to Hispanic patients. Furthermore, Spanish-language medical handouts and patient forms should also be provided. Within the clinical appointment, the health provider should supply interpretation services for patients with LEP whenever possible. The use of family or friends of the patient as interpreters should be avoided at all costs. If patients are to undergo physical exams that require clothing removal, clinics should provide modest patient gowns to respect the cultural value of *modestia*, or modesty. It would also be a good practice to at least recognize Latino holidays such as Cinco de Mayo, Day of the Kings, etc. (Juckett 52).

Outside of the normal clinical appointment, physicians, nurses, and staff could offer helpful opportunities to Hispanic patients in a variety of ways. Health care workers could help improve English literacy among LEP patients by providing English language counseling and free English books, if possible, or by offering ESL classes at hospitals to provide a forum for health education interventions (Dilworth, Mott, and Young 6). As this may not be feasible, clinics could at least provide information about community ESL classes or counseling, if possible. Hospitals, clinics, communities, or governments should support public health campaigns that target hypertension, diabetes prevention, and weight control for Hispanic-Americans, all high frequency problems for the Hispanic community (Juckett 49).

One of the best things health care workers can do is to foster literacy promotion and/or reading habits of children. Generally, Hispanic children have relatively limited

English language skills in comparison to their non-Hispanic white counterparts. Many grow up in poverty or poorer conditions. As a result, Hispanic children have an increased risk to fail or dropout of school. Studies have shown that “access to reading materials and early age of onset of home reading routines correlated with higher reading scores, higher verbal performance, and better overall school achievement” (Golova 1993). Reading aloud to children at a young age often results in improved reading abilities later in life, improved oral language skills, and improved overall school achievement (1996).

Unfortunately, Hispanic children are at a disadvantage. If their parents are LEP or have difficulty reading, they will be unable to read aloud to their children, undermining their literacy development. Furthermore, if the parents are relatively poor, money will not be spent on buying enriching children’s books but being put towards basic necessities, such as food or rent. The authors of this study found that a “simple, inexpensive, bilingual intervention significantly increased the frequency of joint parent-child reading, the parental enjoyment of reading books with their child, and the number of children’s and total books in the homes of low-income Hispanic families” (Golova 1996). In order to do this successfully, it was important to have handouts and books in bilingual format. In this setting, the pediatricians delivered the intervention, giving the books to the parents while providing other materials such as handouts or advice. This intervention was repeated to parents more than once, reinforcing the idea that reading aloud to children is important. In such instances, the idea was better received and the importance of the action was better translated.

### *Taking Action*

Overall, there are countless ways to improve the health literacy levels and health care access of Hispanic patients. Knowledge of the Hispanic culture is vitally important to understanding these methods of improvement. It is easy to simply list ideas on how to achieve improvement, but infinitely more difficult to put those processes into practice.

## CHAPTER FOUR

### Research Proposal

#### *Personal Background*

In an effort to better understand the difficulty of implementing measures of improvement for Hispanics, I sought out a way to make a difference tangibly in the local community, rather than just write a report over the topic. In the Waco community, there are several Family Health Center (FHC) clinics, which are “nonprofit Federally Qualified Health Center[s] delivering medical, dental and behavioral services to the underserved citizens living in McLennan County, Texas. Most of these patients have little or no access to health care without the Family Health Center” ([www.wacofhc.org](http://www.wacofhc.org)). A large amount of the patients served at FHC sites are Hispanic patients, many of which are LEP-classified individuals. The majority of patients served are assumed to have inadequate health literacy levels, although official testing has not occurred. In this environment many of the problems outlined in these previous chapters can be witnessed, including lack of professional interpreters and more seriously, parents incorrectly administering medication to their children due to comprehension errors.

A proposed research project in this setting would be to verify if there is any correlation between health literacy levels and patients’ missed appointment rates. Researchers would administer health literacy assessments, which could provide an accurate depiction of the health literacy level of each patient to FHC physicians and staff. Knowing this information would allow the clinic to tailor information individually to

patients based upon their health literacy levels, helping both the FHC and the patients. Furthermore, demographic results could provide other answers as to why patients miss scheduled appointments (i.e., due to transportation difficulties, etc.). Knowing this information could allow the clinic to identify reasons for missed appointments so that measures can be taken to prevent these phenomena.

It is expected that researchers would find a correlation between patients' missed appointment rates and their health literacy levels. It would be expected that the lower the health literacy level of a patient, the more likely they are to miss their appointments. By conducting demographic surveys it would be possible to also see other potential covariates. For example, it is assumed that by comparing English-speaking patients with Spanish-speaking patients within this project would show that Spanish-speaking patients are more likely to miss appointments than their English-speaking counterparts.

Based on this information, the following preliminary scientific article demonstrates what a research proposal of this magnitude may look like.

# Effect of Health Literacy on Patients' Missed Appointment Rates

Primary Researcher: Erika Hallak

## SUMMARY

**Background:** In any health care setting, the phenomenon of missed appointments is important, as is the health literacy status of patients. There is little research on whether or not health literacy levels may correlate with the missed appointment rates of clinics.

**Aims:** To ascertain whether health literacy levels correlate with missed appointment rates, and to examine any other potential covariates to missed appointment rates.

**Design of Study:** A verbal questionnaire and health literacy assessment.

**Setting:** General Family Practice clinics in Waco, Texas.

**Results:** TBD

**Conclusion:** TBD

**Keywords:** missed appointments; health literacy; primary health care; family practice; appointments; general practice

## Introduction

At its simplest definition, health literacy is characterized as the basic reading and numerical skills necessary for a person to function in a health care environment. Unfortunately, approximately 77 million American adults have basic or below basic health literacy skills, meaning they face obstacles when attempting to navigate the health care field. Low health literacy seems to be the “single biggest cause of poor health outcomes”, primarily by inhibiting self-advocacy on behalf of the patient. For example, lower levels of reading comprehension and numerical skills (both essential in health literacy) may result in an inability to understand physician directions or medicinal prescription labels. Patients with low health literacy levels also may affect the population at large, incurring additional costs of up to \$73 billion per year due to higher levels of hospitalization and emergency services, noncompliance with medicines, and the lack of utilizing preventive services. In short, awareness of health literacy is an important issue that is necessary for proficient navigation through the health care sphere on behalf of both the patient and the provider.

Another problem that plagues the health care sphere, particularly within primary care practices, is failed or missed appointments. Patients that fail to arrive to their scheduled

appointments disrupt health care at various points. Missing appointments not only affects their own health but also can affect the health care of others, by disrupting scheduling, wasting professionals' time, increasing medical care costs, and affecting treatment effectiveness. In an attempt to decrease no-show rates, many studies have identified various factors that seem to predict a higher rate of missed appointments: younger age, low socioeconomic status, larger family size, previous no-shows, referrals from emergency rooms, no significant ongoing relationship with a single physician, and government insurance (Medicaid).

