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Se habla español: Using Chagas disease as a model for developing health communication products with the US Latin American immigrant population

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Se habla español: Using Chagas disease as a model for developing health communication products with the US Latin American immigrant population

By

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B.S.
University of Michigan
2011

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Rollins School of Public Health of Emory University
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Abstract

Se habla español: Using Chagas disease as a model for developing health communication products with the US Latin American immigrant population

By Erin McGrath Keyes

Introduction: Chagas disease causes significant morbidity and mortality across the world. There are currently about 300,000 people living in the US with Chagas disease. Most of these people were infected while living in an endemic area: parts of Mexico, Central America, and South America. To communicate the importance of Chagas disease diagnostic testing in the US, culturally specific health communication initiatives should be directed at the US Latin American immigrant population.

The US Latin American immigrant population has specific needs in health communication. These needs include health literacy factors, communication channels, and cultural influences. Health communicators must should these factors when designing a product to promote Chagas disease diagnostic testing.

Theoretical Framework: The Health Belief Model and Diffusion of Innovations Theory guided the research process and product development for this project.

Methods: 12 US Latin American immigrants total participated in a series of 3 focus group discussions. These focus group discussions evaluated external health communication products. They also critiqued and guided the development of the Chagas disease health communication product of this project. After product completion, the primary researcher interviewed 2 new Latin American immigrants about the final product to verify the conclusions of the study. Study results informed the development of a protocol to guide further health communication with Latin American immigrants in the US.

Results: Latin American immigrants have specific needs and preferences in health communication. These needs and preferences fall into different factions of health literacy and health communication. Examples include preference for bright colors, family-centered images, and simplicity in text. They also prefer specific distribution routes for print media, such as certain magazines and newspapers.

Conclusion: It is necessary to consider factors of health literacy and cultural preference in health communication to effectively motivate behavior change in the Latin American immigrant population.

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Chapter 1: Introduction

Chagas disease

Chagas disease is a parasitic infection endemic to parts of Mexico, Central America, and South America. Roughly 8-11 million people are infected in Latin America alone (Centers for Disease Control and Prevention [CDC], 2011).There are about 300,000 people currently infected with Chagas disease the United States (CDC, 2011). However, there is a lack of surveillance, prevention, and treatment of Chagas disease, when compared to other parasitic infections. For this reason, the Centers for Disease Control and Prevention classify Chagas disease as a Neglected Parasitic Infection (CDC, 2012a).

Chagas Disease Path

Chagas disease is caused by the *Trypanosoma cruzi* (*T. cruzi*) parasite (CDC, 2012b). *T. cruzi* can be transmitted through multiple routes. Yet, it is most often spread to animals and humans through an insect vector: the triatomine insect. Triatomine insects live in the crevices of low structural quality, adobe or thatched roof houses during the day. They emerge at night to feed. This feeding process involves biting of humans or animals, ingestion of their blood, and subsequent defecation on their body. The feces can then pass into the animal or human host's body through breaks in the mucous membrane or skin. If the triatomine insect is a positive *T. cruzi* carrier, passage of feces into the host's blood transmits the parasite to the host. This can lead to multiplication of the parasite in the blood. This multiplication results in *T. cruzi* infection, which leads to Chagas disease (CDC, 2012b).

Chagas Disease Diagnosis

Diagnosis of Chagas disease is complicated by subtlety of symptoms and a two-stage development pattern. The first phase of Chagas disease, the acute phase, occurs several weeks to months after infection with the *T. cruzi* parasite (CDC, 2010a). It usually shows few or no symptoms. Rarely, symptoms appear such as fever or an inflammation of the infection site, heart muscle, or brain lining. These symptoms tend to go away on their own (CDC, 2010a). The second phase, the chronic phase, can last the patient's lifespan. It is usually asymptomatic. However, 20-30% of patients in the chronic phase experience symptoms such as dilated heart, esophagus, or colon, leading to death (CDC, 2010a).

Early diagnosis is pivotal for both prevention and treatment of Chagas disease. In the US, increased diagnostic testing and treatment may prevent transmission of the *T. cruzi* parasite through congenital (mother-to-baby) routes and blood transfusion. Early diagnosis can also improve treatment for those previously infected with the disease (Bern et al., 2007). Thus, it is important to move practices towards increased diagnostic testing for those at risk of Chagas disease, even if they are asymptomatic.

Population-Specific Health Communication

Increased testing for Chagas disease may result from improving relevant health communication and promotion materials (Berkman et al., 2004). To increase relevance of the health message to the population of interest, it is necessary to segment the audience of the health communication product. Audience segmentation focuses communication on a specific population and allows a product to better meet the population's needs and preferences. The population of interest for this project is based on those most at risk for Chagas disease. While several distinct cases of vector-borne transmission of Chagas

disease have been observed in the United States, this route of transmission is still uncommon (Dorn et al., 2007). The majority of the 300,000 people living with Chagas disease in the US were infected while residing in an endemic country. Endemic areas include parts of Mexico, Central America, and South America (Remme, 2006). Therefore, the US population of interest for Chagas disease testing promotion includes immigrants from Latin America.

Research shows several key factors to consider in health communication with Latin American immigrants. It is important to evaluate health literacy factors such as appropriate language, community engagement, scientific background, and cultural context in designing materials (Zarcadoolas et al., 2009). Cultural factors include acculturation level, community participation, and the influence of a patriarchal societal structure. Research shows that the Latin American population values personalized, family focused styles of communication (Morales et al., 1999). They prioritize visual attractiveness, quality, and thoroughness when choosing to consider specific health communication materials (Sonderup, 2010).

Theoretical Framework

To increase efficacy in Chagas disease diagnostic testing promotion, health communication should be based on relevant theories of behavior change. For this project, materials will be based on the Health Belief Model and Diffusion of Innovations theory. The Health Belief Model encourages the adoption of healthy behavior by promoting evaluation of benefit of behavior change and risk of the health issue (Glanz et al., 2008). This project uses the Health Belief Model to raise awareness on the benefits of Chagas disease prevention and the possible negative health outcomes from remaining

undiagnosed. The Diffusion of Innovations theory models what innovations are adopted in a community, why, and how quickly. In this project, it will shape how to best portray ChD information to increase diagnostic testing quickly (Glanz et al., 2008).

Goals and Aims

Increased testing and diagnosis of Chagas disease in the US Latin American immigrant population may lessen transmission rates and disease burden. A potential method of increasing diagnostic testing is to communicate the need for testing to the population most affected by Chagas disease. The goal of this project is to integrate cultural specificity into health communication with Latin American immigrants in the United States. The aims of this project are to (1) create a culturally specific health communication product to promote Chagas disease diagnostic testing and (2) develop a protocol to guide health communication with Latin Americans in the US.

Chapter 2: Literature Review

This literature review describes available research on key components of this project's health communication product design. First, it summarizes research on Chagas disease. It then profiles the audience most affected by Chagas disease in the US: Latin American immigrants. The chapter evaluates research on health literacy and communication. It describes Latin American culture and techniques for improving cultural sensitivity in health communication with Latin American immigrants.

Chagas disease

Chagas disease as a Neglected Parasitic Infection

A parasite is an organism that lives in another species to obtain food and survive. This is at the expense of the host species and results in a parasitic infection (CDC, 2010b). Parasitic infections are classified as diseases if the host's body deviates from normal structure or function. This deviation typically causes negative health symptoms (Merriam-Webster, 2013).

The Centers for Disease Control and Prevention (CDC) classify Chagas disease (ChD) as a Neglected Parasitic Infection. Classification is due to the lack of ChD specific surveillance, prevention, and treatment when compared to other parasitic infections (CDC, 2012a). Fortunately, this classification signifies priority for public health action. Priority for action is due to prevalence of infected individuals, severity of disease symptoms, and medical capability for prevention and treatment (CDC, 2012a).

Left: Figure 1. Triatomine insect, the insect vector of ChD vector-borne transmission (CDC, 2010c)
Right: Figure 2. Regions Endemic to ChD (Remme, 2006)
Colored regions are endemic

Chagas disease transmission

In Latin America, there are currently 8-11 million people infected with Chagas disease. Chagas disease is transmitted to people and animals through the parasite *Trypanosoma cruzi (T. cruzi). T. cruzi* transmission mostly occurs through vector-borne pathways with the triatomine insect, shown in *Figure 1*. As the triatomine insect lives only in the Americas, ChD is also called American trypanosomiasis (Woody, 1955). As shown in *Figure 2*, ChD has a geographical network of endemic countries in only Mexico, Central, and South America. However, ChD infected individuals live throughout the world (CDC, 2012c).

Figure 3. Substandard housing that marks transmission of ChD through insect vectors (Infection Landscapes, 2011).

Parasitology of Chagas

In the Americas, higher ChD prevalence is concentrated in areas of rural poverty. These areas are marked by low structural quality of substandard housing, as seen in *Figure 3*. Substandard housing increases contact with the triatomine insect vector of the *T. cruzi* parasite (CDC, 2010c). These insects stay in crevices of walls and roofs during the day, but emerge at night to feed. To feed, the triatomine insect bites humans or animals, consumes their blood, and defecates on the feeding site. When a triatomine insect is a positive carrier, this defecated feces contains the *T. cruzi* parasite. This parasite can pass into the host's body through breaks in the skin or mucous membrane. Passage of the parasite into the blood causes *T. cruzi* infection (CDC, 2012b).

The majority of ChD transmission occurs through vector-borne parasitic transmission by triatomine insects. However, congenital pathways (from mother to baby), blood transfusion or organ transplantation, laboratory accidents, or food products contaminated with triatomine insect feces can also transmit ChD (Coura & Viñas, 2010 & Pereira et al., 2010).

Symptoms of Chagas disease

After parasite infection, ChD develops in two stages: the acute phase and the subsequent chronic phase. Both phases can be asymptomatic or life threatening (CDC, 2010a).

The initial phase is called the acute phase. The acute phase lasts the first few weeks to months after infection. This phase often goes undiagnosed, as symptoms are usually mild or non-existent and not unique to Chagas disease. Symptoms can include

fever, fatigue, aching, headaches, rash, loss of appetite, diarrhea, and vomiting (CDC, 2010a).

Figure 4. The Romaña's Sign pictured in the patient's left eye (CDC, 2012a).

The most recognized symptom of acute phase ChD, pictured in *Figure 4*, is the Romaña's sign. The Romaña's sign involves eyelid swelling on the side of the body where infection occurred or where the patient rubbed vector-contaminated feces into the eye directly (CDC, 2012b). Further physical examination of an infected patient may show a mildly enlarged liver or spleen, swollen glands, and a chagoma, or localized swelling where the parasite entered the body and began reproduction. However, symptoms are rare. If symptoms do develop, they tend to go away on their own within a few weeks or months. Those with compromised immune systems or young children can have severe reactions to inflammation that may lead to organ damage or death (CDC, 2012b).

Following the acute phase, patients enter into a lengthy chronic phase. Symptoms of the chronic phase are often very mild. The patient usually remains unaware of infection. Only 20-30% of patients develop symptoms such as heart rhythm abnormalities and dilated heart muscle, esophagus, or colon, leading to death (CDC, 2012b). Again, symptoms are more likely to be severe in patients with compromised immune systems or young children (CDC, 2012b).

Diagnosing and Treating Chagas disease

Diagnosis of ChD involves blood testing. Acute phase ChD diagnosis occurs through microscopic observation of parasites in the blood. Conclusive diagnosis requires testing with at least two different serologic tests (CDC, 2010d). In contrast, parasites do not often circulate in the blood during chronic phase ChD. Diagnosis of this phase requires observation of unusually high titer anti-*T. cruzi* antibodies in patient blood. This high titer is due to prolonged immune response to *T. cruzi* infection (Reyes, 2008 & Center for Biologics Evaluation and Research, 2010).

After diagnosis, ChD treatment comes in two forms: antiparasitic and symptomatic. Antiparasitic treatment intends to kill parasites in the patient's blood. It is most effective early in infection. However, it can be used in the acute and chronic phases if parasites are present in the blood. Unfortunately, antiparasitic treatment is associated with frequent toxic side effects (Urbina, 2002). Symptomatic treatment aims to manage infection signs and symptoms, such as heart rhythm abnormalities or dilated colon. It is used for those who have cardiac or intestinal problems due to the chronic stage ChD (CDC, 2012b). Early treatment of ChD can lessen disease burden and prevent the development of severe symptoms or death (World Health Organization, 2012).

Population Profile

Chagas disease in the US

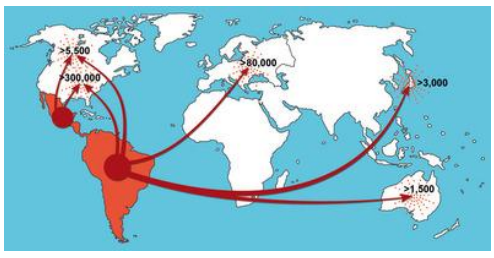


Figure 5. Known prevalence of ChD infected individuals from endemic regions (Coura & Viñas, 2010).

Though infection can occur domestically, most people living with ChD in the US were infected while living in an endemic area. Endemic areas are found in parts of Mexico, Central or South America. As shown in *Figure 5*, many ChD positive individuals immigrated to the US from endemic areas (Brick, Challinor, & Rosenblum, 2011). Understanding domestic ChD distribution requires an evaluation of Latin American immigration patterns. Latin American immigrants come from many countries of origin; however, census data aggregates these populations into a larger pan-ethnic minority group (United States Census Bureau, 2011). For the purposes of this study, the population will be examined together. Justification and limitations of this classification will be explained later in this chapter.

Latin American Immigration Rates

Since 1970, Latin American immigration rates to the United States increased rapidly (Brick, Challinor, & Rosenblum, 2011). According to the 2008 census, about 46.9 million Latin American immigrants live in the US. This represents 15% of the total population (CDC, 2012d). However, many Latin American immigrants reside in the US without documentation (Terrazas, 2010). According to the US Department of Homeland Security, Mexico, El Salvador, Guatemala, and Honduras are the countries of highest undocumented US immigration rates (CDC, 2012d).

Geographic Distribution

Historically, most Latin American immigrants settled in Southern states such as California, Texas, or Florida, depending on their country of origin. Yet increased immigration widened settlement to commonly include states in the East, South, and

Midwest. Within these regions, Latin Americans typically live in urban areas such as Los Angeles, New York, or Atlanta (Terrazas, 2010).

Socioeconomic Status

Recent studies show that more Latin American immigrants in the US are living at low socioeconomic status than ever before (Brick, Challinor, & Rosenblum, 2011). More Latin American immigrants live in poverty than native-born workers or any other immigrant group in the US (Terrazas, 2010). Often correlated with low paying jobs and undocumented status, Latin Americans also suffer from low rates of health insurance. At about 50%, Latin American immigrants have the highest uninsured rates of any immigrant group in the US (Smith, 2000).

Literacy and Education in the Latin American population

Overall, Latin American immigrant populations have low literacy and education levels. In 2008, three quarters of Mexican immigrants had limited English proficiency. Over half of Mexico, Central, and South American-born adults did not have a high school education (Brick, Challinor, & Rosenblum, 2011). Many studies show that low literate populations struggle to understand and act on health information. Thus, it is important to consider language acquisition and educational status of Latin American immigrants in health communication (Zarcadoolas et al., 2005).