Despite the widely acknowledged importance of health literacy, the concept remains largely unaddressed in clinical settings in regards to missed appointment rates. One article identified a positive correlation between health literacy and missed appointments, but this finding was supplemental to the main research of the study, which was to “assess the relationship between health literacy and compliance, disease awareness, and disease progression in patients with glaucoma.” There appears to be a gap in the literature relating health literacy with missed appointment rates. The goal of this study is to analyze whether or not health literacy levels can act a predictors of missed appointments.

The clinical question is the following: In a community health center population, is health literacy correlated with missed appointment rates? If it is correlated with missed appointment rates, is the relationship the same for both English-speaking populations and Spanish-speaking populations? A secondary aim is to examine whether this relationship changes when accounting for other potential covariates. Potential covariates that will be examined, based on the literature, include patient age, gender, socioeconomic status, family size, race/ethnicity, preferred language, sex, insurance status (Medicare/Medicaid or other), and number of different physicians seen in the past year.

## Materials and Methods

### Introduction

Medical patients at different family practice clinics in Waco, Texas will be asked to participate in a short demographic questionnaire and health literacy assessment, followed by

researchers reviewing their patient chart to supplement any of the following information: patient age, socioeconomic status, family size, race/ethnicity, preferred language, sex, insurance status (Medicare/Medicaid or other), number of different physicians seen in the past year, and number of missed appointments vs. kept appointments.

### *Instruments*

In order to obtain information about these potential covariates, questions will be selected and used from the Behavioral Risk Factor Surveillance System Survey Questionnaire (BRFSS) and the National Household Travel Survey (NHTS) in order to create a short demographic questionnaire. The questions selected should provide for all information except for the health literacy status of the patient.

The Newest Vital Sign (NVS) is proposed as the standard assessment to be used in obtaining the health literacy status of patients at the clinics (please see information attached). This 6-item test uses an ice cream nutritional label to assess the health literacy skills of patients. This test is ideal for busy practices and clinics, as it only takes approximately three minutes to administer and is available in both English and Spanish. The test is recommended to be given during vitals either by trained assistants and has not been found to incur any significant wait time.

Pfizer Inc, the company that created the NVS, has a short (six page, also attached) implementation guide for learning how to use the NVS in health care settings. All research assistants will undergo a training session to learn how to properly implement the test through the use of this document. Researchers will also be trained in the clinics' computer program, Epic, in order to look up patient files to find supplemental data to the research.

In order to logically compile all data, all answers within the 30-question survey were assigned numerical values. A key was created that assigned the correct answers to each number. Data compilation and analysis will be done using the numbered values.

## **Participants**

### *Sample Size*

Statistical analysis has been performed to determine a sample size that will give the

research a significance level of 0.05 and a power level of 0.8. Approximately 670 patients will need to be recruited from three clinics in order to meet these significance and power levels, resulting in approximately 225 patients at each clinic. The goal is to have equal groups, more or less, of Spanish and English speakers within this sample size.

### *Participant recruitment*

Research will be conducted within three of the ten FHC sites in Waco. Researchers will approach patients either in the lobby or within the patient room, waiting for the physician to enter. The only criteria to qualify a patient will be that they must be 18 years of older and willing to participate. The Spanish speaking patient group will be composed of those patients that either prefer to speak Spanish (preferred language) in a health care setting or have to due to lack of English proficiency.

### *Risks*

The possible psychological risks to subjects involved include potential for unintentionally inflicting shame upon the patients. A patient may not be able to answer one of the questions of the health literacy assessment and become frustrated or upset with their abilities. However, previous studies have shown the NVS has not seemed to induce any feelings of shame within participants and many actually view the process positively, as it is done primarily to better their health care process. There are no physical risks involved.

In order to avoid this each researcher will stress that the patient can take as long as they need to answer the question. Each researcher will tell them that they are helping improve patient-physician communication by participating, both by allowing physicians to be aware of their low health literacy patients and by offering information upon which the clinic can improve appointment show rates. Researchers should stress that they can stop the assessment whenever they want.

In order to limit the risk of exposing a patient's private information, all collected data will be de-identified before Baylor has access to the information. Patients will be assigned a specific ID number in order to protect their identity and privacy. Collected data will then be stored in a password-protected computer or within a locked filing cabinet.

## Methods

Researchers will enter patient room once nurses have finished vitals or they will approach patients waiting in the lobby or exiting their appointment. For each patient, researchers will begin by verbally asking the short demographic questionnaire. If they consent, an informed consent form will be handed to the patient to be signed. Then a specific ID number will be assigned to that patient. Researchers will then move into the NVS health literacy assessment. For each patient a laminated version of the ice cream nutritional label will be provided (in either English or Spanish), while researchers will read the six questions off sheets of paper upon which scores can be recorded. Upon leaving each room, the laminated cards used by the patients will be disinfected before beginning the next assessment.

After obtaining the demographic information and health literacy status of a patient, each researcher will review the chart of the patient in Epic, looking primarily at the ratio of kept appointments to missed appointments. In the data recorded for analysis, it will be necessary to record this ratio, their NVS health literacy score, the preferred language of the patient (English or Spanish), their age, their race/ethnicity, socioeconomic status, family size, their sex, their insurance status, and the number of different physicians seen in the past year.

## Data Analysis

All data will be collected by trained researchers at each site. Answers will be recorded using the numbering system mentioned previously. A sheet to record data will be provided for each patient to consolidate the information.

Data will be analyzed by a graduate statistics student to identify covariates and correlations. All data provided to the student will only include the patient's assigned ID number, and not their name.

## Results

TBD

## Discussion

TBD

## Limitations

TBD

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*Supplemental Research Materials*

*Informed Consent Form—English*

Baylor University

Certification of Informed Consent

Principal Investigator: Erika Hallak, Student, Department of Health, Human Performance and Recreation

This form asks for your consent to participate in a research study that will analyze the trends related to patients and missed-appointment ratios. The survey will determine both demographic information and health literacy level via the Newest Vital Sign health literacy assessment. The entire survey will consist of a maximum of 30 questions and should not last more than fifteen minutes.

There are no physical risks involved in this research study. You may elect, either now or at any time during the study, to withdraw your participation, with no penalty or loss of benefits. Your participation in this research project is completely voluntary.

Your name will not be used publicly in conjunction with your participation in the study. Your score on the health literacy assessment may be recorded in your private patient chart for viewing purposes of physicians, nurses, and clinical staff. Your survey results may be used within the Family Health Center as a means for the doctors and nurses to better cater health care to your personal needs and ensure you are fully aware of your scheduled appointments.

There are no major risks or dangers for you as a participant. If the questions cause you to feel uncomfortable or upset, you can always elect to stop the survey.