Health Literacy

Low health literacy is a common barrier to health-seeking behavior, regardless of ethnic background. Over half the adults in the US have low health literacy (Rudd, 2007). Low health literacy means they are unable to consistently obtain sufficient information to carry

out healthy behaviors. Not carrying out healthy behaviors leads to increased morbidity and mortality. Addressing low health literacy is complex, but imperative to improving health status through behavior change (www.healthypeople.gov/2020).

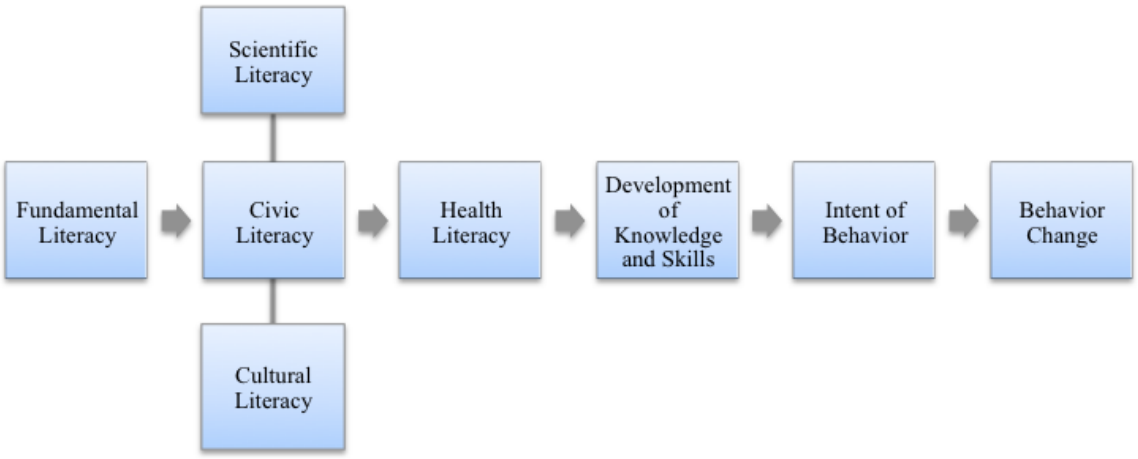


Figure 6. Logistical framework of health literacy

Health literacy is important for behavior change (Berkman et al., 2004). As shown in *Figure 6*, behavior change requires a person to *intend* to change behavior. This intent is motivated by the development of knowledge and skills, which enable a person to make specific changes. Health literacy precedes the development of these skills by yielding the "capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (Baker et al., 2000)." Skills in fundamental, scientific, civic, and cultural literacy support the development of health literacy (Zarcadoolas et al., 2009). These key terms are explained below.

Fundamental Literacy

Fundamental literacy precedes development of scientific, civic, and cultural literacy skills. This is because fundamental literacy precedes message processing. It

enables a person to read, write, speak, and understand the meaning of words and numbers (Zarcadoolas et al., 2009). Without understanding the words or numbers of a health communication piece, a person cannot comprehend the meaning or significance of the message. If they cannot understand the meaning of a message, they cannot act upon the message (Zarcadoolas et al., 2009). To illustrate this concept through an example, a person must be able to read and understand the words "diagnostic test" before processing a health promotion message encouraging him or her to get a diagnostic test for ChD.

For these reasons, language and simplicity in writing are important for health communication tools. Specifically, best practices for clear health communication include:

- Writing words clearly and simply, avoiding technical terms and jargon
- Writing in active voice
- Making sentences short or using simple conjunctions like "and" or "but"
- Re-iterating important topics
- Limiting the number of key points so that the message is not overwhelming
- Supplying only essential information to avoid confusion

Following these practices allows health communication messages to be easier to follow, understand, and process for meaning (Zarcadoolas et al., 2009). This is especially important for communicating with the US Latin American immigrant population, which has low simple literacy rates.

Scientific Literacy

Scientific literacy allows a person to comprehend and use science information and technology. This includes the ability to analyze the reliability of information. With these skills, a person can better comprehend the significance of health communication

messages (Zarcadoolas, 2009). For example, a person needs to know that heart problems associated with ChD are negative health outcomes that can lead to death. Without this comprehension, the person is unable to realize the dangers associated with untreated ChD.

Increasing scientific literacy should be an overarching goal for health practitioners and educators. However, it is necessary to be aware of the audience's current scientific literacy. It is important for health communication materials to meet a person at their current level of scientific literacy by supplying sufficient scientific background (Zarcadoolas et al., 2009). Methods to accomplish this include:

- Limiting messages to the most basic, simple information possible
- Focusing on the action, not background information and statistics (Office of Disease Prevention and Health Promotion, 2006)
- Making message items specific and actionable by breaking large behaviors into smaller steps (Office of Disease Prevention and Health Promotion, 2009)
- Ensuring content is accurate

Using these techniques can create clear, actionable messages. Such messages motivate a person to make informed decisions for their health (Office of Disease Prevention and Health Promotion, 2013). Clarity in scientific information is very important for communicating with the US Latin American immigrant population. This is because the US Latin American immigrant population suffers from low average levels of education.

Civic Literacy

Civic literacy enables an individual to learn about health issues through community and social mediums. It also enables an individual to participate in decision-making processes for health issues in his or her community (Lasker & Weiss, 2003). Civic literacy increases community participation and social capital building. This can improve a person's access to informational and emotional support for health decision-making (Gittell & Vidal, 1997). Community participation can also improve evaluation of information and service quality (Gaventa, 1993). For the ChD testing example, adequate civic literacy highlights why a person should get tested for ChD, where he or she can obtain a test, and at what cost. Techniques to facilitate civic literacy in health communication include:

- Communicating population-specific health information
- Supplying resources and information to promote civic engagement
- Encouraging collective action and support (Kreps & Kunimoto, 1994)

Using techniques to improve civic literacy may increase community engagement in health decision-making. Health communication can sustain behavior change by providing a structure for health behavior and delineating routes to accomplish actions. This is especially important for US Latin American immigrants. US Latin American immigrants often consider community participation important and feel isolated from the US medical system.

Cultural Literacy

Cultural literacy acknowledges the role of culture in comprehending messages. Culture is defined as a group's shared characteristics and customs. It influences how a

person interprets a message within the context of his or her beliefs and experiences (Smith, 1966). It is important to consider cultural schemas in health communication to ensure that the population of interest receives the intended message (Huerta & Macario, 1999).

Focusing messages around ideals that are important to the population of interest can increase message significance. For the ChD example, emphasizing the importance of ChD testing to protect of the family may be effective. This family focus can increase salience of the message for the Latin American community and communicate the importance of health action.

Various techniques can increase cultural literacy for a health communication product. Key techniques include:

- Using words like “you” or “we” to increase personalization and identification with the story line
- Creating audience-specific metaphors or analogies to connect the message to a person’s life
- Addressing cultural preferences in design through color choices, images, etc.
- Addressing cultural preferences in dissemination via medium of communication

Culture affects how a person processes the world around them. Acknowledging cultural factors in health communication increases the likelihood that a person applies the message to his or her life in a productive way. Culture is a very important part of US Latin American immigrant lifestyles. Acknowledging this in health communication is very important.

Health Literacy Combined

In summary, health communication products must acknowledge fundamental, scientific, civic, and cultural domains of health literacy to maximize efficacy. Addressing each domain can facilitate the ability of a person to learn knowledge and skills. With increased knowledge and skills, a person can intend to change their behavior. With intention, he or she may successfully change his or her health behavior.

Health Communication

Health Communication Channels

For health communication products to effectively communicate with the Latin American immigrant population, it is important to utilize the communication channels this population uses. In a study of Latin American immigrants in the United States, participants most commonly credited medical providers with successful communication of health information (Livingston, 2008). However, 63% of the Latin American population receives health information from family or friends and 31% of Latin American immigrants seek information from community groups and churches (Livingston, 2008). These sources demonstrate that trust of source is an important consideration for this population. Furthermore, verbal, person-to-person communication channels can ameliorate communication disparities between populations with high and low literacy rates (Andrus& Roth, 2002).

Other formats of health communication materials offer strengths and weaknesses in meeting specific needs of the Latin American population. Latin American immigrants read magazines more than the average US population and consider magazines a trusted

source of information (Doublebase Mediamark Research & Intelligence, 2009). Similarly, Latin American-specific newspapers are a large part of mass media communication in this community (Sonderup, 2010). Here, messages can be tailored to the population. They can address the primary concerns of Latin American communities (Sonderup, 2010). However, the demographics of newspaper readership are skewed to adults 34-54 years old with an average annual household income of $40,000 or more (Sonderup, 2010). In addition, low literacy rates in the Latin American population limit readership of magazines and newspapers.

Latin American populations also report high use of radio, television, and Internet. Fifty six percent of Latin Americans report listening to the radio, while seventy seven percent report watching television for entertainment value (Doublebase Mediamark Research & Intelligence, 2009). Often, this is through Spanish-language channels (Sonderup, 2010). In contrast, 64% of Latin American immigrants report using the Internet not for entertainment, but because it is a good source of information (Doublebase Mediamark Research & Intelligence, 2009). 78% of Latin American Internet users reported using search engines for information (comScore Media Metrix, 2010). However, Internet use depends on access, income, and education. Health websites in Spanish are often written at a 10^{th} grade reading level, which is unsuited to the low average education level of the population (Doublebase Mediamark Research & Intelligence, 2009).

For increased efficacy, the health communication design process should acknowledge these usage patterns and population demographics. Placing health communication products in communication channels that are already consumed by the population of interest will increase the likelihood that the product is observed (Noar,

2012). Placement of ChD diagnostic testing information in communication channels consumed by Latin American immigrants in the US may increase the efficacy of promotion in this population.

Cultural Sensitivity

Cultural sensitivity is imperative to successful health communication. Culture is "reflected in a group's values, beliefs, norms, practices, patterns of communication, familial roles and other social regularities" (Kreuter & McClure, 2004). Culture affects many lifestyle domains, including health behavior and perception of health services. Many studies show cultural insensitivity in healthcare leads to poor immigrant opinion of US health services, interventions, and communications (Kreuter & McClure, 2004). To combat this issue in health communication, communicators should consider culture throughout the design process.

Cultural factors influence how the "source, message, channel, recipient, and destination affect the interpretation of the communication piece" (McGuire, 1989). A person receives and processes information in the context of his or her own life experience. Shared customs and practices of a population influence what a person finds important: what they notice, prioritize, or distrust in health communication.

Studies show that a person receives information better when the source of that information demonstrates competency, trustworthiness, and social desirability (Worchel et al., 1978 & Andreoli, 1978 & Aronson, 1962). Discernment of competency, trustworthiness, and social desirability is associated with similarity of the information source to the recipient (Simons et al., 1970 & Suitor et al., 1995). Perception of similarity

is usually based on demographic factors or attitudinal factors, such as a person's interests, values or beliefs (Berlo et al., 1969).

For health communication, perceptions of similarity in demographic or attitudinal factors influence people differently. Specifically, research suggests that audiences that identify strongly with demographic or attitudinal factors are highly influenced by factor similarities between the information source and themselves. Recent Latin American immigrants often identify powerfully with the concept of ethnicity (Deshpande, 1986). Emphasizing cultural factors of the Latin American ethnicity in health communication may influence the population's perception of message relevance. For example, if the concept of family is important in the Latin American community, health communication pieces that acknowledge the importance of family health may seem more valid to the community.

Approaches to Cultural Specificity

Four perspectives characterize culturally specific health communication design. These are peripheral, evidential, linguistic, and sociocultural approaches. Peripheral approaches communicate relevance to a specific group through visual display. Visual display is affected by choices in colors, images, or fonts. Specific peripheral choices make products more likely to be perceived as familiar and comfortable by the population of interest (Schiffman, 1995). Evidential approaches convey community specific health information. This increases the relevance of a message to the population. It increases the likelihood that the population considers their personal risk for the health issue (Weinstein, 1988). Linguistic approaches seek to improve message receipt by creating products in the dominant language of the population of interest. This improves ease of

message comprehension (Rogler et al., 1987). Sociocultural approaches work to frame issues within the context of social and cultural characteristics of the population of interest. This increases identification with the message and deepens understanding (Resnicow et al., 1999). Considering the goals of these approaches in health communication products may increase efficacy of message processing and behavior change in a specific population.

Latin American Culture

Effects of Cultural Influences in Immigrant Populations

Acculturation is the process of integrating native cultural values with the practices of a dominant culture. Following immigration, a person's past and present cultures collide, creating a blend of both cultures' practices (Sonderup, 2010). US Latin American immigrant populations experience acculturation. Research describes this process through multiple domains. The domains of community identity, religion, patriarchal societal structure, and health perceptions are described below.

Community Identity

The concept of family is influential in Latin American culture. "Familismo" is very important to the Latin American acculturation process and denotes the value of family over individual needs (Añez et al., 2005). Similarly, Latin American culture celebrates loyalty and support between Latin American families. This loyalty and support creates high racial identification and centralized Latin American immigrant communities (Padilla, 1985). Isolation of these communities from outside society can slow the acculturation process. This slow acculturation process can prevent individuals from

accessing outside social services, such as healthcare (Añez et al., 2005).

Historically, Latin American immigrant social networks were divided by country of origin (Padilla, 1985). This could, in part, be due to past geographic isolation of immigrant populations. For example, Cuban immigrant populations aggregated in Miami, while Mexican immigrant populations lived in the Southwestern states (Massey, 2008). Recently, increased geographic distribution of these populations facilitated interactions between the groups (Massey, 2008). Furthermore, systems such as language, media, politics and immigration law, and social pressures such as discrimination subject the specific populations to similar experiences (Garcia, 2011). Equally, research indicates that minority populations who experience similar group-level discrimination in the US are more likely to develop subgroup unity if it is politically advantageous (Padilla, 1985). Thus, though an individual may identify with their country of origin personally, similar experiences, social pressures, and structural constraints lead the Latin American immigrant population to become more blended (Padilla, 1985). Therefore, health communication products should consider Latin American community identity, but may not always need to subdivide by country of origin.

Religion

Faith and the church community are central in understanding Latin American culture. More than two thirds of the population is Catholic, with Protestant being the next largest religious group (Kemp & Rasbridge, 2004). Roughly two thirds of these Latin American church attendees participate in a church with Latin American clergy, services in Spanish, and a large Spanish-speaking population. Church communities influence self-

identity, group membership, individual practices, social structure, and health behavior in the Latin American population (Kemp & Rasbridge, 2004).

Patriarchal Societal Structure

Latin American societies are often based on a patriarchal social structure. This grants the father and first-born son the greatest authority in the home (Kemp & Rasbridge, 2004). Men and women have distinct roles in the community and the household based on their gender. Historically, *machismo* philosophies influence men to be dominant to women and to represent, protect, and provide for the family. Men are pressured to appear strong and courageous (Melhuus, 1996). In contrast, *marianismo* philosophies motivate Latina women to be self-sacrificing, loyal, and dedicated mothers and wives (Stevens & Pescatello, 1973). As such, women are often credited with making familial medical decisions. Yet, men are typically the final decision-makers on family healthcare choices (Smith, 2000). Furthermore, group decisions are common in health behavior, due to a "collectivistic" mentality of the Latin American immigrant community (Gudykunst, 1998). Thus, it is important to target health messages at both men and women.