The results will be analyzed within the coming months and will be available for you to review, if you should so choose. However, results will be shown as averages from all patients participating and you will not be able to see how you individually did on the survey. In this way, your privacy will be respected and maintained.

Please direct all inquiries to Erika Hallak, at [Erika\\_Hallak@baylor.edu](mailto:Erika_Hallak@baylor.edu); 816-547-4798; One Bear Place #97393 Waco, Texas 76798-7393. Further contacts include Naomi Dews (254-753-4392) or Dr. Jackson Griggs (254-313-4212).

If you have any questions regarding your rights as a participant, or any other aspect of the research as it relates to you as a participant, please contact the Baylor University Committee for Protection of Human Subjects in Research, Dr. David W. Schlueter, Ph.D., Chair Baylor IRB, Baylor University, One Bear Place #97368 Waco, TX 76798-7368. Dr. Schlueter may also be reached at (254) 710-6920 or (254) 710-3708.

I have read and understood this form, am aware of my rights as a participant, and have agreed to participate in this research.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
DATE

*Informed Consent Form—Spanish*

La Universidad de Baylor  
Declaración de Consentimiento  
Investigadora Principal: Erika Hallak, Estudiante, Departamento de Health, Human  
Performance, and Recreation

Este formulario le pide a usted su consentimiento de participar en un estudio de investigación que analizará el índice de citas perdidas entre pacientes médicos. El estudio determinará la información demográfica y el nivel de competencia de leer y escribir en un ámbito médico a través de la evaluación llamada Newest Vital Sign. El estudio consta de un máximo de 30 preguntas y no debe durar más de quince minutos.

No hay riesgos físicos ni peligros de participar en este estudio. Se puede elegir, ya sea ahora o en cualquier tiempo del estudio, a retirar su participación, sin pena ni pérdida de beneficios. Si las preguntas le hacen sentir incómodo, siempre puede parar. Su participación en este estudio es enteramente voluntaria.

Ni nombre ni apellido será usado públicamente con su participación. Su nota en la prueba del Newest Vital Sign podría ser incluida en su información privada de la clínica, para que los médicos y los enfermeros puedan verla. Es posible que sus resultados puedan ser utilizados dentro del Family Health Center para mejorar el servicio, atender a sus necesidades personales y asegurar que está consciente de sus citas próximas.

Los resultados serán analizados en los meses que vienen. Serán disponibles para usted si quiere examinarlos. Sin embargo, los resultados serán demostrados como promedios de todos los participados entonces no se puede ver resultados individuales. En esta manera, su intimidad será respetada y mantenida.

Por favor, dirija todas las consultas a Erika Hallak, en [Erika\\_Hallak@baylor.edu](mailto:Erika_Hallak@baylor.edu); 816-547-4798; One Bear Place #97393 Waco, Texas 76798-7393. Otros contactos son Naomi Dews (254-753-4392) o Dr. Jackson Griggs (254-313-4212).

Si tiene preguntas sobre sus derechos como participante, o cualquier otro aspecto de la investigación, por favor póngase en contacto con Baylor University Committee for Protection of Human Subjects in Research, Dr. David W. Schlueter, Ph.D., Chair Baylor IRB, Baylor University, One Bear Place #97368 Waco, TX 76798-7368. También, es posible llamar al Dr. Schlueter a (254) 710-6920 o (254) 710-3708.

Yo he leído y entendido este formulario, soy consciente de mis derechos como participante y he aceptado a participar en esta investigación.

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NOMBRE

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FECHA

## *Survey Script—English*

The following is the script that will be used with each patient. It includes a demographic survey and the NVS health literacy assessment. Researchers will ask the following questions and record answers on a separate sheet. The numbers next to each answer correspond to a specific key that is provided later on in this chapter. The numbers are used in order to simplify the analysis process for the statistician.

### **ENGLISH SCRIPT**

S. 18<sup>th</sup> Medical= 01  
S. 18<sup>th</sup> Dental= 02  
Elm= 03  
MLK= 04

#### **Script**

(During introductions ask patients if they prefer to interact in English or Spanish. Record here.)

Preferred Language: English=200, Spanish= 201

Gender: Male=100, Female=101

Hello, my name is                     (name)                    . I am conducting research on behalf of the Family Health Center and Baylor University. I am conducting a survey that consists of 30 questions. Would you be willing to look at some health information and then answer a few questions based on that information? Your answers will help the clinic better understand appointment trends and how doctors can better provide medical information to you and other patients. This survey should take no more than 15 minutes to complete. Would you be interested in participating? (Provide patient an informed consent form. If they are interested and sign the form, begin conducting the survey.)

The following questions are adapted from the 2013 Behavioral Risk Factor Surveillance System Questionnaire (BRFSS).

#### **Health Care Access**

1. Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, government plans such as Medicare, or Indian Health Service?

111  Yes

**[If PPHF state go to Health Care Access, Question 1a below, else continue]**

222  No

777  Don't know / Not sure

999  Refused

1a. Do you have Medicare?

111  Yes

222  No

777  Don't know / Not sure

999  Refused

**Note: Medicare is a coverage plan for people age 65 or over and for certain disabled people.**

2. Are you CURRENTLY covered by any of the following types of health insurance or health coverage plans?

**Please Read:**

(Select all that apply)

- 21 \_\_\_ Your employer
- 22 \_\_\_ Someone else's employer
- 23 \_\_\_ A plan that you or someone else buys on your own
- 24 \_\_\_ Medicaid or Medical Assistance [or substitute state program name]
- 25 \_\_\_ The military, CHAMPUS, or the VA [or CHAMP-VA]
- 26 \_\_\_ The Indian Health Service [or the Alaska Native Health Service]
- 27 \_\_\_ Some other source
- 888 \_\_\_ None
- 777 \_\_\_ Don't know/Not sure
- 999 \_\_\_ Refused

3. Other than cost, there are many other reasons people delay getting needed medical care. Have you delayed getting needed medical care for any of the following reasons in the past 12 months? Select the most important reason.

**Please read**

- 31 \_\_\_ You couldn't get through on the telephone.
- 32 \_\_\_ You couldn't get an appointment soon enough.
- 33 \_\_\_ Once you got there, you had to wait too long to see the doctor.
- 34 \_\_\_ The (clinic/doctor's) office wasn't open when you got there.
- 35 \_\_\_ You didn't have transportation.

**Do not read:**

- 555 \_\_\_ Other  
\_\_\_\_\_ specify
- 222 \_\_\_ No, I did not delay getting medical care/did not need medical care
- 777 \_\_\_ Don't know/Not sure
- 999 \_\_\_ Refused

4. How many times have you been to a doctor, nurse, or other health professional in the past 12 months?

- 44 \_\_\_ Number of times
- 888 \_\_\_ None
- 777 \_\_\_ Don't know/Not sure
- 999 \_\_\_ Refused

5. Do you have one person you think of as your personal doctor or health care provider?

- 111 \_\_\_ Yes, only one
- 333 \_\_\_ More than one
- 222 \_\_\_ No

**If "No," ask: "Is there more than one, or is there no person who you think of as your personal doctor or health care provider?"**

- 777 \_\_\_ Don't know / Not sure
- 999 \_\_\_ Refused

6. Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

- 111 \_\_\_ Yes
- 222 \_\_\_ No
- 777 \_\_\_ Don't know / Not sure
- 999 \_\_\_ Refused

**Demographics**

7. What is your age?

7\_\_\_ Age in years

777\_\_\_ Don't know / Not sure

999\_\_\_ Refused

8. Are you Hispanic, Latino/a, or Spanish origin?

**If yes, ask: Are you...**

**Interviewer Note: *One or more categories may be selected.***

81\_\_\_ Mexican, Mexican American, Chicano/a

82\_\_\_ Puerto Rican

83\_\_\_ Cuban

84\_\_\_ Another Hispanic, Latino/a, or Spanish origin

**Do not read:**

222\_\_\_ No

777\_\_\_ Don't know / Not sure

999\_\_\_ Refused

9. Which one or more of the following would you say is your race?

**Interviewer Note: Select all that apply.**

**Interviewer Note: If Asian or Pacific Islander is selected read the subcategories underneath major heading.**

**Please read:**

**910\_\_\_ White**

**920\_\_\_ Black or African American**

**930\_\_\_ American Indian or Alaska Native**

**940\_\_\_ Asian**

941\_\_\_ Asian Indian

942\_\_\_ Chinese

943\_\_\_ Filipino

944\_\_\_ Japanese

945\_\_\_ Korean

946\_\_\_ Vietnamese

947\_\_\_ Other Asian

**950\_\_\_ Pacific Islander**

951\_\_\_ Native Hawaiian

952\_\_\_ Guamanian or Chamorro

953\_\_\_ Samoan

954\_\_\_ Other Pacific Islander

**Do not read:**

555\_\_\_ Other

960\_\_\_ No additional choices

777\_\_\_ Don't know / Not sure

999\_\_\_ Refused

10. Which one of these groups would you say best represents your race?

**Interviewer Note: If Asian or Pacific Islander is selected read the subcategories underneath major heading.**

**Please read:**

**910\_\_\_ White**

**920\_\_\_ Black or African American**

930 \_\_\_ American Indian or Alaska Native

940 \_\_\_ Asian

941 \_\_\_ Asian Indian

942 \_\_\_ Chinese

943 \_\_\_ Filipino

944 \_\_\_ Japanese

945 \_\_\_ Korean

946 \_\_\_ Vietnamese

947 \_\_\_ Other Asian

950 \_\_\_ Pacific Islander

951 \_\_\_ Native Hawaiian

952 \_\_\_ Guamanian or Chamorro

953 \_\_\_ Samoan

954 \_\_\_ Other Pacific Islander

**Do not read:**

555 \_\_\_ Other

960 \_\_\_ No additional choices

777 \_\_\_ Don't know / Not sure

999 \_\_\_ Refused

11. Are you...?

**Please read:**

112 \_\_\_ Married

113 \_\_\_ Divorced

114 \_\_\_ Widowed

115 \_\_\_ Separated

116 \_\_\_ Never married

**Or**

117 \_\_\_ A member of an unmarried couple

**Do not read:**

999 \_\_\_ Refused

12. What is the highest grade or year of school you completed?

**Read only if necessary:**

121 \_\_\_ Never attended school or only attended kindergarten

122 \_\_\_ Grades 1 through 8 (Elementary)

123 \_\_\_ Grades 9 through 11 (Some high school)

124 \_\_\_ Grade 12 or GED (High school graduate)

125 \_\_\_ College 1 year to 3 years (Some college or technical school)

126 \_\_\_ College 4 years or more (College graduate)

**Do not read:**

999 \_\_\_ Refused

13. Are you currently...?

**Please read:**

- 131 \_\_\_ Employed for wages
- 132 \_\_\_ Self-employed
- 133 \_\_\_ Out of work for 1 year or more
- 134 \_\_\_ Out of work for less than 1 year
- 135 \_\_\_ A Homemaker
- 136 \_\_\_ A Student
- 137 \_\_\_ Retired

**Or**

- 138 \_\_\_ Unable to work

**Do not read:**

- 999 \_\_\_ Refused

14. Is your annual household income from all sources—

**Read only if necessary:**

- 141 \_\_\_ Less than \$10,000
- 142 \_\_\_ \$10,000 to less than \$15,000
- 143 \_\_\_ \$15,000 to less than \$20,000
- 144 \_\_\_ \$20,000 to less than \$25,000
- 145 \_\_\_ \$25,000 to less than \$30,000
- 146 \_\_\_ \$30,000 to less than \$50,000
- 147 \_\_\_ \$50,000 to less than \$75,000
- 148 \_\_\_ \$75,000 or more

**Do not read:**

- 777 \_\_\_ Don't know / Not sure
- 999 \_\_\_ Refused

15. How many members of your household, including yourself, are 18 years of age or older?

15 \_\_\_ Number of adults

16. How many of these adults are men and how many are women?

16 0 \_\_\_ Number of men

16 1 \_\_\_ Number of women

17. How many children less than 18 years of age live in your household?

17 \_\_\_ Number of children

**If 1 or more, go to question 17a. If no, continue to next question.**

888 \_\_\_ None

999 \_\_\_ Refused

17.a. How are you related to the child?

**Please read:**

- 171 \_\_\_ Parent (include biologic, step, or adoptive parent)
- 172 \_\_\_ Grandparent
- 173 \_\_\_ Foster parent or guardian
- 174 \_\_\_ Sibling (include biologic, step, and adoptive sibling)
- 175 \_\_\_ Other relative
- 176 \_\_\_ Not related in any way

**Do not read:**

777 \_\_\_ Don't know / Not sure  
999 \_\_\_ Refused

The following are adapted from the 2009 National Household Travel Survey (NHTS).

**Transportation**

18. How many vehicles are owned, leased, or available for regular use by the people who currently live in your household? Please be sure to include motorcycles, mopeds and RVs.

18 \_\_\_ Number of Vehicles  
888 \_\_\_ None  
777 \_\_\_ Don't know / Not sure  
999 \_\_\_ Refused

19. What is the ZIP Code where you live?

0 \_\_\_\_\_ ZIP Code  
777 \_\_\_ Don't know / Not sure  
999 \_\_\_ Refused

**Please read:**

That was my last question about demographics. Now we are going to begin the health literacy assessment. (Hand the nutrition label to the patient).

The following is adapted from the 2005 Newest Vital Sign from Pfizer Inc.