Health Perceptions

For many Latin American immigrants, the fear of disease is greater than the fear of dying. This affects lifestyle habits and usage of health services (National Alliance for Hispanic Health, 2004). Specifically, fear of diagnosis can lead to delayed usage or non-usage of medical services (Minneman et al., 2012). Framing messages to promote prevention and treatment opportunities can help a person avoid their fear of fatal disease

diagnosis. Specifically, promotion of ChD prevention in the Latin American immigrant population may be effective.

Latin American Culture's Effects on Health Communication

Important Characteristics of Health Communication with Latin Americans

Research has shown that several characteristics make communication with the Latin American population far more effective. The Latin American population prioritizes personalized messages. Personalization can be through language, images, or direct acknowledgement of community need (Santiago-Rivera et al., 2002). Yet, Latin American communities are very aware of disparities between Spanish and English resources available. They are often suspicious of poor quality in Spanish-language documents, but value high quality health communication and promotion materials (Morales et al., 1999). Studies show high quality sources, sponsors, and subject matter, plus visual appeal are important for health communication with Latin American populations (Haas, 1981 & Cooper & Croyle, 1984 & Berlo et al., 1969). In addition, the population prefers sources of information that give action steps and increase the population's perception of having control over health (Sonderup, 2010). Using these characteristics in a framework of health literacy and cultural specificity can increase the efficacy of health communication.

Theoretical Framework

Behavioral theories help explain why certain behaviors exist and what makes them change (Glanz et al., 2008). By applying a theoretical framework to health

communication materials, messages can highlight factors important to the behavior change process.

The Health Belief Model

The Health Belief Model aligns well with the goals of this project. This model asserts that a person chooses to execute a health behavior change based on perception of personal risk for negative health outcome and effectiveness of the behavior change (Glanz et al., 2008). This project will utilize three constructs of this theory: perceived susceptibility, perceived severity, and perceived benefit. Perceived susceptibility describes the person's perception of risk for the negative health outcome. Increased perception of risk may motivate behavior change. Perceived severity describes the perception of negative health consequences due to disease onset. Increased perception of severity may motivate behavior change, as well. Finally, perceived benefits describe the perception of positive outcomes that may result from adopting the behavior change. Increased perception of benefits motivates behavior change (Glanz et al., 2008). The Health Belief Model augments clear communication of the risk and benefit of a behavior.

Diffusion of Innovations Theory

The Diffusions of Innovations Theory models characteristics that determine what behaviors a population changes, why, and how quickly. For this project, key points from this theory guided the design of the health communication product. The health communication product maximized salient concepts from the theory to increase population uptake of the behavior change. Important constructs from this theory include complexity and observability. Complexity is the perceived difficulty of acting upon the behavior change. If the behavior change appears to be difficult, the population is less

likely to act on it. Observability is how visible the behavior change is to the public. Increasing visibility makes a person more likely to attempt the behavior change (Glanz et al., 2008).

Communicating information on ChD in accordance to the guiding principles of the Health Belief Model and Diffusion of Innovations theory can promote increased diagnostic testing.

Conclusions

There is a great need to lessen the disease burden and transmission rates of ChD. To lessen disease burden and transmission rates in the US, it is important that the population primarily affected by ChD receive diagnostic testing. Diagnostic testing rates may increase through health communication and promotion initiatives. This project seeks to create a culturally specific health communication product to promote diagnostic testing of ChD. This product focuses on the population most affected by ChD in the US: Latin American immigrants. Considering needs and preferences for this population in health communication may increase efficacy of the health communication piece. This project considers salient aspects of health literacy, successful health communication, Latin American culture, and behavior change theories.

Chapter 3: Methodology

Chapter 3 describes the methodology of this study. This study aimed to (1) create a culturally specific health communication product to promote Chagas disease diagnostic testing and (2) develop a protocol to guide health communication with Latin Americans in the US. This protocol can be found in *Appendix C*. To meet these aims, this study evaluated techniques of health communication with the US Latin American immigrant population.

With US Latin American immigrant participants, the study employed an iterative, qualitative design. Focus group analysis of health communication products guided the development of a ChD health communications product. *Figure 7* demonstrates the process of product development. Following product development, 2 in-depth interviews compared the first and final drafts of the ChD health communication product in an effort to assess validity in meeting the first aim.

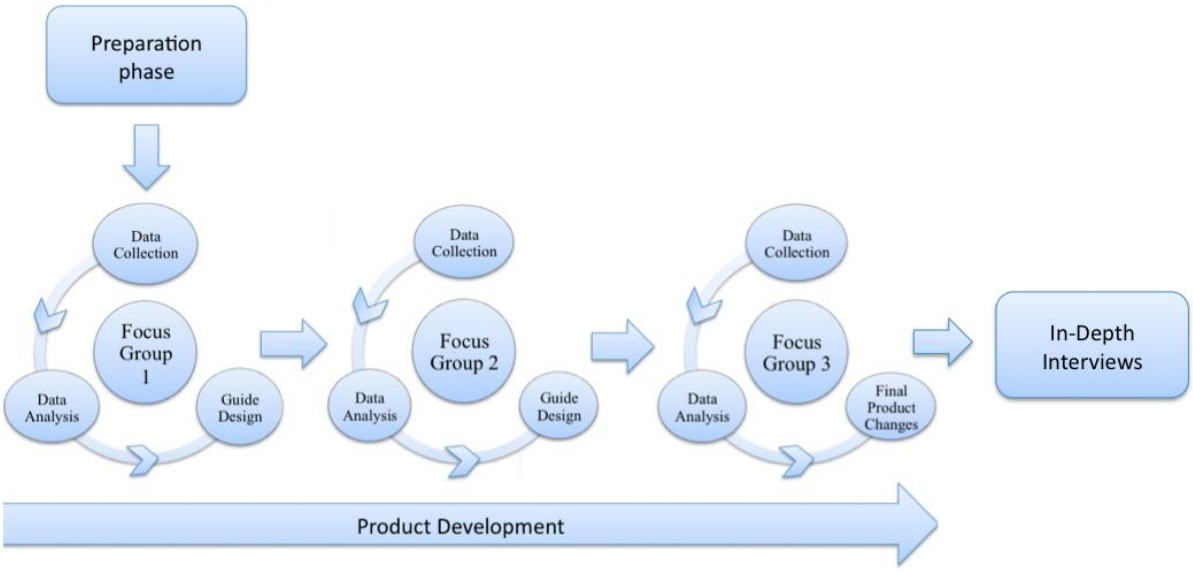


Figure 7. Product development phase diagram

Overview of Product Development Methodology

As shown in *Figure 7*, there were multiple stages in the product development methodology. The stages of product development methodology are divided into (1) the preparation phase, (2) focus group 1 data collection, analysis, and draft product development, (3) focus group 2 data collection, analysis, and draft product development, and (4) focus group 3 data collection, analysis, and final product development.

The preparation phase preceded and informed data collection, data analysis, and product development. It included formative research and coordination of study details. These study details included refinement of the population of interest, recruitment of participants, and arrangement of location for data collection.

Data collection, analysis, and product design occurred in 3 distinct phases. These phases surrounded 3 distinct focus groups. The topics of each focus group resulted from analysis of the preceding phase of the study. The primary researcher chose the topics of the first focus group discussion based on key points from formative research. The first focus group evaluated current sources and examples of health communication products. Analysis of this data guided the initial drafts of the ChD health communication product. The second focus group discussion evaluated the initial drafts of the ChD health communication product. Analysis of this second focus group directed revisions and refinement of the preferred initial draft to a semi-final product of the ChD health communication product. The third focus group evaluated this semi-final product. The third focus group also clarified preferred product endorsements and routes for product distribution. Analysis of focus group 3 lead to final revisions to the semi-final draft of the

ChD health communication product. These revisions resulted in a final product. The details of each phase are described below.

Preparation Phase

Formative research and preparation preceded data collection and product development. *Figure 8* demonstrates how the preparation phase informed this process.

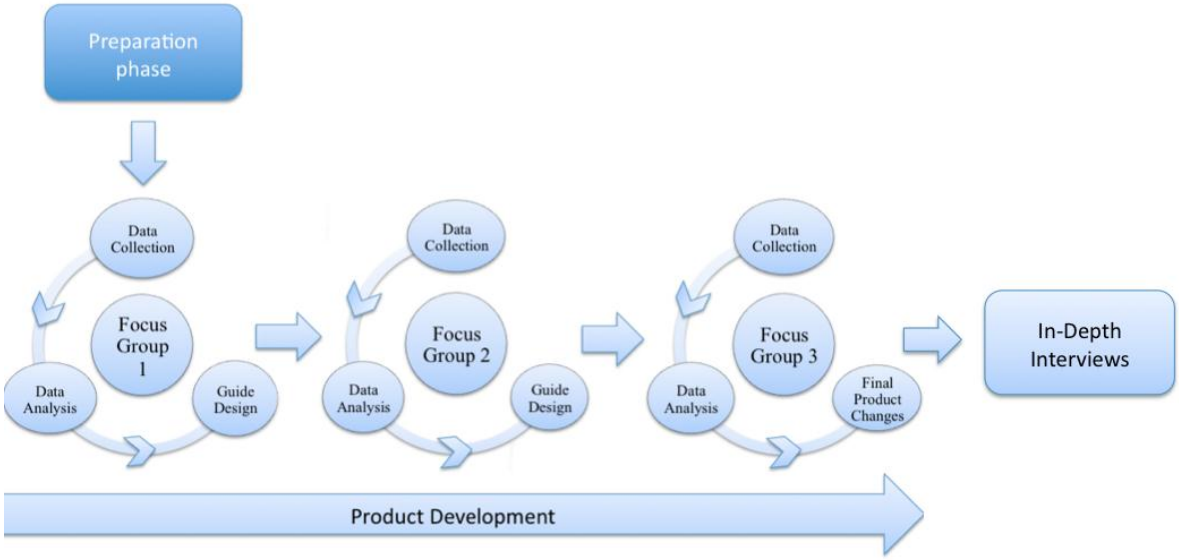


Figure 8. Preparation Phase Placement

Literature Review

The literature review for this project summarized available research on Chagas disease, Latin American immigrant populations in the US, health communication, health literacy, the Health Belief Model and the Diffusion of Innovations theory. The primary researcher collected information on ChD disease epidemiology, effects, diagnosis, and treatment. She isolated the population of interest for this study as those primarily affected by ChD in the United States: Latin American immigrants. The primary researcher then

collected information on the Latin American immigrant population. Information included immigration rates, demographic characteristics, health communication preferences, and cultural characteristics. She evaluated information on health literacy to improve communication techniques with this population. Finally, she reviewed the Health Belief Model and Diffusion of Innovations theory to more effectively facilitate behavior change. This information helped to inform the design of the health communication product throughout the project.

Health Belief Model

The Health Belief Model guided the development of the ChD health communication product. This model claims that a person chooses to change behavior when both perceived risk for negative health outcome and perceived effectiveness of behavior change are high. Utilizing relevant constructs from the Health Belief Model informed product design to better motivate behavior change. For the purposes of this project, the constructs chosen include: perceived susceptibility, perceived severity, and perceived benefits to behavior change. These constructs, their definitions, and how they are applied in this project are described in *Table 1* below.

Table 1. Constructs used from the Health Belief Model

Construct	Definition of Construct	Application of Construct
Perceived Susceptibility	The concept of risk for getting the disease.	Communicating increased risk of ChD in the Latin American community may motivate Latin American immigrants to get tested.
Perceived Severity	The concept of negativity of disease symptoms.	Describing morbidity and mortality of ChD communicates immediate need for diagnosis and treatment in the Latin American community.
Perceived Benefits	The concept of how changing behavior will lead to good health.	Communicating positive outcomes for ChD treatment and prevention may motivate Latin American immigrants to be tested.

Diffusion of Innovations Theory

The Diffusion of Innovations Theory also shaped the development of this project. This population-level theory describes what innovations a population adopts, why they adopt it, and how quickly. Select constructs from the Diffusion of Innovations theory guided methods of increasing usage of the ChD health communication product. These constructs include: complexity and observability. These constructs, their definitions, and how they are applied in this project are described in *Table 2* below.

Table 2. Constructs used from the Diffusion of Innovations Theory

Construct	Definition of Construct	Application of Construct
Complexity	The perceived difficulty of the behavior change.	Focusing the message on simple actions that are familiar to Latin Americans, like talking to a doctor, makes asking about ChD seem easier to do.
Observability	How visible the behavior change is in the community.	Positioning the health communication product in places that are frequently observed by the Latin American population will increase visibility of the product. This will increase likelihood of behavior change.

Study Population and Study Design

This study used a series of three focus group discussions with Latin American immigrants in the Atlanta area to develop a culturally sensitive health communication product. This project focused on Chagas disease for the content of health information.

Recruitment

The population of interest for this study is the population primarily affected by Chagas disease in the US: immigrants from Mexico, Central America, and South America. The study's inclusion criteria required participants to be: Latin American immigrants, Metro Atlanta residents, 18 years of age or older, and fluent Spanish-speakers.

The primary researcher initially contacted participants at the Holy Innocents Episcopalian School in Sandy Springs, Georgia. Contact occurred during a Horizons Program event. The Horizons Program is an educational opportunity that seeks to provide academic, cultural, and recreational enrichment (Horizons Program, 2013).

The Horizons Program serves many Spanish-speakers. This motivated the study team to recruit from the program. The Horizons program also helped avoid a potential challenge in recruiting Latin American immigrants: common distrust towards social research (Rhodes, 2006). A method of overcoming this distrust is through utilizing community gatekeepers (Sixsmith, 1999). Community gatekeepers can include organizations that are trusted in the community, such as the Horizons Program.

At first contact, the population received explanatory flyers and a description of the study intent. If participants showed interest in the project, the primary researcher collected names and phone numbers to coordinate focus group discussions. The primary researcher conducted all interactions with Latin American immigrants in Spanish. This helped increase feelings of comfort and ensure Spanish fluency.

Study Site

Within several days of first contact at the Horizons Program event, the primary researcher called individuals to re-explain the study and check inclusion criteria. If the participants met the inclusion criteria, the primary researcher invited the individual to participate in the first focus group. She also gave him or her directions to the study site. The study site was the Sandy Springs Public Library. The primary researcher selected the Sandy Springs Library as the study location based on its proximity to the initial recruitment site. It is also a landmark in the community and offers communal space for focus group discussions. At the first focus group discussion, the primary researcher ensured the convenience of this location for participants. Similarly, she asked participants to suggest days and times for focus group discussions to maximize continued attendance.

Focus Group Discussions

This study included a series of 3 focus group discussions. The primary researcher asked participants to attend all 3 focus group discussions. This repeated attendance was important to maintain consistency and familiarity throughout the project. To encourage repeated attendance, the primary researcher contacted the same 18 potential participants preceding each focus group discussion. The primary researcher contacted 18 people due to anticipated attrition in focus group attendance. She did not expect all 18 people to attend each session.