**The Newest Vital Sign**

- Once the patient has the nutrition label, begin asking the 6 questions, one by one, giving the patient as much time as needed to refer back to the label to answer the questions.
- There is no **maximum** time allowed per question.
  - However, **please note** if the patient is struggling with the 1<sup>st</sup> and 2<sup>nd</sup> question after 2 or 3 minutes, the assessment can be stopped and the patient is assumed to have limited literacy.
- Ask the questions **in sequence**.
- Do **not** prompt patients who are unable to answer. You may say, "Let's move on to the next question."
- Do **not** show the score sheet to patients.
  - If asked to see it, tell them you cannot share the answers with participants.
- Do **not** tell patients if they have answered correctly or incorrectly.

**BEGIN ASSESSMENT**

**Read to subject:** "This information is on the back of a container of a pint of ice cream."

1. If you eat the entire container, how many calories will you eat?  
*Answer: 1000*  
*Answered Correctly? \_\_\_ Yes \_\_\_ No*
2. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?  
*Answer: Any of the following is correct: 1 cup (or any amount up to 1 cup), half the container. Note: if patient answers "two servings," ask "How much ice cream would that be if you were to measure it into a bowl?"*  
*Answered Correctly? \_\_\_ Yes \_\_\_ No*
3. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 grams of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?  
*Answer: 33 grams*

Answered Correctly? \_\_\_ Yes \_\_\_ No

4. If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?

Answer: 10%

Answered Correctly? \_\_\_ Yes \_\_\_ No

**NOTE: if patient has correctly answered 1-4, you can stop the survey now and record the score of the patient, which falls in the range of 4-6 (adequate literacy). If the patient has not correctly answered each question, continue the assessment.**

**Read to subject:** "Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee strings."

5. Is it safe for you to eat this ice cream?

Answer: No

Answered Correctly? \_\_\_ Yes \_\_\_ No

6. (Only ask if patient responds "no" to question 5) Why not?

Answer: Because it has peanut oil.

Answered Correctly? \_\_\_ Yes \_\_\_ No

### **Scoring**

Give 1 point for each correct answer, for a maximum score of 6/6. Then put an X next to the correct interpretation of the score, indicating the likelihood of the patient's health literacy level.

**Number of Correct Answers:** \_\_\_/6

\_\_\_ 0-1 points: high likelihood of limited literacy

\_\_\_ 2-3 points: indicates possibility of limited literacy

\_\_\_ 4-6 points: indicates adequate literacy

### **Closing statement**

**Please read:**

That was my last question. Everyone's answers will be combined to help us provide information about patient appointment trends and health literacy. Thank you very much for your time and cooperation. Have a good day!

Once you have finished surveying each patient, log in to Epic to record their missed-to-kept appointment ratio.

### **Information from Epic**

00 \_\_\_ Number of Total Appointments Made

001 \_\_\_ Number of Appointments Attended

002 \_\_\_ Number of Appointments Missed

**SPANISH SCRIPT**

S. 18<sup>th</sup> Medical= 01  
S. 18<sup>th</sup> Dental= 02  
Elm= 03  
MLK= 04

**Script**

(During introductions ask patients if they prefer to interact in English or Spanish. Record here.)

Preferred Language: English=200, Spanish= 201

Gender: Male=100, Female=101

Hola, me llamo     (nombre)    . Hago investigación en representación del Family Health Center y la Universidad de Baylor. Tengo una encuesta que consiste de 30 preguntas. ¿Estaría usted dispuesto/a a ver un poco de información sobre la salud y luego responder a algunas preguntas sobre esta información? Sus respuestas ayudarán a la clínica en su habilidad de entender las tendencias de las citas y cómo los médicos pueden proporcionar mejor información medicinal a usted y otros pacientes. Esta encuesta no debe durar más de quince minutos. ¿Tendría usted interés en participar? (Proporcionar a paciente un formulario de consentimiento informado. Si está interesado y firma el formulario, es posible comenzar a realizar la encuesta.)

The following questions are adapted from the 2013 Behavioral Risk Factor Surveillance System Questionnaire (BRFSS).

**Health Care Access**

1. ¿Tiene algún tipo de cobertura de seguro médico, como seguro de salud, planes prepagados como los que brindan las HMO (organizaciones de atención médica administrada) u otros planes gubernamentales como Medicare o Servicios de Salud a Poblaciones Indígenas?

111 \_\_\_ Sí

[Si es un estado bajo PPHF, pase a Health Care Access, Pregunta 1a, de lo contrario siga]

222 \_\_\_ No

777 \_\_\_ No sabe / No está seguro

999 \_\_\_ Se niega a contestar

1a. ¿Tiene Medicare?

111 \_\_\_ Sí

222 \_\_\_ No

777 \_\_\_ No sabe / No está seguro

999 \_\_\_ Se niega a contestar

**Note: Medicare es un plan de cobertura para personas de 65 años o más y para ciertas personas con discapacidad.**

2. ¿Está ACTUALMENTE cubierto por cualquier de los siguientes tipos de seguros de salud o planes de cobertura médica?

**Lea lo siguiente:**

(Seleccione todo lo que corresponda)

21 \_\_\_ Por su empleador

22 \_\_\_ Por el empleador de otra persona

23 \_\_\_ Por un plan que usted u otra persona compra por su cuenta

24 \_\_\_ Por Medicaid o Medical Assistance [o nombre de un programa estatal sustituto]

25 \_\_\_ Por las fuerzas armadas, CHAMPUS, o VA [o CHAMP-VA]

26 \_\_\_ Por el Servicio de salud en poblaciones indígenas (Indian Health Service) [o Servicios de salud en poblaciones nativas de Alaska (Alaska Native Health Service)]

27 \_\_\_ Por otro seguro o plan u otra fuente

- 88 \_\_\_ Ninguno  
777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

3. Aparte del costo, hay otras razones por las cuales las personas tardan en obtener la atención médica que necesitan.

¿Se ha tardado en obtener la atención médica que necesita por alguna de las siguientes razones en los últimos 12 meses? Seleccione la razón más importante.

**Léale**

- 31 \_\_\_ No logró comunicarse por teléfono.  
32 \_\_\_ No pudo conseguir una cita pronto.  
33 \_\_\_ Cuando llegó, tuvo que esperar demasiado para ver al médico.  
34 \_\_\_ El consultorio clínico o del médico no estaba abierto cuando llegó.  
35 \_\_\_ No tenía transporte.

**No le lea:**

- 555 \_\_\_ Otra  
\_\_\_\_\_ especificar  
222 \_\_\_ No, no me retrasé en obtener atención médica/ no necesitaba atención médica  
777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

4. ¿Cuántas veces ha ido a ver a un médico, una enfermera u otro profesional de salud en los últimos 12 meses?

- 44 \_\_\_ Cantidad de veces (record as 4 + \_\_ = 4405 o 4410)  
888 \_\_\_ Ninguno  
777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

5. ¿Hay alguna persona a la que usted considere su médico o proveedor de atención médica de confianza?

- 111 \_\_\_ Sí, solo una  
333 \_\_\_ Más de una  
222 \_\_\_ No

**Si la respuesta es “No,” pregunte: “¿Hay más de una o no hay ninguna persona a la que considere su médico o proveedor de atención médica personal?”**

- 777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

6. En los últimos 12 meses, ¿hubo algún momento en que necesitó consultar con un médico pero no pudo hacerlo por razones económicas?

- 111 \_\_\_ Sí  
222 \_\_\_ No  
777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

**Demographics**

7. ¿Qué edad tiene?  
7 \_\_\_ Edad en años  
777 \_\_\_ No sabe / No está seguro  
999 \_\_\_ Se niega a contestar

8. ¿Es usted latino, hispano, o de origen de español?

**Si la respuesta es sí, pregunte: ¿Es usted...?**

**Nota para el encuestador: Tal vez se necesite seleccionar más de una categoría.**

81 \_\_\_ Mexicano, Méxicoamericano, Chicano/a

82 \_\_\_ Puertorriqueño

83 \_\_\_ Cubano

84 \_\_\_ De otro origen latino, hispano, o español

**No le lea:**

222 \_\_\_ No

777 \_\_\_ No sabe / No está seguro

999 \_\_\_ Se niega a contestar

9. ¿A cuál o cuáles de las siguientes razas diría usted que pertenece?

**Nota para el encuestador: Seleccione todas las que correspondan.**

**Nota para el encuestador: Si se selecciona 940 (asiático) o 950 (isleño del Pacífico), lea la subcategoría bajo el título principal.**

**Léale:**

**910 \_\_\_ Blanco**

**920 \_\_\_ Negro o afroamericano**

**930 \_\_\_ Indoamericano o nativo de Alaska**

**940 \_\_\_ Asiático**

941 \_\_\_ Indoasiático

942 \_\_\_ Chino

943 \_\_\_ Filipino

944 \_\_\_ Japonés

945 \_\_\_ Coreano

946 \_\_\_ Vietnamita

947 \_\_\_ Otro origen asiático

**950 \_\_\_ Isleño del Pacífico**

951 \_\_\_ Nativo de Hawái

952 \_\_\_ Guameño o chamorro

953 \_\_\_ Samoano

954 \_\_\_ Otro isleño del Pacífico

**No le lea:**

555 \_\_\_ Otro

960 \_\_\_ No indica otras opciones

777 \_\_\_ No sabe / No está seguro

999 \_\_\_ Se niega a contestar

10. ¿Cuál de los siguientes grupos diría usted que es el más representativo de su raza?

**Nota para el encuestador: Si se selecciona 940 (asiático) o 950 (isleño del Pacífico), lea la subcategoría bajo el título principal.**

**Léale:**

**910 \_\_\_ Blanco**

**920 \_\_\_ Negro o afroamericano**

**930 \_\_\_ Indoamericano o nativo de Alaska**

**940** \_\_\_ **Asiático**

- 941 \_\_\_ Indoasiático
- 942 \_\_\_ Chino
- 943 \_\_\_ Filipino
- 944 \_\_\_ Japonés
- 945 \_\_\_ Coreano
- 946 \_\_\_ Vietnamita
- 947 \_\_\_ Otro origen asiático

**950** \_\_\_ **Isleño del Pacífico**

- 951 \_\_\_ Nativo de Hawái
- 952 \_\_\_ Guameño o chamorro
- 953 \_\_\_ Samoano
- 954 \_\_\_ Otro isleño del Pacífico

**No le lea:**

- 555 \_\_\_ Otro
- 960 \_\_\_ No indica otras opciones
- 777 \_\_\_ No sabe / No está seguro
- 999 \_\_\_ Se niega a contestar

11. ¿Es usted...?

**Léale:**

- 112 \_\_\_ Casado
- 113 \_\_\_ Divorciado
- 114 \_\_\_ Viudo
- 115 \_\_\_ Separado
- 116 \_\_\_ Nunca estuvo casado

**O**

- 117 \_\_\_ Vive en pareja sin estar casado

**No le lea:**

- 999 \_\_\_ Se niega a contestar

12. ¿Cuál es el grado escolar más alto que ha alcanzado?

**Léale solo si es necesario:**

- 121 \_\_\_ Nunca fue a la escuela o solo fue al kínder 2
- 122 \_\_\_ 1° a 8° grado (escuela primaria)
- 123 \_\_\_ 9° a 11° grado (algunos estudios secundarios)
- 124 \_\_\_ 12° grado o diploma GED (graduado de escuela secundaria superior)
- 125 \_\_\_ 1 a 3 años de universidad (algunos estudios universitarios o de escuela técnica)
- 126 \_\_\_ 4 años o más de universidad (graduado de estudios universitarios)

**No le lea**

- 999 \_\_\_ Se niega a contestar

13. ¿Es o está usted actualmente...?

**Léale:**

- 131 \_\_\_ Empleado asalariado
- 132 \_\_\_ Trabajador independiente
- 133 \_\_\_ Desempleado por 1 año o más
- 134 \_\_\_ Desempleado por menos de 1 año
- 135 \_\_\_ La mujer o el hombre que se ocupa de las tareas de la casa
- 136 \_\_\_ Estudiante
- 137 \_\_\_ Jubilado

**O**

138 \_\_\_ No puede trabajar

**No le lea:**

999 \_\_\_ Se niega a contestar

14. Tomando en cuenta todas sus fuentes de ingresos, los ingresos anuales de su hogar—

**Léale solo si es necesario:**

141 \_\_\_ Menos de \$10,000

142 \_\_\_ Entre \$10,000 y menos de \$15,000

143 \_\_\_ Entre \$15,000 y menos de \$20,000

144 \_\_\_ Entre \$20,000 y menos de \$25,000

145 \_\_\_ Entre \$25,000 y menos de \$30,000

146 \_\_\_ Entre \$30,000 y menos de \$50,000

147 \_\_\_ Entre \$50,000 y menos de \$75,000

148 \_\_\_ \$75,000 o más

**No le lea:**

777 \_\_\_ No sabe/ No está seguro

999 \_\_\_ Se niega a contestar

15. ¿Cuántas personas de las que viven en su casa, incluido usted, tienen 18 años o más?

15 \_\_\_ Cantidad de adultos

16. ¿Cuántos de estos adultos son hombres y cuántas son mujeres?

160 \_\_\_ Cantidad de hombres

161 \_\_\_ Cantidad de mujeres

17. ¿Cuántas personas (niños) de las que viven en su casa tienen menos de 18 años?