This study sought to maintain focus group discussion sizes of 6-8 participants at each session. This is a focus group size recommended for qualitative research practices (www.howto.gov). In the end, a total of 12 Latin American immigrants enrolled in at least one focus group discussion. 6 participants attended each of the first 2 focus group discussions, while 7 attended the third focus group discussion. Several participants attended all focus group discussions and there was further overlap of attendees between all groups.

Administration of Focus Group Discussions

Preceding the start of each focus group discussion, the primary researcher explained the goals of the study. She also clarified the purpose and expected time commitment of the specific focus group. If participants agreed to continue, she consented each person.

For consent, the primary researcher gave each participant a written statement of study information. This statement can be found in *Appendix A*. Participants had an opportunity to read the written statement and ask questions. Once questions were

addressed, the primary researcher obtained oral consent from each participant. Oral consent was the preferred method of consent as (1) The only record linking the Human Subject and the research is the consent document and the principal risk of participation would be potential harm resulting from a breach of confidentiality, and (2) the research presents no more than minimal risk of harm to Human Subjects and involves no procedures for which consent is normally required outside of the research context. Emory University IRB gave approval to collect oral consent. The research team destroyed all contact information immediately following the completion of the project.

Before beginning the focus group discussion, the primary researcher disseminated Publix gift cards to compensate for participants' time and costs. Participants in the 1st focus group received a $20 gift card. The first focus group discussion was the most time intensive. The primary researcher limited it to 1 hour. At this first discussion, all participants received the same gift card amount, though 1 person left the discussion 10 minutes early. Participants in the 2nd and 3rd focus groups received a $10 gift card at each discussion. Each of these focus groups lasted about ½ an hour.

The primary researcher documented consent and compensation. She required participants to mark a previously created table with check marks when consented and compensated. After compensation, participants gathered at a table. At the table, the research team provided light refreshments. Once everyone joined the table, the primary researcher began the focus group discussion.

One moderator guided the focus groups and one note-taker documented the discussion. All study staff conducted focus group interactions in Spanish. The study staff did not audio-record the first focus group, by preference of the participants. Both the

primary researcher and note-taker took stringent notes to compensate for this limitation. However, they did audio-record the subsequent two focus groups. The study staff destroyed these recordings following project completion. To protect confidentiality throughout the analysis process, the primary researcher kept all focus group documents and recordings on a password-protected laptop.

Survey Development

At each focus group discussion, study staff distributed a demographic Spanish-language survey. This survey can be found in the *Appendix B.* The survey assessed general information on gender (male or female), age (in years), and civil status (married, divorced, single, widowed or separated). It collected cultural information such as principal language (English, Spanish, indigenous language or other), country of birth, and previous countries of residence. The survey also collected length of time spent in countries of residence and the type of region (urban, semirural, or rural) lived in. Finally, the survey collected education and income information by educational level (primary school or less, middle school or less, high school or less, some university, university or post-graduate studies) and income (per week, month or year). The primary investigator used this information to characterize demographic components of the focus group participants.

Focus Group Data Collection and Analysis

Each focus group discussed a specific aspect of health communication messages. Data collection and analysis of each focus group informed the content of the subsequent

focus group. Discussion guides are available in *Appendix B.* The primary researcher analyzed each focus group through recursive abstraction methods, with categorization into key constructs of data analysis. These key constructs of data analysis are described below. The primary researcher completed recursive abstraction within several days of data collection. Recursive abstraction is a process where the data are summarized in multiple rounds to extract key points. In this project, the primary researcher summarized data from note-taker and moderator notes and, for the second and third focus groups, audio-recordings. After summary of each data source, the primary researcher compared and contrasted crosscutting themes of the sources into key points. In combination with the literature review, these key points guided the development of each draft of the ChD health communication product.

The primary researcher chose this method of analysis because it offers the opportunity to consider, synthesize, and extract all data from the participants. Each comment was important in shaping product development. This method allowed for a very broad perspective in data analysis, while still being grounded in key constructs for consideration.

Key constructs of Data Analysis

Formative research highlighted several constructs important to the implementation of this project. The primary researcher evaluated these constructs in data analysis of the focus groups. She then used them to guide product development. The key constructs of data analysis included visibility of the product, visual appeal, content, comprehensibility, and cultural sensitivity. These constructs are described below:

Visibility of the Product

The visibility of the product describes the likelihood that a person from the population of interest will notice and read the product. Relevant topics to this concept include preferred methods of communication and popular channels of communication.

Visual Appeal

Visual appeal describes physical attractiveness of the product. This may influence whether a person from the population of interest reads the content presented. Studies show that visual appeal is important to the Latin American population. Visual appeal encompasses topics such as chosen images, color palate, layout, and font size and style.

Content

Content describes the information provided in the product. Content can describe the subject or level of detail of the information. Discussion of this concept determines the structure of information presented, the breadth and background on information provided, and how one could take actions to increase healthy behaviors.

Comprehensibility

Comprehensibility is closely tied to content. This concept evaluates how readable and understandable information is. Evaluating comprehensibility helps ensure that information provided is sufficient to help participants increase healthy behaviors. It ensures only essential information is supplied to avoid confusion. It includes concepts like wording and communication methods.

Cultural Sensitivity

Cultural sensitivity evaluates the relevance of the health communication message to the Latin American population. This is through content, language, style, and

distribution channels. Cultural sensitivity includes elements such as image preferences, wording, religion, commonly utilized institutions, like Univisión, and typical stereotypes.

Focus Group 1

The first focus group assessed the types of health communication seen, processed, and utilized by the population. Participants discussed communication channels they use, with focus being placed on print materials. Print materials were the most feasible product type for this project based on limited resources. The participants also evaluated several chosen examples shown in the Results section. Participants evaluated these examples for visual attractiveness, message relevance, clarity, and perceived quality of content. *Figure 9* shows where focus group discussion 1 fits into the project methods.

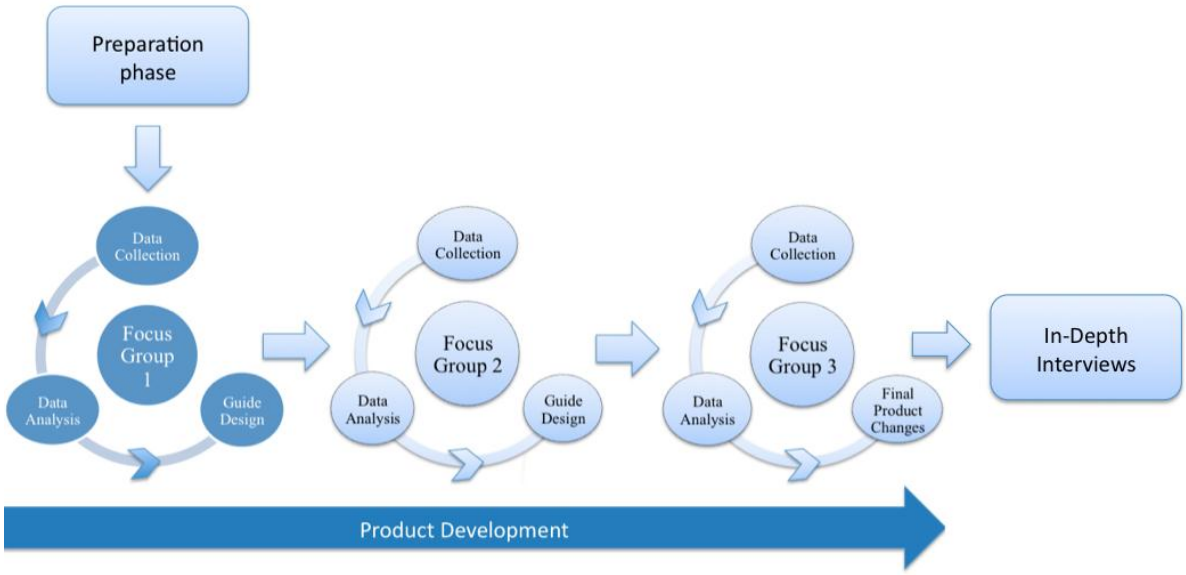


Figure 9. Focus Group 1 Placement with Product Development

Based on the analysis of focus group 1, the primary researcher developed several drafts of the ChD health communication product. These drafts were to be evaluated and critiqued by the study participants. Thus, the primary researcher designed focus group discussion 2 to critique the drafts developed following focus group 1.

Focus Group 2

The second focus group critiqued the initial drafts of the project's health communication product. Participants evaluated strengths and weaknesses of each draft. Visually, participants discussed image preferences, color combinations, borders, font size and presentation, and the layout of each draft. For content, participants discussed wording of text, amount of text, amount and quality of information, and ease of message comprehension. They also discussed their ability to translate the health message into action. Throughout the discussion, participants evaluated perceived cultural specificity for their community. *Figure 10* shows the position of focus group 2 in this project.

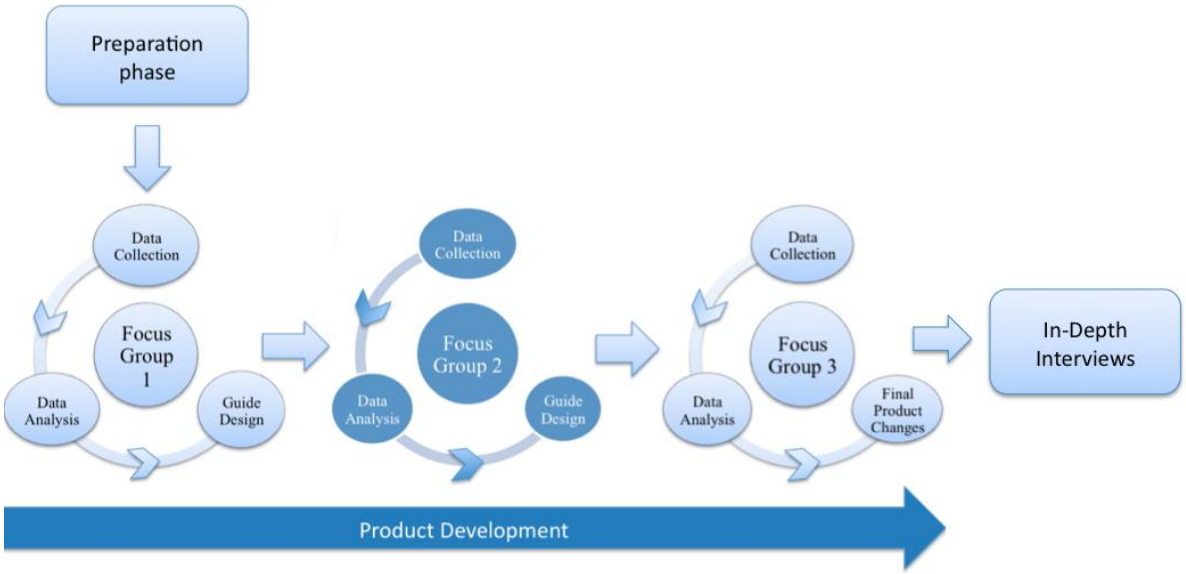


Figure 10. Focus Group 2 Placement with Product Development

Based on analysis of focus group 2, the primary researcher refined the preferred draft of the health communication product into a semi-final draft. The primary researcher planned the third focus group to evaluate this semi-final draft once more. The third focus group also evaluated preferred methods of dissemination and addressed any remaining questions.

Focus Group 3

The third and final focus group evaluated the semi-final product, asking for any further changes to the draft's look or content. Participants then discussed possible distribution channels. The moderator encouraged participants to discuss specific examples within these distribution channels. Specific examples include names of magazines or newspapers. *Figure 11* shows the placement of focus group discussion 3 in this project.

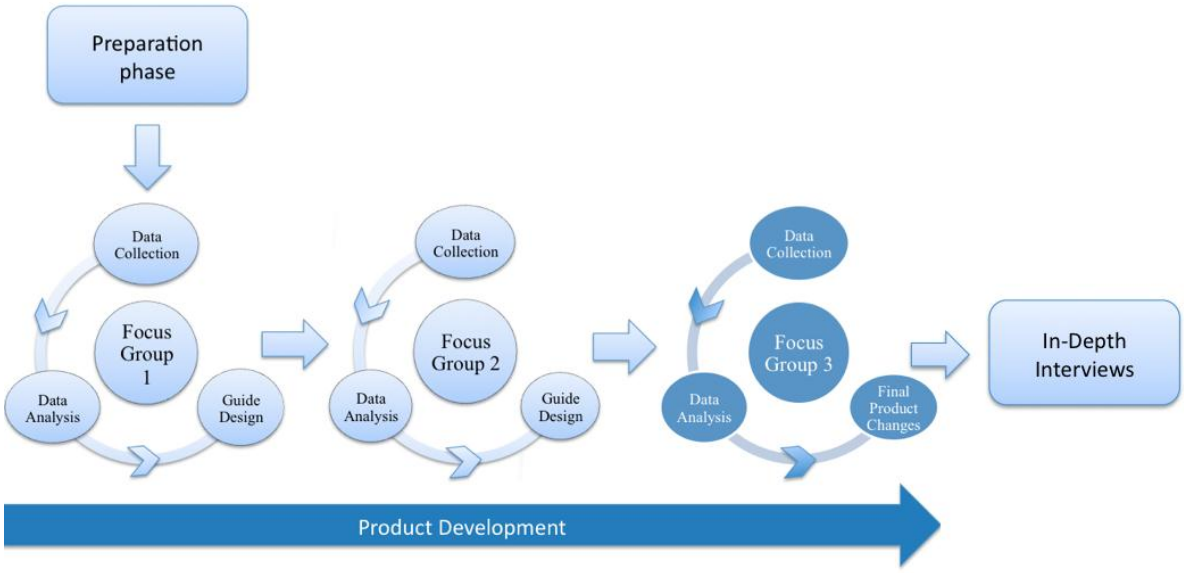


Figure 11. Focus Group 3 Placement with Product Development

Participants suggested endorsements in the second focus group. Yet, they did not specify which endorsers they preferred. To clarify, the primary researcher asked participants to suggest and rank examples of endorsers in the final focus group.

Utilizing these key points from focus group discussion 3, the primary researcher refined the semi-final draft of the health communication product into a final product. She

also created a ranking of the participant's preferred endorsement images. Finally, she created a list of specific options for product dissemination. This completed product development.