17 \_\_\_ Cantidad de niños

**Si la respuesta es 1 o más, léale la pregunta 17a. Si la respuesta es no, siga con la siguiente pregunta, 18.**

888 \_\_\_ Ninguno

999 \_\_\_ Se niega a contestar

17.a. ¿Qué relación tiene usted con el niño?

**Léale:**

171 \_\_\_ Padre o madre (incluya padre o madre biológico, padrastro o madrastra, o padre o madre adoptivos)

172 \_\_\_ Abuelo o abuela

173 \_\_\_ Tutor legal o padre sustituto (foster parent)

174 \_\_\_ Hermano o hermana (incluya hermanos biológicos, hermanastros o hermanos adoptivos)

175 \_\_\_ Otro familiar

176 \_\_\_ No tiene ninguna relación

**No le lea:**

777 \_\_\_ No sabe/ No está seguro

999 \_\_\_ Se niega a contestar

The following are adapted from the 2009 National Household Travel Survey (NHTS).

### **Transportation**

18. ¿De cuántos vehículos disponen para uso regular las personas que actualmente viven en su hogar, contando los vehículos propios, usados bajo un contrato de “lease” o disponibles regularmente de otra manera? Por favor incluya motos, motocicletas, o vehículos de recreación (RVs).

- 18 \_\_\_ Número de vehículos  
888 \_\_\_ Ninguno  
777 \_\_\_ No sabe/ No está seguro  
999 \_\_\_ Se niega a contestar

19. ¿Cuál es el código postal donde vive?

- 0 \_\_\_ Código Postal  
777 \_\_\_ No sabe/ No está seguro  
999 \_\_\_ Se niega a contestar

### **Favor de leer:**

Esta fue mi última pregunta demográfica. Ahora, vamos a empezar la encuesta de la alfabetización de la salud. (Dar la etiqueta nutricional al paciente)

The following is adapted from the 2005 Newest Vital Sign-Spanish Edition from Pfizer Inc.

### **The Newest Vital Sign**

- Once the patient has the nutrition label, begin asking the 6 questions, one by one, giving the patient as much time as needed to refer back to the label to answer the questions.
- There is no **maximum** time allowed per question.
  - However, **please note** if the patient is struggling with the 1<sup>st</sup> and 2<sup>nd</sup> question after 2 or 3 minutes, the assessment can be stopped and the patient is assumed to have limited literacy.
- Ask the questions **in sequence**.
- Do **not** prompt patients who are unable to answer. You may say, “Let’s move on to the next question.”
- Do **not** show the score sheet to patients.
  - If asked to see it, tell them you cannot share the answers with participants.
- Do **not** tell patients if they have answered correctly or incorrectly.

### **EMPIECE LA EVALUACION**

**Léale al paciente:** “Esta información aparece en el reverso de un envase de helado.”

7. Si usted come todo el helado en el envase, ¿cuántas calorías habrá consumido?

*Respuesta: 1000*

*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*

8. ¿Si a usted le recomendaron consumir 60 gramos de carbohidratos en la merienda, ¿cuánto helado podría comer?

*Respuesta: Cualquiera de; Hasta un máximo de una taza, una taza, la mitad del envase.” Nota—si el paciente responde “dos porciones,” pregunte “¿Qué cantidad de helado sería si lo sirviera en un tazón?”*

*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*

9. Su médico le aconseja reducir la cantidad de grasas saturadas en su dieta. Usted normalmente consume 42 gramos de grasa saturada al día, que incluye una porción de helado. Si deja de comer helado, ¿cuántos gramos de grasa saturada consumiría cada día?

*Respuesta: 33 gramos*

*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*

10. Si usted normalmente come 2500 calorías, ¿cuántas calorías habrá consumido si come una porción?  
*Respuesta: 10%*  
*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*

**NOTE: if patient has correctly answered 1-4, you can stop the survey now and record the score of the patient, which falls in the range of 4-6 (adequate literacy). If the patient has not correctly answered each question, continue the assessment.**

**Léale al paciente:** “Imagine que es alérgico/a a las siguientes sustancias: Penicilina, cacahuete (maní), guantes de látex, y picaduras de abeja.”

11. ¿Puede comer este helado con seguridad?  
*Respuesta: No*  
*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*
12. (Solamente si responde “no” a la pregunta 5): ¿Por qué no?  
*Respuesta: Porque contiene aceite de cacahuete (maní).*  
*¿Respuesta correcta? \_\_\_ Sí \_\_\_ No*

### **Scoring**

Give 1 point for each correct answer, for a maximum score of 6/6. Then put an X next to the correct interpretation of the score, indicating the likelihood of the patient’s health literacy level.

**Number of Correct Answers: \_\_\_/6**

- \_\_\_ 0-1 points: high likelihood of limited literacy  
\_\_\_ 2-3 points: indicates possibility of limited literacy  
\_\_\_ 4-6 points: indicates adequate literacy

### **Closing statement**

**Léale por favor:**

Esta fue la última pregunta. Todas las respuestas de los participantes serán combinadas con el fin de proporcionar información sobre las tendencias de las citas de los pacientes y la alfabetización de la salud. Muchísimas gracias por su tiempo y cooperación. ¡Que tenga buen día!

Once you have finished surveying each patient, log in to Epic to record their missed-to-kept appointment ratio.

### **Information from Epic**

- 00 \_\_\_ Number of Total Appointments Made  
001 \_\_\_ Number of Appointments Attended  
002 \_\_\_ Number of Appointments Missed

*The Newest Vital Sign Nutrition Label—English and Spanish*

The Spanish nutrition label here was adapted from the 2005 Newest Vital Sign toolkit from Pfizer Inc. to reflect accurately its English counterpart. One ingredient (milkfat) was missing from the original Spanish nutritional label.

<b>Nutrition Facts</b>		½ cup
Serving Size		4
Servings per container		
<b>Amount per serving</b>		
Calories	250	Fat Cal 120
<b>Total Fat</b> 13g		%DV 20%
Sat Fat 9g		40%
<b>Cholesterol</b> 28mg		12%
<b>Sodium</b> 55mg		2%
<b>Total Carbohydrate</b> 30g		12%
Dietary Fiber 2g		
Sugars 23g		
<b>Protein</b> 4g		8%

\*Percentage Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**Ingredients:** Cream, Skim Milk, Liquid Sugar, Water, Egg Yolks, Brown Sugar, Milkfat, Peanut Oil, Sugar, Butter, Salt, Carrageenan, Vanilla Extract.