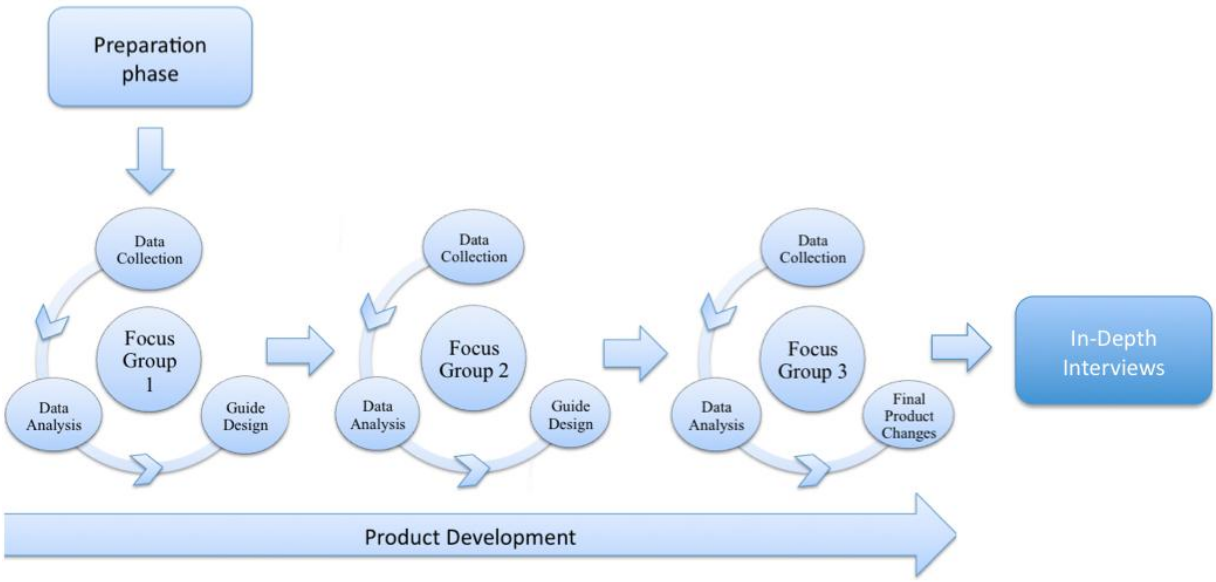


Figure 12. In-Depth Interview Placement with Product Development

In-Depth Interviews

Following completion of the final product, the primary researcher conducted two in-depth interviews. The goal of these in-depth interviews was to verify the conclusions drawn through the research and development process and ensure that the process yielded a more culturally specific ChD health communication product. *Figure 12* shows the placement of these interviews in the overall project design.

The in-depth interviews occurred with 2 Latin American immigrants (one male, one female) who did not participate in product development. The interviews compared the overall appeal of the first drafts of the ChD health communication product with the final draft. Without participation in product development, these interviewees gave non-biased perspectives on strengths and weaknesses of the products. This comparison

technique is similar to member checks. Member checks are a research technique where members of the study's population of interest evaluate study findings. This method establishes validity and credibility of study findings (Lincoln & Guba, 1985).

Conclusions on Methodology

The methodology of this study focused on involving the population of interest. Through three focus groups, the participants evaluated preferred characteristics and dissemination routes of health communication products. Based on communication preferences and product critiques, the primary researcher designed a health communication product to promote diagnostic testing of ChD. This product was sensitive to health literacy needs and cultural preferences of the population of interest: US Latin American immigrants.

Chapter 4: Results

The goal of this project is to develop a health communication product about ChD through participatory-based, qualitative research. This product should be culturally sensitive and specific to the US Latin American population. This chapter describes the results of this study. It summarizes the demographic survey, the key themes of the 3 focus group discussions, and the in-depth interviews following product completion. These results informed the development of a protocol to guide further health communication with the Latin American immigrant population. This protocol can be found in *Appendix C.*

Demographics

As mentioned, the population of interest for this project is the Latin American immigrant population in the United States. There were 12 participants enrolled in this study. Of these 12, 6 participants attended the first focus group, 6 attended the second focus group, and 7 attended the third focus group. There was participant overlap between all 3 focus group discussions. Based on survey data collected, 66.7% (n=8) of the participants were female. The average age of the participants was 37.8 years old, ranging from 25 to 53 years. 91.7% of the participants considered Spanish their principal language, while 8.3% of participants considered English their principal language. Educationally, 16.7% (n=2) completed less than primary school, 8.3% (n=1) completed less than middle school, 33.3% (n=4) completed high school, 16.7% (n=2) completed some university, 16.7% (n=2) completed university, and 8.3% (n=1) completed graduate school. Their incomes were represented as, 60% (n=6) earned $200-500 per week, 30% (n=3) earned $500-$1000 per week, and 10% (n=1) earned $12,000-24,000 per year. The

survey gave other income options, as shown in *Appendix B*, but no participants selected these options.

In regards to where the participants were born or lived in Latin America, 58.3% (n=7) of participants were born in Mexico, 16.7% (n=2) were born in Peru, 16.7% (n=2) were born in Venezuela, and 8.3% (n=1) were born in Cuba. Previously, 58.3% (n=7) of participants lived in Mexico, 16.7% (n=2) lived in Peru, 16.7% (n=2) lived in Venezuela, 8.3% (n=1) lived in Cuba, and 8.3% (n=1) lived in the Dominican Republic. The average years lived in these countries was 18.2 years, ranging from 8 to 37 years. All participants lived in urban areas in Latin America. This demographic information is shown in *Table 3* below.

Table 3: Demographics of study participants

Measure	**Response**			
	N	%	Mean	Range
Sex	**12**			
Male	8	66.7		
Female	4	33.3		
Age (in years)	**11**		37.8	25-53
Civil status	**12**			
Married	9	75		
Divorced	1	8.3		
Single	1	8.3		
Separated	1	8.3		
Principal Language	**12**	91.7		
Spanish	11	8.3		
English	1			

Table 3 continued: Demographics of study participants

Measure	**Response**			
	N	%	Mean	Range
Highest level of education	**12**			
Less than primary school	2	16.7		
Less than middle school	1	8.3		
High school	4	33.3		
Some university	2	16.7		
University	2	16.7		
Graduate school	1	8.3		
Income	**10**			
$200-500 per week	6	60		
$500-1000 per week	3	30		
$1200-24,000 per year	1	10		
All other options	0	0		
Country of birth	**12**			
Mexico	7	58.3		
Peru	2	16.7		
Venezuela	2	16.7		
Cuba	1	8.3		
Latin American countries lived in (multiple responses allowed)	**13**			
Mexico	7	58.3		
Peru	2	16.7		
Venezuela	2	16.7		
Cuba	1	8.3		
Dominican Republic	1	8.3		
Years lived in these countries	**11**		18.2	8-37
Regions lived in of these countries	**12**			
Urban	12	100		
Suburban	0	0		
Rural	0	0		

Focus Group Discussion Results

Key preferences of health communication emerged through recursive abstraction of the 3 focus group discussions. These key preferences guided the design of this project's health communication product. In this way, the product was more culturally sensitive and specific to the Latin American population of interest. Results of each focus group are described below, categorized by health literacy factor and this study's key constructs of data analysis.

Focus Group 1

Civic Literacy in Product Visibility

Focus group discussion 1 started by evaluating the participants' previous experiences with health communication messages. Discussing these experiences showed what communication methods reach and influence the participants in daily life. Participants used various communication channels. They also referred to seeing health information in specific examples of these communication channels. Below, *Table 4* describes specific examples mentioned, categorized by type of communication method.

Table 4. Specific Examples of communication products used

Communication Channel	Specific examples used of the communication channel
Magazines	Entertainment magazines Parent Magazine Medical journal papers
Newspapers	Local, Spanish-language newspapers El Mundo Hispánico
Internet	Facebook News sites Search engines Email
Television	News channels Mundial CNN español Televisa Canal 34 or Univisión Telemundo
Radio	Martha de Bayle Radio México Primarily health radio on any station • On topics such as: Nutrition, diabetes, cancer, cholesterol, obesity, child health, education, drugs, sex, overall health
Posters	Doctor's offices Church In public

Participants stated that the most commonly consumed communication channels were television, radio and magazines. Both men and women watched television. The majority of the time television programs were in Spanish, though several participants watched news channels in English, as well. Similarly, both men and women consumed a

lot of radio, including health radio. These radio channels were often Spanish-language channels. One participant mentioned also listening to English-language radio for news and health information. Women cited magazines more often than men. Participants claimed many magazines are only available in English.

All participants mentioned reading newspapers, but they used them less often than television, radio and magazines. Men claimed to read newspapers more frequently than women. Participants preferred Spanish-language publications. Both men and women cited using Internet to stay connected with friends and family through social media or email. They discussed reading online Spanish news and searching for information. Participants said they rarely used Internet for entertainment.

Participants viewed other forms of communication less often. Participants cited observing posters at doctor's offices, in church or in public. They acknowledged noticing posters less than other sources of communication. In addition, one participant was a retired medical doctor and therefore mentioned reading medical journal articles in both English and Spanish regularly.

Preferred Characteristics of Health Communication

After discerning that participants viewed health messages, discussion focused on why participants perceived these messages as important. Participants discussed specific reasons for noticing health messages. They also discussed information desired in these health messages. Finally, they evaluated best methods to draw attention to the product. These reasons are summarized in *Table 5* below:

Table 5. Preferences for health communication products

Reasons to notice health messages	Desired information on the health issue	Methods to draw attention

• To protect the family
• To stop contagious disease transmission
• The piece looks high-quality
• The piece shows a recognized logo
• They need information on a specific topic
	• Name
	• Effects
	• Where they can go for:
	  ○ Treatment
	  ○ Information
	• Who is affected
	• Methods of prevention
	• Risks and damages
	• Warnings
	• Timeline of required action
	• Price of Services
		• Show families and babies
		• Focus on methods of prevention
		• Use bright colors
		• Create high quality designs
		• Use more images than text
		• Personalize messages
		• Keep information simple, specific, and short

Cultural and Scientific Literacy in Product Content

Participants cited specific reasons to notice and act on health messages. The most common of these reasons was to protect the family. Specifically, one mother said:

"Necesito consultar respecto a la salud de mi nena/I need to check on my baby's health."

One other mother said she paid special attention to messages that may help to stop a contagious disease from passing to or within her family. This mother also said she looks for specific information sometimes:

"En ocasiones, específicamente busco información sobre algunas preguntas /Sometimes I specifically look for information about certain questions."

Other participants cited the importance of knowing how to avoid contagious diseases. One woman said:

"Siempre estoy preguntándome en cómo evitar una enfermedad?'/I'm always questioning how I can avoid illness?"

To feel prepared, they wanted health communication products to give certain information. Participants cited wanting to know what the disease is called, what it can do to a person, and how to cure it. Participants also strongly emphasized the importance of communicating preventive methods.

One woman said she wants to know:

"Con quién podría hablar?/Who could I talk to?"

One father wanted to see information on the urgency of treatment for a disease and if the disease can result in an emergency. He said:

"La información debe ser verdadera…digo…y explicar si existe prisa o no./The information should be true…I mean…and explain if there is a rush or not."

Finally, all participants agreed that one thing they often want to know about a health service is:

"Precio/Price!"

Fundamental and Scientific Literacy in Product Comprehensibility

Participants advised keeping information specific and short, with more images than text. This was important because, as one bi-lingual woman said:

"Mucha gente no sabe leer/Many people do not know how to read."

Another woman added that many people do not have the educational base to comprehend health messages. She gave an example about X-rays, saying:

"Si no conocen la función del X-ray, no van a comprender su utilidad/If they are not familiar with an X-ray, they will not understand the usefulness of an X-ray."

It is important to explain necessary scientific information. Yet, if a piece is too long or complicated, viewers stop reading. If viewers stop reading, they insufficiently receive the message.

Cultural Literacy in Product Visual Appeal

This study showed visual appeal in health communication to be important to the US Latin American immigrant population. One father said that high quality products drew his attention and trust:

"Usualmente leo lo que se ve bien /I usually read what looks good."

His wife added that endorsements can help improve perception of source quality. She said:

"Los logotipos llaman mi atención…si los reconozco./Logos grab my attention…if I recognize them."

Several of the other participants agreed with this idea. Participants also suggested increasing trustworthiness through high quality, well-made designs. These designs should feature images of families or babies. They also agreed that bright colors attract attention. One father said:

"Rojo enseña peligro/Red shows danger."

Civic Literacy in Product Visibility

Participants advised several techniques to increase visibility of print health communication products. They noted the importance of utilizing audience-specific channels, like common magazines. Participants said audience-specific channels of

communication were better than non-specific sources, such as general pamphlets. Participants said they would pay particular attention to products that communicate need within their own community or population.

Using Health Information

Following discussion of obtaining health information, the group discussed actions taken once they receive a health message. Participants stated that, in general, if a message is not interesting, they do not consider it. If they do not consider it, they do not act on it. However, participants said that if the product is interesting, they act in several ways. Both men and women said that they often investigate interesting information further. For this investigation, they cited multiple information sources. They said that if they are still concerned with this health issue after investigating it, they talk to a doctor.

One woman described communicating new information to her family, especially her sisters. She asked her family members:

"¿Has escuchado del problema de…? /Have you heard of the problem of…?"

If her family knew about the problem she would continue to talk about it with them. If they did not, she would tell them about it. One mother declared that, she liked to stay up-to-date on vaccinations. She said,

"Mis hijos siempre son vacunados /My kids are always vaccinated."

Ensuring a message is interesting to the population may increase likelihood of message uptake and action.

Evaluating Example Health Communication Products

After general discussion of health communication, participants evaluated several specific examples of health communication pieces. This section summarizes why the primary researcher chose the example images and what the participants said about them. The tables following each image describe the primary pros and cons of each piece. Results are supported following these tables, categorized by health literacy factor and this study's key constructs of data analysis.

Example #1:

This example was an invitation to a discussion on the HPV vaccine. It targeted Spanish-speakers. The primary researcher selected this example because it was very personalized and audience-specific. For example, the layout presented the content as an "Invitación/Invitation." It started with a personal question: "Debo usar la vacuna del HPV/Should I get the HPV vaccine." Furthermore, the example gave brief, specific information. The wording made a strong connection between an action and avoiding a negative health outcome. It called the HPV vaccine "la vacuna contra el cancer/the vaccine against cancer." However, the example did not supply much scientific or medical information.

Example #1 (Clínica Ciudad del Mar, 2012)

Table 6. Pros and Cons of Example #1

Pros	Cons
• Specific contact information • Clear connection between image and information • Specific target audience	• Did not supply enough information (i.e. connection between HPV and cancer) • Not as visually attractive as other options

Cultural Literacy in Product Visual Appeal

Participants saw several pros and cons with this example. They found it to be less visually attractive than the other options. One woman said,

"Eso tiene las indicaciones semiborradas/This has draft-like characteristics."

This quote showed her perception of low quality. Low visual attractiveness decreased the participants' likelihood of noticing the product.

Scientific Literacy in Product Content and Comprehensibility

Participants thought this draft did not supply enough information connecting HPV and cancer. For people with little scientific background, this product did not communicate sufficient need for vaccination. The participants did like the connection between the image of the vaccine and the words about vaccination. This reinforced the message.

Civic Literacy in Product Content

Participants liked many civic literacy factors. All participants agreed that the specific contact information was good. Specific contact information allowed them to

access further information. The participants also thought the specific audience of women was important because it communicated who should pay attention to the message.

Example #2:

This example targeted women to promote the HPV vaccine. The primary researcher chose this example because of how it communicated the health message. Though the text was short and simple, enough information may not have existed to fully communicate importance of the message. The example did not give any action steps or disease information. Furthermore, the primary researcher thought it may be important that the ethnic background of the model was unclear.

Example #2 (Tu espacio (y el mio), 2012)

Table 7 Pros and Cons of Example #2

Pros	Cons
• The image drew attention because it appeared to be a teenage girl • Not many words • Medical setting	• Did not supply enough information (i.e. connection between HPV and cancer) • Did not refer you to further information • Did not offer contact information

Cultural Literacy in Product Visual Appeal

Participants viewed this image positively. One woman said,

"La foto de la niña capto mi atención/The photo of the girl caught my attention."

Several other participants liked the medical setting of the image.

Scientific and Civic Literacy in Product Comprehensibility

Participants also liked that the example had few words, though they thought it did not supply enough information on HPV and cancer. Similarly, participants did not like that the example did not refer viewers to further information or contacts.

Example #3:

The primary researcher chose this example because it supplied a lot of information. The example discussed the HPV vaccine, but explained a lot about cancer prevention. It started with "el cáncer de cuello de útero se puede prevenir/cervical cancer can be prevented." It then discussed options to obtain this vaccination with specific details about time, money, and location. Less information discussed how the vaccine works. Overall, this product was very text heavy and the font was often difficult to read.

Example #3 (HPV=VPH, 2012)

Table 8. Pros and Cons of Example #3

Pros	Cons
• Supplied a lot of information • Looked "official"	• Too wordy • The image was not relevant (no context) • The woman was smiling when discussing cancer and that made no sense

Fundamental Literacy in Product Comprehensibility and Visual Appeal

Participants saw strengths and weaknesses in this example, as well. Participants thought this example supplied a lot of good information, but was too wordy. One woman said,

"Hay mucha información/There is a lot of information."

But when asked if she would read it, she said no. Another woman explained,

"Mucha gente no sabe leer/Many people don't know how to read."

Low literacy would definitely impact a person's ability to comprehend this wordy message. Several participants thought the photo did not align with the message. The words that drew attention were negative health outcomes, but the woman appeared happy. One woman asked,

"¿Que le hace feliz aun con su enfermedad?/What makes her happy even with her illness?!"

However, participants did agree that a strength of this example was that it looks official and scientific.

Example #4:

This example shifted focus from HPV vaccines to flu vaccines. The primary researcher chose it for several reasons. The message was personalized. It used "informal"

verb conjugations, or the wording one uses with people he or she is familiar with. The wording was also very concise, discussing prevention of the flu in the family. However, the message content did not communicate the risk of flu. The metaphor of the image may have been too removed for the audience to adequately understand the overall message.

Example #4 (Osakidetza, 2009)

Table 9. Pros and Cons of Example #4

Pros	Cons
• Direct and reflexive verbs used to make the message very personal ○ Reflexive verbs are verbs whose agent performs an action directed at its own agent • Talked about protecting your loved ones • Interesting image	• Image was not directly relevant to vaccines or specific to a target audience • Did not refer the viewer to further information • Did not offer contact information

The participants liked the message of this example. They thought the use of reflexive verbs made the message more personal. They also liked the approach of preventing negative health outcomes for the family unit. In contrast, though they said the

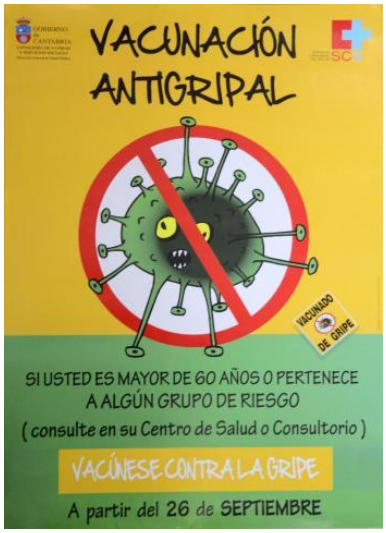
image was interesting, it was not relevant to vaccines or the target audience. One woman suggested,

> *"Puedes agregar una imagen de la vacuna con los regalitos/You can add an image of the vaccine with the little gifts."*

Participants also disliked that the example did not refer the viewer to further information or resources to obtain more information.

Example #5:

This example also promoted the flu vaccine. The primary researcher chose it due to the specific guidelines it offered. The example had a very specific target audience of people over the age of 60, or in another high-risk group. Though, the piece did not define "algún grupo de riesgo/another high risk group." This message gave a specific date to accomplish the vaccination. However, the example's image may or may not have been culturally relevant.



Example #5 (20minutes.es, 2011)

Table 10. Pros and Cons of Example #5

Pros	Cons
• Seemed prevention oriented with the red circle and strikethrough • Specific instructions • Specific target audience • Specific date available • Told you to contact your Health Center for more information • Bright colors	• A person may not recognize what the image is and this could be confusing • Sloppy font choice • Did not look as professional as the others • Could have been more specific with contact information, like a person at a nearby health center

Scientific and Cultural Literacy in Product Visual Appeal

This example offered many pros and cons for the participants. Visually, participants thought the image was unclear. One man asked,

"¿Qué es eso?/What is this?"

Participants worried that many people would not understand the meaning of the image. However, participants agreed that using prevention symbols, like the circle with the strikethrough drew their attention. The bright colors also captured participants' attention. In contrast, they disliked the font choice and thought the design was not professional or medical. One man said,

"Parece un dibujo/It looks like a drawing."

Civic Literacy in Product Content

For content, participants liked that example explained the specific audience. This explanation may promote follow-through of the health message. Similarly, participants thought the detailed information on where to go, for what, and when would increase the

likelihood that a person gets vaccinated. Participants thought even more specific information such as an address or phone number could be helpful.

Summary of other examples

The primary researcher showed other examples of health communication products to participants. However, these other examples yielded repeated discussion. A summary is provided below, categorized by health literacy factor and the study's key constructs of data analysis.

Cultural Literacy in Product Comprehensibility and Visual Appeal

Participants liked fewer words and simple sentences. They favored bright colors, block fonts and clear images. They also desired images of families, children, or babies that were aligned with the message's content and theme (colors, location, emotional state, etc).

Civic Literacy in Product Content

Participants preferred specific dates and timeframes of action with information on prevention. Participants wanted messages that were very personalized, though they agreed health communication was important for wide audiences. One man said,

"[Comunicación de salud] es importante para todos/[Health communication] is important for everyone."

Recommendations for this project

In context of this project's Chagas disease health communication product, participants made several suggestions. These are described below, categorized by health literacy factor and the study's key constructs of data analysis.

Civic Literacy in Product Visibility

Participants recommended use of radio messaging. They stated that, for the population of interest for this project,

> *"Más que nada escuchan la radio…o la televisión, porque no saben leer/more than anything, they listen to radio…or television, because they don't know how to read."*

Unfortunately, limited resources prevented use of these mediums in this project.

Cultural Literacy in Visibility and Visual Appeal

For print material, participants said that visual attractiveness of the product draws the eye before the information does. Thus, they recommended using bright colors and high quality, family-oriented images.

Scientific Literacy in Product Content

In terms of content, little is known of Chagas disease in the population of interest. This novelty may hold viewer attention. One woman said,

> *"¿Qué es eso?…eso me pregunto yo"/What is this?…that is what I wonder."*

The participants thought this internal questioning might motivate the population to continue reading. They suggested supplying sufficient medical explanation to understand the issue. They desired a specific action plan. They also wanted contact information for further information on ChD. The participants suggested the product have a specific target audience and be written in Spanish.

Overall, the key points learned in Focus Group 1 guided the design of several initial drafts of the ChD health communication product. These key points included:

- Designing the product for a magazine or newspaper
- Supplying information to name the disease, define who it affects, stop transmission, and clarify where a person can go for information or treatment
- Personalizing promotion messages on prevention and protection of the family
- Creating a high-quality product with bright colors and more images than text
- Writing text to be simple, specific, and sufficient to promote testing

Participants evaluated the initial drafts in Focus Group 2.

Focus Group 2

Overall product evaluation

Focus group 2 intended to evaluate the drafts of the Chagas disease health communication product. Overall the reviews were positive. Participants agreed that,

"La información tiene sentido/The information makes sense."

One woman said that the product,

"Es muy útil/It is very helpful."

Similarly, another woman recognized the importance of health communication with Latin Americans in the US. She said,

> *"Esto es importante porque doctores en los Estados Unidos no hablan acerca de enfermedades de Latinoamérica/ This is important because doctors in the United States do not talk about diseases from Latin America."*

However, discussion progressed to analyzing racism in health communication. Two female participants worried that this product would increase blame for Latin Americans in creating disease. They worried that the message focused too much on racial determinants of ChD. One woman said that,

> *"La causa de la enfermedad no es porque seas latino/The cause of illness is not because you are Latin American."*

However, after discussing risk factors for ChD, specific communication channels for this product, and language barriers for non-Spanish speakers, participants felt less racism from the design.

Evaluation of the Specific Drafts

Participants made several suggestions while observing and comparing the drafts. Discussion compared the strengths and weaknesses of visual appeal and cultural sensitivity between the drafts. Discussion also analyzed strengths and methods of improving visual appeal, cultural sensitivity, content, and comprehensibility of all the drafts. Comments on the drafts below summarize salient points of this discussion. The salient points are further described below the drafts, categorized by health literacy factors and the study's key concepts of evaluation.

Draft #1:

Draft #2:

Draft #3

Draft #4:

Participants preferred draft #1 of the health communication product due to the image and layout. These preferences are written below.

Cultural Literacy and Fundamental Literacy in Product Visual Appeal

Participants favored the image of draft #1over the images of other drafts. They preferred the image due to its clarity and depiction of the family. No participant dissented this image. The participants also liked the third image, but felt it less accessible. One woman said:

> *"En la primera no se ve mucho a las personas, en la otra se ve más el estilo de la ropa y a las cosas que trajeron y se ve que no es una familia muy humilde/In the first [draft image] not much is seen of the people, in the other more is seen of the style of clothing and the things they brought and its seen that it's not a very humble family."*

Participants also preferred the layout of draft #1. They preferred this layout for several reasons. One woman said,

> *"Este diseño está perfecto para la información/This design is perfect for the information."*

Participants thought it was easier to read the information on the white background color. They said the yellow border made the draft look organized. The yellow border also made the product more noticeable.

Cultural and Civic Literacy in Product Comprehensibility

Participants liked the positioning of information in draft #1 more than the other drafts. They liked that it immediately addressed information about protecting the family from ChD. They agreed the lack of awareness on ChD would bring attention to this product. As one woman said,

> *"Hay mucha gente que no saben de esa enfermedad/There are many people who don't know about this disease."*

One woman stated that in her home country of Venezuela, ChD was called "el mal de Chagas" and not "la enfermedad de Chagas." She encouraged the primary researcher to change the wording on the product. The primary researcher asked the other participants about the wording change. Other participants said that "la enfermedad" roused deeper feelings on disease severity. They advised the primary researcher to keep the phrasing with "la enfermedad."

The participants recommended highlighting important information about the disease and population of interest. They thought disease information should be moved to the top of the document to attract more attention. They also recommended increasing the size of the font. Participants advised the primary researcher highlight the words "inmigrantes latinos/Latin American immigrants" on the draft. Highlighting this text brings more attention to the population of interest. Participants also requested an endorsement. Endorsements make the information seem more reliable.

Scientific Literacy in Product Content

Participants were happy with the information presented. But they wanted to know more information about what the disease does. A man asked,

> *"¿Por qué no menciona los problemas? Sería mejor avisarnos sobre los problemas/Why doesn't it mention problems? It would be better to alert us to the problems."*

This information would increase a person's likelihood of acting on the message. One woman suggested including an image of the insect vector, so that people would see how the disease is transmitted. She instructed,

> *"Lo que debes hacer es buscar en la internet sobre una foto del animal…el animal que causa esta enfermedad/What you should do is search the internet for a photo of the animal…the animal that causes the disease."*

The primary researcher considered these suggestions from focus group discussion 2 to develop the semi-final draft. Key points included:

- Using the preferred draft (draft #1) due to the picture and yellow border
- Modifying images to include the US in the map and the insect vector
- Adding an endorsement
- Emphasizing the population of interest in the text
- Highlighting the effects of avoiding diagnosis and treatment

Participants critiqued the semi-final draft in focus group discussion 3.

Focus Group 3

Semi-final Draft Evaluation

In the third focus group, participants evaluated the semi-final draft of the Chagas disease health communication product. They approved all modifications made in response to the second focus group. They also suggested several other changes.

Specific critiques of the semi-final draft of the ChD health communication piece are indicated on the semi-final draft below. These comments are explained below the semi-final draft. Explanations are categorized by health literacy factor and the study's key constructs of data analysis.

Semi-final draft:

Scientific Literacy in Product Content

Participants asked for further information on the insect vector to accompany the picture. The group helped word this information to be:

> *"La picadura del triatomino puede transmitir el parasito a los humanos/The bite of the triatomine insect can transmit the parasite to humans."*

Fundamental Literacy in Product Comprehensibility

Participants revised the repetitive second sentence below the picture from "un diagnóstico temprano/early diagnosis" to "una detección temprana/early detection." This made the paragraph smoother and easier to follow.

Civic and Cultural Literacy in Endorsement evaluation

The participants created a list of endorsements they see or would like to see in health communications. They then rated which endorsement sources attracted their trust and attention. They ranked them as follows:

1. Univisión TV station
2. Northside Hopsital (Atlanta-area hospital with high Latin American usage rates)
3. Parent Magazine
4. Centers for Disease Control and Prevention (headquarters are in Atlanta)
5. Churches overall (of various denominations)

Participants ranked churches last because of the variability in denomination and inconsistency between communities. One woman said,

> *"Con iglesias, depende de la comunidad porque hay muchas iglesias por cada comunidad no solo hay una/With churches, it depends on the community because there are many churches for every community, there isn't just one."*

Participants liked endorsements from the Centers for Disease Control and Prevention and Northside Hospital because of their medical esteem. However, participants advised that many people do not know about the Centers for Disease Control and Prevention, making the endorsement ineffective. This is why they ranked it fourth. Similar to the diversity of churches attended, the population attends a variety of local hospitals. A wide audience would not trust a local hospital from another area. Participants cited preference for a local hospital, such as Northside Hospital in Atlanta, GA. This is why participants ranked Northside Hospital second. In contrast, channels such as Parent Magazine or Univisión are well recognized in the population. Parent Magazine has lower usage than Univisión. Thus, participants ranked Parent Magazine third. No participants contested the endorsement of Univisión. They cited its wide audience, reliability, and bright colors for ranking it first. One woman described this saying:

> *"Yo siento que Univisión es el mejor, porque hay muchas religiones y hospitales, pero mucha gente sabe de Univisión/I feel that the one from Univisión is best, because there are many religions and hospitals, but many people know of Univisión."*

Participants asserted that recognized endorsements increase visibility of a product.

Civic Literacy and Possible Dissemination routes

Finally, the focus group discussion analyzed possible dissemination routes for this health communication piece. Favored print mediums included:

- Mundo Hispánico a local newspaper
- Padres e Hijos a local magazine
- Unión a local newspaper
- Parent magazine

Considerations from this final focus group guided revisions to the semi-final draft. Key points of the focus group included:

- Adding written information on the insect vector
- Rewording specific text for clarity
- Switching the endorsement to Univisión

The revisions to the semi-final draft produced the final product of the ChD health communication piece.