<b>Información Nutricional</b>		½ taza
Tamaño de la Porción		4
Porciones por envase		
<b>Cantidad por porción</b>		
Calorías	250	Cal Grasa 120
<b>Grasa Total</b> 13g		%DV 20%
Grasas Sat 9g		40%
<b>Colesterol</b> 28mg		12%
<b>Sodio</b> 55mg		2%
<b>Total Carbohidratos</b> 30g		12%
Fibras Dietéticas 2g		
Azúcares 23g		
<b>Proteína</b> 4g		8%

\*Porcentaje de Valores Diarios (DV) se basa en una dieta de 2,000 calorías. Sus valores diarios pueden ser mayores o menores dependiendo de las calorías que usted necesite.

**Ingredientes:** Crema, Leche Descremada, Azúcar en Líquida, Agua, Yemas de Huevo, Azúcar Morena, Grasa de Leche, Aceite de Cacahuete (Maní), Azúcar, Mantequilla, Sal, Carragenina, Extracto de Vainilla.

Survey Key

21	Your employer	01	S. 18th Medical
22	Someone else's employer	02	S. 18th Dental
23	A plan that you or someone else buys on your own	03	Elm
24	Medicaid or Medical Assistance	04	MLK
25	The military, CHAMPUS, or VA	100	Male
26	The Indian Health Service	101	Female
27	Some other source	200	Prefer to speak English
31	You couldn't get through on the telephone	201	Prefer to speak Spanish
32	You couldn't get an appointment soon enough	111	Yes
33	Once you got there, you had to wait too long to see the doctor	222	No
34	The clinic/doctor's office wasn't open when you got there	777	Don't know/not sure
35	You didn't have transportation	999	Refused
44 + __	44 refers to question #4 and the following two numbers are the times they've been to the doctor, nurse, etc. in the past 12 months	888	None
81	Mexican, Mexican American, Chicano	555	Other
82	Puerto Rican	333	More than one
83	Cuban	0-6	Refers to NVS score
84	Another Hispanic, Latino, or Spanish origin	0	High likelihood of limited literacy
910	White	1	High likelihood of limited literacy
920	Black or African American	2	Possibility of limited literacy
930	American Indian or Alaska native	3	Possibility of limited literacy
940	Asian	4	Adequate literacy
941	Asian Indian	5	Adequate literacy
942	Chinese	6	Adequate literacy
943	Filipino		
944	Japanese		
945	Korean		
946	Vietnamese		
947	Other Asian		
950	Pacific Islander		
951	Native Hawaiian		
952	Guamanian or Chamorro		
953	Samoan		

954	Other pacific islander		
960	No additional choices		
112	Married		
113	Divorced		
114	Widowed		
115	Separated		
116	Never Married		
117	Member of unmarried couple		
121	Never attended school or only attended kindergarten		
122	Grades 1 thru 8 (elementary)		
123	Grades 9 thru 11 (some high school)		
124	Grade 12 or GED (high school graduate)		
125	College 1-3 years (some college or technical school)		
126	College 4 years or more (college graduate)		
131	Employed for wages		
132	Self employed		
133	Out of work for 1 year or more		
134	Out of work for less than 1 year		
135	A homemaker		
136	A student		
137	Retired		
138	Unable to work		
141	Less than \$10,000		
142	10,000 to less than 15000		
143	15000 to less than 20000		
144	20000 to less than 25000		
145	25000 to less than 30000		
146	30000 to less than 50000		
147	50000 to less than 75000		
148	75000 or more		
15 +	15 refers to question #15 while the following two numbers refers to number of members of household, including participant, than are 18 years or older		
160 +	160 refers to question #16, number of adult men in household		
161 +	160 refers to question #16, number of adult women in household		
17 +	Question #17, number of children living in household that are 18 years		

	or younger		
171	Parent		
172	Grandparent		
173	Foster parent/guardian		
174	Sibling		
175	Other relative		
176	Not related in any way		
18 + _ _	Question #18, how many vehicles are owned/leased/available for regular use by people currently living in household		
0 + _ _ _	Question #19, zip code		
00 + _ _	Number of total appointments made		
001 + _ _	Number of appointments attended		
002 + _ _	Number of appointments missed		

## *Conclusion*

Health literacy is an essential aspect of navigating the health care sphere, and is therefore of immense importance to anyone currently working in the health care field or looking to enter into the field. It essentially encompasses an individual's ability to understand each aspect of a health appointment; whether that means understanding the doctor's description of a disease, verbally expressing concerns about health, or being able to read prescription instructions for medication. Inadequate health literacy means that patients are unable to accomplish tasks such as these successfully, which may lead to poor health outcomes. Hispanic-Americans with LEP and inadequate health literacy have additional barriers to health care access. There is a large disparity between adequate health care access of non-Hispanic Americans and Hispanic-Americans. In America, the number of LEP Hispanic-American patients is vastly disproportionate to the number of bilingual physicians, and the use of professional interpreters is not implemented as much as it needs to be. The inability to communicate directly to a physician is a major barrier to adequate health care access for LEP Hispanic-Americans. Furthermore, cultural differences accentuate this disparity between Hispanic-Americans and non-Hispanic Americans.

Since I am hoping to enter into the field of health care and medicine, I am immensely interested in these issues. I am concerned about the level of health care that Hispanic-Americans receive and I want to work actively to better the care for this population. As a university student, I have been given the tools to effect some of the proposed improvements. First of all, as a pre-med student about to apply for medical schools, it is my hope to one day become a bilingual physician. With this achievement, I

will be able to realize the suggestions mentioned in this thesis, practicing bilingual medicine to make a difference in the lives of Hispanic-Americans. While I cannot personally improve the health care of this entire population, I will be able to serve for one clinic and one city in order to better health care access as much as possible within my capabilities.

Currently, as a student proposing clinical research, I hope to make an impact on the Hispanic-American population in Waco, Texas. I am striving to conduct my research at the local FHC sites in order to benefit this specific population and the clinics themselves. I want to administer health literacy surveys to patients so that the clinics can utilize the information to specifically tailor appointments to an individual's needs. I want to analyze the relationship between health literacy, missed appointment rates, and language in order to see if any conclusions can be drawn that will improve these phenomena. I want to give back to Waco for graciously providing me with a home for the past four years, and I want to reciprocate the generosity shown to me by the FHC for allowing me to volunteer and shadow for a year and a half.

Finally, as a student writing a thesis, I have been able to write on the importance of this topic, extensively reviewing articles and compiling a paper of the most important aspects of the issue. Through this research, it is possible that this topic can be disseminated beyond myself and beyond Waco. It is my hope that this thesis raises awareness about the importance of health literacy and improving health care for Hispanics. It is my hope that others—physicians, nurses, administrators, volunteers, students, etc.—can read this thesis and implement a few of the proposed mechanisms to improve health care access for Hispanics. They can continue looking into the best

methods to improve health care for Hispanic-Americans based on their specific clinic, city, or state. They can begin learning medical Spanish to try and communicate better with each patient they see, not just the English-speaking patients. I hope that this thesis moves current and future physicians, nurses, and health care workers to start making a difference.

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