Final Product Development

Following the final focus group, the primary researcher added further information on the insect vector, reworded the second sentence under the image and added an Univisión endorsement. This resulted in the final project, shown below. This final product is also available in *Appendix D.*

Final product:

(Praise Houston, 2010 & CDC, 2012e)

Member-check In-depth Interviews

Following final design changes to the product, it was important for the primary researcher to verify study conclusions. This verification ensured that the research process yielded a more culturally specific ChD health communication product. To verify study conclusions, the primary researcher interviewed 1 man and 1 woman who were Latin American immigrants. The interview participants did not participate in the product development process. They were not included in the demographic description of the focus group participants.

The interviews compared the first drafts with the final product of the ChD health communication product. Responses from these interviews evaluated the validity of the study's conclusions in the population of interest.

In these interviews, the primary researcher asked the participants about the differences between the initial drafts and the final draft of the ChD health communication product. Overall, both participants preferred the final product. Specific reasons are described below, categorized by health literacy factors and this study's key concepts of evaluation.

Cultural Literacy in Product Visual Appeal

The primary researcher asked the participants about general perceptions of the drafts. Both participants preferred the final draft of the ChD health communication product. They cited higher quality of presentation and content for this preference. The man said,

> *"El primer se ve amateur. El segundo se ve más profesional./The first looks amateur. The second looks more professional."*

Both participants credited the final product as more attention grabbing. For example, the man compared draft #2 to the final draft,

> *"El azul como fondo no atrae la atención tanto, blanco es mejor./The blue background doesn't capture attention as much, white is better."*

Overall, the final product was more visually pleasing to both participants. This increased their likelihood of noticing the product.

Cultural Literacy in Product Content

Participants noticed a difference in the quality and type of content of the product. The woman noticed a difference in behavior change technique between the drafts. She said,

> "*El primero diseño parece que quiere dar el efecto de miedo, pero no da mucha info y las fotos se ven muy simples./The first design appears to want to use a scare tactic, but doesn't give much info and the photos seem very simple."*

They also noticed a difference in how the drafts presented information. The man said the map in the final product helped to clarify population of interest. He said,

> *"El mapa en los dos nos ayuda mucho en decir que es una enfermedad contra los hispanos./ The map in both helps us a lot to say that this is an illness against Hispanics."*

Participants preferred content of the final draft to the initial drafts.

Civic Literacy in Product Comprehensibility

The initial reactions of the man and woman to seeing the products were to talk about ChD. The man said,

> *"¿Que es Chagas?/What is Chagas?"*

In contrast, the woman described various stories she heard about diseases in Latin America that might be ChD or something similar. Yet, they both found the information in the final product helpful. When asked what they would do after seeing the final product, both stated they would look for more information. The man said,

> *"Voy a buscar en la internet que es Chagas/I am going to look on the Internet what is Chagas?"*

These participants clearly understand the importance of the message and noticed a difference in quality between the initial drafts and final product. They claimed the final product motivated them to take action.

Conclusions

This project had multiple rounds of qualitative data collection and analysis. As this project involved an iterative methodology, the results of each focus group discussion guided product development. By performing member-checks at the end of the product development, the primary researcher ensured validity of the results. These results will be further explored in the discussion section.

Chapter 5: Discussion

This project developed a culturally specific health communication product to promote diagnostic testing of ChD. Based on formative research, the population of interest was US Latin American immigrants. US Latin American immigrants participated throughout the health communication product development process to improve cultural specificity.

This development process involved evaluation of external health communication products and the drafted versions of the ChD health communication product. To evaluate these health communication products, this study focused on factors of health literacy and the study's key constructs of data analysis. These key constructs include: visibility, visual appeal, content, comprehensibility, and cultural sensitivity.

In the design process, the primary researcher also considered the Health Belief Model's constructs of perceived susceptibility, perceived severity, and perceived benefit to motivate increased diagnostic testing of ChD (Glanz et al., 2008). Similarly, she considered the Diffusion of Innovations theory's constructs of complexity and observability to guide the style and placement of the health communication product (Glanz et al., 2008). Integration of these health behavior theories occurred throughout the design process to promote message uptake and change behavior.

This chapter interprets the results of the study. The results correspond to health literacy factors and the study's key constructs of data analysis. This chapter interprets how these results fit into a larger perspective of health communication, health literacy, and cultural competency in research and practice. This chapter also appraises strengths and limitations of the study, and implications of the findings.

Civic Literacy in Product Visibility

This study found that participants consume various channels of communication including: television, radio, Internet, posters, magazines and newspapers. However, limited resources constricted the focus of this study to print mediums. Print mediums can be directed at an international, national, or local level. This level influences the audience size and location. It also influences the specificity of information communicated. These assertions will be described below.

This study found that national magazines are important to the US Latin American community. Research also shows that many US Latin American immigrants read national magazines (Doublebase Mediamark Research & Intelligence, 2009). This large readership creates potential to influence many community members. It also promotes trust due to popular opinion of the information source. This level of trust is important to increase message viewing, processing, and uptake.

In contrast, there are limitations to having a large and diverse readership. Recommendations for behavior change must stay general in these communication channels. If recommendations do not stay general, they will likely be irrelevant to much of the audience. For example, information to refer a person to an Atlanta hospital is irrelevant to a person living in Los Angeles. Yet, general information is less actionable. Less actionable content in health communication lowers the likelihood of behavior change. This is recognized throughout principles of health literacy (Office of Disease Prevention and Health Promotion, 2009).

This study also found that US Latin American immigrants consume local, Spanish newspapers. Local channels often have lower readership than national or international

channels because they are restricted to a specific area. Yet, this refined readership can increase capacity of the channel to consider specific preferences and recommendations. These preferences and recommendations can include population-specific styles, topics, and referrals for further information or services. This type of specific communication may be more successful in motivating behavior change. In this study, participants preferred specific community-level information, but spent considerable time reading national-level publications.

For these reasons, the primary investigator designed a product to suit the US population of interest that can be distributed at national and local levels. The message in this project encourages viewers to "ask their doctor" for more information. In this way, the primary researcher sought to outline an action plan that could be executed by a population over a large geographic area. However, participants did request more specific contact information. For this reason, the product content refers to the CDC website.

Unfortunately, referring viewers to "their doctor" or the CDC website may create other barriers. These barriers can include a lack of healthcare access or insufficient health literacy to comprehend the CDC website. It is important to weigh these priorities in the scope of a health communication piece.

Cultural Literacy in Product Visibility

Health communication product design should consider what communication channels a population trusts and uses. Yet, health communicators also need to consider *how* a population uses these communication channels. Not considering how a population uses the channel can be a barrier for effective health communication. For example, a person may use the Internet for social networking, but not for reading news. This person

will not view Internet-based health communication messages if they are posted on news websites, but they may see them if posted on social network websites. In this study, participants cited using magazines and newspapers for a variety of purposes, such as news, entertainment, or seeking health information. This motivated the primary researcher to design a health communication product to be distributed through these channels.

Civic Literacy in Visual Appeal

Visual appeal is very important to successful health communication. Visual appeal increases the likelihood that a person notices a message. It attracts the eye before message content. If a product looks attractive or interesting, the viewer may be more likely to read the message.

To increase visual appeal, the participants in this study emphasized preference for bright colors, high quality designs, and culturally-relevant images. Bright colors immediately attract the attention of the population. For example, red can communicate urgency or danger. Furthermore, if a health communication product is of high quality, participants said they are more likely to notice, read, and trust the information. Participants claimed images attract attention if they are culturally relevant and show interesting content. These factors increase likelihood that a viewer will read a health communication message. Thus, the primary researcher focused on visual appeal in product design.

Fundamental Literacy in Product Comprehensibility

Low literacy rates and education statuses in the Latin American immigrant population create an evident barrier to fundamental literacy. To address this, participants

recommended several methods to improve product comprehensibility. Participants recommended simple, Spanish-language text. They preferred image heavy designs. These images should support the meaning of the text of the communication product. This support reinforces the key messages of the product and keeps reading to a minimum. These methods are recognized by health literacy research (Zarcadoolas et al., 2009).

To increase clarity for this product, participants re-worded several sentences during the design process. By phrasing the message in common language, participants made the product easier to read. This action emphasizes the importance of writing and proofreading across languages. Accuracy in phrasing is imperative for clarity.

Yet, outside of simple accuracy, language morphs over time. Certain phrases are more relevant to populations at different time points or for specific reasons. For example, in this study, one participant claimed that ChD is called “el mal de Chagas” in her home country. Yet, other participants preferred to call ChD “la enfermedad de Chagas” because the word “enfermedad” is more potent than the word “mal.” Phrasing and word usage is dynamic. For health communicators that do not regularly speak Spanish in Latin American immigrant communities, it can be difficult to stay informed on current styles of speech. This example shows that it is important to involve the population of interest in message development to ensure clarity and relevance in phrasing.

Scientific Literacy in Product Content and Comprehensibility

Participants wanted health communication products to explain specific medical information. This information included disease effects. Knowing about disease effects enables a person to evaluate likelihood of having the health issue. It also allows him or her to comprehend the severity of the disease. Participants claimed that severe disease

effects do motivate them to seek health care. This is in agreement with the Health Belief Model (Glanz et al., 2008).

Similarly, participants wanted specific information on the risks and consequences of not following the health communication product's message. Often, changing behavior is inconvenient or difficult. If there is high risk of negative health outcome, a person will be more likely to change behavior. If risks are mild, they may ignore the message.

Balancing length and depth of content can be difficult. Participants cited losing interest in long messages. They referenced not reading to the end of these messages. Thus, it is important to give only purposed, relevant information that will interest the viewer audience. However, viewers need background to fully understand health messages. Necessary background enables a person to fully comprehend these specific areas of information. Participants cited encountering gaps in necessary information when reading health messages. They referenced losing track of the overall message when encountering these gaps. This process was frustrating to participants and lead to incomplete information processing. Supplying complete information to communicate a message allows a person to more fully process the meaning and significance of the health communication message. To be successful, health communication messages should be clear and concise. The messages should give complete, but necessary information. To balance these needs, this study found that referrals to further information compliment simple messages to achieve an optimal level of clarity.

Civic Literacy in Product Content

Civic literacy enables a person to learn about health issues in their community (Lasker & Weiss, 2003). This is important to perceiving risk of an individual for a health

issue. For this reason, participants recommended emphasizing the population of interest in the health communication message. To specify the population visually, participants suggested including a map that showed the US and Latin America. They preferred this map to one of only Latin America. They feared a map of only Latin America might draw less attention from Latin American immigrants who think the message no longer applies to them. This emphasizes the need to reinforce messages through images and text. It also emphasizes the need to pilot test perceptions of images to ensure the message is being sufficiently received.

Participants also desired specific tools from health communication messages. They cited wanting to know the disease name. This simple request enables the population to act on a message. To act, they can look for further information through multiple communication channels. They can discuss the health issue with others in the community or their medical providers, search for the disease on the Internet, or notice further information in newspapers.

The primary researcher asked if expressing the disease name in English would ease communication in an English-language medical setting. Participants said that English names were confusing and there are sufficient translators to deem this wording unnecessary. This presence of translators may show consideration of cultural competency in the participants' local medical environment. Increased research should evaluate this route of communication for health information, as well. Participants often cited wanting to talk to a medical professional about health information. Translators are imperative for this service. They could also be a source of information for the population.

Finally, participants often discussed cost of service. Cost is a common barrier to accessing health care in this population. This barrier often results from lacking health insurance coverage or having a low income. Research shows Latin Americans are more often uninsured and considered low-income than the US population overall (Smith, 2000 & Terrazas, 2010). With these barriers, considering cost of service is an important factor in health decision-making for US Latin American immigrants. It is important to include cost information in health communication, when possible. Furthermore, this barrier of cost can, in part, explain why prevention is important to this population. Restricted access to medical services due to price may influence preventive behaviors and fear of morbidity.

Cultural Literacy in Product Visual Appeal

Participants preferred specific drafts of the initial ChD health communication product due to image clarity and depiction of the family. They preferred images that represented both male and female heads of households. This bi-gender presence is to represent the joint work of males and females in making health decisions in Latin American families (Smith, 2000). This is interesting due to the typical patriarchal societal structure in Latin American immigrant communities. In typical families, females are often credited with making familial medical decisions (Galanti, 2003). However, men are usually the final decision-makers. Acknowledging both males and females in health communication messages increases message relevance for both parties.

Furthermore, one draft image showed a family that was well dressed and appeared wealthy. Participants liked this image less than the other images. They liked it less because they did not associate wealthy characteristics with Chagas disease. The primary

researcher did not discuss socioeconomic risk factors in regards to ChD with the participants. The tendency of participants to associate disease with poverty is very interesting and a potential source for future research.

Civic Literacy in Product Content

Participants suggested and ranked endorsements for the product. There exists little research on ranking of logos. In this study, participants preferred highly visible, colorful endorsements that had significance for their location. They preferred specific hospitals or churches to general health organizations or institutions that are not local. Participants did not have a strong preference for Latin American-focused organization logos. Participants prioritized familiarity of the logo over purpose of the organization. Yet, participants preferred the Univisión logo. This is a national logo. It is very recognizable, reliable, and brightly colored. These factors were most important in preference.

Literature shows that Latin American immigrants usually participate in Spanish organizations and that the collectivist culture is a primary influence (Gudykunst,1998). Similarly, research shows religion and church culture to be a primary influence on Latin American immigrant culture (Kemp & Rasbridge, 2004). This study found neither of these factors to be a strong influence on logo preference. Furthermore, participants acknowledged diversity in religious denomination in the population. This is often not seen in research, which shows most Latin Americans to be Catholic (Kemp & Rasbridge, 2004). This could be a sign of acculturation.

Cultural Literacy in Product Comprehensibility

Finally, select focus groups lead into an exploration of human rights. Topics addressed included racism, fear of both disease and health services, and stigma. One woman discussed public perception of poverty. She said,

> *"Mucha gente piensa que pobreza es sucio, la pobreza no significa que tiene que ser sucio/Many people think that poverty is dirty, poverty doesn't mean that you have to be dirty."*

In this context, the word "dirty" implied "disease-causing." This signifies need for future research in ameliorating the issue of racism and stigma in health communication.

Strengths

There are several strengths to this study. These strengths include theoretical framework, methodology, community need, timing and replicability. For theoretical framework, two health behavior theories guided the study and product design. These theories focus the project on salient aspects of behavior change. This is imperative because the ultimate purpose of health communication is to change behavior. Basing the project on health behavior theories increased the likelihood of behavior change. Similarly, principles of health literacy guided the project. Following these principles increases the likelihood that the population of interest will gain the skills necessary to act on health information. Together, these factors may lead to more successful behavior change.

For methodology, the iterative, qualitative methodology was important to developing successful, culturally specific health communication products. Past research

shows that studies, which involve the population of interest in product design are more successful than those that do not (Kreuter, 2003). This is especially significant in Latin American immigrant populations, which experience slow acculturation and high immigration rates (Brick, Challinor, & Rosenblum, 2011).Health communication that is culturally specific for Latin American immigrant populations is important to improving US health.

In regards to project timing, several components of this study fall into specific aims of national programs. The Centers for Disease Control and Prevention classified Chagas disease as a Neglected Parasitic Infection (CDC, 2012a). This signifies priority for public health action. Similarly, Healthy People 2020 released goals to improve health communications across minority populations by the year 2020 (www.healthypeople.gov/2020).

For replicability, a strength of this project is that the protocol developed as part of this study can be re-used by health communicators in the future. This is attached in *Appendix C.*

Limitations

It is important to interpret these findings within the confines of study limitations. The study recruited participants from one location in Atlanta, GA. Though participants did bring partners or friends to the focus group, this single site and snowball sampling technique may lead to a non-representative sample of the US Latin American immigrant population. In addition, several of the group participants did know each other. This could encourage shyness or similar opinions between friends. These influences may affect the focus group data.

Similarly, the presence of the primary researcher may have affected honesty and communication of the focus group participants. Participants were aware that the focus group moderator created the health communication product. Her presence may have influenced the critiques of the group.

Furthermore, more women participated in the focus group discussions than men. Though women actively participate in health discussions in this community, men also participate in health decisions. Specific health communications with both genders is important. This low participation of men could have been due to work schedules, social norms, or that the recruitment site disproportionately enrolls women in classes. Furthermore, preferences are highly variable in health communication. This study cannot adequately represent all preferences of the Latin American immigrant population.

As always, there is selection bias in this study. The characteristics and preferences of the population may not be representative of the entire population. All the participants could, seemingly, read. They were learning English through the Horizons program and had access to transportation to get them to the Sandy Springs Library. Future research should replicate this process in an effort to increase validity and representation of the population of interest.

Similarly, theories and models focus the attention of research on specific details. This inherently draws attention away from certain areas. This project was based on the Health Belief Model and Diffusion of Innovations theory. It considered many salient aspects of health literacy and health communication in the Latin American population. Yet, there could be many other details that are important to culturally competent health communications that the primary researcher did not address.

Future Research

Little is known regarding the effects of cultural specificity in health communication. More research is needed to determine fuller preferences for the Latin American community. More research is needed to expand knowledge of preferences across multiple communication channels. This research should also be carried out across many cultural backgrounds. Furthermore, research is needed on the extent to which increasing cultural specificity influences behavior change.

Stigma also worried the primary researcher in this project. Participants did not prefer an image of the initial draft due to the wealthy appearance of the family. They did not associate wealth with ChD. These comments concerned the primary researcher that utilizing ChD as a model for health communication skewed the opinions of the participants. It is possible that the participants modified their responses and product preferences to fit their perceptions of those affected by ChD.

Finally, this study needs to be updated regularly. Data should be collected to both update the protocol and to establish a timeline for when updating is necessary.

Conclusions and Implications

Based on Healthy People 2020, improving the delivery of health communication materials in the Latin American population can improve Latin American health overall. Health communication is central to the development and improvement of health services, public health, and public perception of health. Improving communication tools can increase reception of health information, increase health skills and knowledge, and facilitate proper decision-making (www.healthypeople.gov/2020). This study supports the need for culturally specific health communication products with the Latin American

immigrant population. However, basing the development of these products off literature research and successes of products in other populations or contexts may be inadequate. Latin American immigrants suffer from specific barriers to health communication that must be addressed in each product design. Actively engaging community preference is health communication design increases efficacy of health communication. Special attention should focus on maintaining high-quality, culturally specific health communication products. These products should seek to ameliorate barriers to message comprehension due to low health literacy.

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APPENDIX A

IRB Information:

FOCUS GROUP ADVISORY BOARD
ORAL SCRIPT FOR OBTAINING CONSENT - SPANISH

Buenas. Mi nombre es _____. Trabajo con la Universidad de Emory. Estamos realizando un estudio para entender el conocimiento y las actitudes sobre la enfermedad de Chagas sostenidos por latinoamericanos en los Estados Unidos.

Si usted participa, se unirá a un grupo de hispanohablantes para compartir sus opiniones sobre un producto de comunicación de salud sobre la enfermedad de Chagas.

Su participación en el día de hoy es voluntaria. El estudio tomará alrededor de una hora tres veces en tres días distintos. Para poder participar, usted tiene que tener un mínimo de 18 años y de un étnico hispano. Toda la información que usted comparta conmigo permanecerá confidencial, aunque no le podemos garantizar que otros miembros del grupo no compartirán la información. Vamos a grabar la discusión de grupo hoy y borraremos la grabación después de escucharla para proteger su identidad. Les pedimos que respeten a la privacidad y la confidencialidad de sus compañeros, y que no repitan cualquieras cosas dicho en confianza después de que se vayan. Este estudio no le presenta riesgos a su salud. Usted será compensado(a) con una comida y una tarjeta de regalo por un valor de $15 el primer y último grupo focal por su tiempo e inconveniencia.

¿Tiene preguntas antes de comenzar? Si tiene preguntas o preocupaciones sobre el estudio o sobre sus derechos como participante, usted puede contactar al Dr. Juan Leon, el director de este estudio y profesor en la escuela de Salud Pública de Rollins de la Universidad de Emory, o al Emory University Institutional Review Board, la junta que supervisa la protección de participantes en investigaciones humanas. *Aquí tiene una hoja informativa con información sobre el estudio.*

Si usted no tiene (más) preguntas, ¿me podría explicar lo que vamos a hacer hoy, por favor?

Emory Institutional Review Board: 404-712-0720

Línea telefónica en español: 678-653-6605.

Dr. Juan Leon, PhD: 404-727-7443

FOCUS GROUP ADVISORY BOARD
ORAL SCRIPT FOR OBTAINING CONSENT - SPANISH

Hello. My name is _____. I am working with Emory University and we are conducting a study to better understand the knowledge and attitudes regarding Chagas disease held by Latin Americans in the United States.

If you participate, you will join a group of other Spanish speakers to share your opinions about a health communication product on Chagas disease.

Your participation today is voluntary. The study will take approximately one hour three times on three separate days. In order to participate, you must be at least 18 years of age and of Hispanic ethnicity. All the information you give me will be kept confidential, although we cannot guarantee that other group members will not share what was discussed in the group. We will be recording the group discussion today and we will erase the recording after listening to protect your identity. We ask you to be respectful of your fellow participants' privacy and confidentiality, and that you do not repeat anything that is said in confidence after you leave today. This study does not present any risks to your health during this study. You will be compensated with a meal and a $15 gift card after the first and third focus group for your time and inconvenience.

Do you have any questions before we begin? If you have questions or concerns about the study or about your rights as a participant, you may contact Dr. Juan Leon, the director of this study and a professor at Emory University's Rollins School of Public Health, or the Emory University Institutional Review Board, which oversees the protection of human research participants. *Here is the information sheet with information about the study.*
If you don't have any (more) questions, will you please explain to me what we are going to do?

Emory Institutional Review Board: 404-712-0720

Telephone line in Spanish: 678-653-6605.

Dr. Juan Leon, PhD: 404-727-7443

Rollins School of Public Health
Emory University
Information Sheet – Focus Group

TITLE: Attitudes and Knowledge of Chagas Disease among Latin American Immigrants and Medical Care Providers in Georgia

PRINCIPAL INVESTIGATOR: Juan S. Leon, PhD, MPH
Rollins School of Public Health, Emory University

CO-INVESTIGATORS: Monique Hennink, PhD, Carlos Franco-Paredes, MD, Tracy Fossas, Laura Wagner, Amina Khawja, Andrea Nicholls
Rollins School of Public Health, Emory University

PURPOSE:
The purpose of this study is to better understand the knowledge and attitudes regarding Chagas disease held by Latin Americans and medical care providers in the United States. After, this information and an advisory board will be used to create a culturally sensitive health communication product.

METHODS:
If you consent to participate in this study, you will be asked to answer questions about health communication products and answer some demographic information.

DURATION OF PARTICIPATION:
This discussion group will last one hour. There will be three discussion groups in total.

RISKS AND DISCOMFORTS:
There are no risks in this study.

BENEFITS:
You will learn about a disease that affects 8-9 million people in Latin America, but that is not well known in the United States. Your participation in the study will also contribute new information that can benefit other people in the future.

ALTERNATIVES:
You may choose to not participate in this study.

CONFIDENTIALITY:

Any information you give us will be kept confidential. While we will stress the importance of maintaining the information discussed in the group confidential, we cannot guarantee that other group members will not share what was discussed in the group. Voice recordings will be transcribed without your name or any other identifying information, after which the recording will be destroyed to protect your identity.

COSTS:

There is no cost to you for your participation in this study.

APPROXIMATE NUMBER OF PARTICIPANTS IN THIS STUDY: 30

CONTACT INFORMATION:

If you have any questions about the study, you may contact us by e-mail at juan.leon@emory.edu or by calling 404-727-4031.If you have questions about your rights as a participant in this study, you may contact the Emory University Institutional Review Board, which oversees the protection of human research participants, at (404) 712-0720 or toll free at 1-877-503-9797.

VOLUNTARY PARTICIPATION AND WITHDRAWAL:

Participation in this research is voluntary. You may refuse to participate, or refuse to answer any questions that you do not want to answer. If you decide to be in this study and change your mind, you may withdraw at any time. Your decision to participate or not participate will have no negative consequences. Refreshments will be provided to you in gratitude for your time. You will receive a gift card for participation.

Rollins School of Public Health
Emory University
Hoja de Información - Grupo

TÍTULO: Conocimiento y actitudes acerca de la enfermedad de Chagas sostenidos por inmigrantes latinoamericanos y profesionales de salud en Georgia.

INVESTIGADOR PRINCIPAL: Juan S. Leon, PhD, MPH
Rollins School of Public Health, Emory University

CO-INVESTIGADORES: Monique Hennink, PhD, Carlos Franco-Paredes, MD, Tracy Fossas, Laura Wagner, Amina Khawja, Andrea Nicholls Rollins School of Public Health, Emory University

PROPÓSITO:
El propósito de este estudio es entender mejor el conocimiento y las actitudes sobre la enfermedad de Chagas sostenidas por latinoamericanos y proveedores de salud en los Estados Unidos. Después, esta información y un consejo asesor estarán utilizados para crear un producto de comunicación de salud sensible culturalmente.

PROCEDIMIENTOS:
Si usted consiente a participar en este estudio, se le pedirá que participe en una discusión de grupo acerca de productos de comunicación de salud y que nos provea información demográfica básica.

DURACIÓN DE PARTICIPACIÓN:
Esta discusión de grupo tomará una hora. Estará tres discusiones de grupo.

RIESGOS E INCOMODIDADES:
No hay riesgos en este estudio.

BENEFICIOS:
Aprenderá sobre una enfermedad que afecta 8-9 millones de personas en Latinoamérica, la cual no es conocida en los estados unidos. Su participación en este estudio también contribuirá información nueva que podría beneficiar a otras personas en el futuro.

ALTERNATIVAS:
Usted puede elegir no participar en este estudio.

CONFIDENCIALIDAD:
Toda la información que usted nos provea permanecerá confidencial. Mientras que enfatizaremos la importancia de mantener lo discutido en grupo confidencial, no le podemos garantizar que los otros participantes de la discusión de grupo no compartirán lo discutido en el grupo. La grabación de la discusión será transcrita sin su nombre o cualquier otra información que le identifica, luego la grabación será destruida para proteger su identidad.

COSTOS:
No hay costo por participar en este estudio.

NÚMERO APROXIMADO DE PARTICIPANTES EN ESTE ESTUDIO: 30

CÓMO CONTACTARNOS:
Si usted tiene preguntas sobre el estudio, nos puede contactar a la dirección de correo electrónico juan.leon@emory.edu o llamando al 404-727-4031. Si usted tiene preguntas sobre sus derechos como participante en este estudio, puede contactar al Emory University Institutional Review Board, la junta que supervisa la protección de participantes en investigaciones humanas, al (404) 712-0720 o al número telefónico gratuito 1-877-503-9797.

PARTICIPACIÓN VOLUNTARIA Y RETIRO:
Participación en esta investigación es voluntaria. Usted puede decidir no participar, o no contestar cualquier pregunta que no desee contestar. Si usted decide participar y luego cambia de opinión, se puede retirar en cualquier momento. Su decisión de participar o no participar no tendrá consecuencias negativas. En agradecimiento por su tiempo, le daremos un refrigerio. Usted recibirá una tarjeta regalo por su participación.

APPENDIX B

Data Collection Tools:

Demographic Survey:

ESTUDIO DE CHAGAS –LEON RESEARCH GROUP, EMORY UNIVERSITY

Por favor díganos un poquito de su persona. Recuerde que este cuestionario es anónimo y confidencial.

Numero	Pregunta	Respuesta
1.	*¿Cuál es su sexo?*	01. Masculino __ 02. Femenino __
2.	*¿Cuántos años tiene?*	__ __ años
3.	*¿Cuál es su estado civil?*	01. Casado/a __ 02. Divorciado/a__ 03. Soltero/a __ 04.Viudo/a __ 05. Juntado/a __
4.	*¿Cuál es su lenguaje principal?*	01. Español__ 02. Inglés __ 03. Lenguaje indígena __ 04. Otro _____
5.	*¿En qué país nació?*	01. _____
6.	*¿En qué países de Latino América ha vivido?*	01. _____ 02. _____ 03. _____ 04. _____
7.	*¿Cuántos años vivió en esos países?*	01.__ __ __ años 02.__ __ __años 03.__ __ __años 04.__ __ __años
8.	*¿En qué tipo de región vivió en Latino América?*	01. Rural (en el campo) __ 02. Semirural (vecindario/suburbio/ pueblo)__ 03. Urbano (en la ciudad)__
9.	*¿Cuál es el nivel de educación más alto que usted ha completado?*	01. Escuela primaria o menos __ 02. Octavo grado o menos__ 03. Escuela secundaria__ 04. Algo de universidad __ 05. Universidad __ 06. Estudios de post-grado__

10. ¿Cuál es el ingreso de su hogar? Por favor elija SOLO uno (semanal, mensual o anual)

Semanal:

Menos de $200	$200-$500	$501-$1000	más de $1000

Mensual:

Menos de $1000	$1000-$2,000	$2,000-$4,000	más de $4000

Anual:

Menos de $12,000	$12,000-$24,000	$24,001-$48,000	más de $48,000

Focus Group Discussion Guides:
Focus Group Discussion Guide: Focus Group 1

Buenas! Me gustaría agradecerles hoy por tenernos aquí. Mi nombre es _____ y trabajo con la Universidad de Emory. Estamos realizando un estudio de la comunicación de salud sobre la enfermedad de Chagas con los inmigrantes de Latinoamérica. Esta discusión tomará alrededor de una hora. Después de terminar la discusión, ustedes tendrán la oportunidad de hacernos preguntarme sobre cualquiera cosa. Durante las siguientes semanas, voy a hacer dos más grupos focales para desarrollar un producto sobre la enfermedad de Chagas. Si es posible, preferimos que regresen a cada uno de los tres grupos focales.

Su participación hoy en día es voluntaria y si no quieren participar se pueden ir. Toda la información que usted comparta conmigo permanecerá confidencial, aunque no le podemos garantizar que otros miembros del grupo no compartirán la información. Vamos a grabar la discusión de grupo hoy y borraremos la grabación después de evaluarla anónimamente para proteger su identidad. La información que colectamos hoy será utilizada solo para la investigación. Será guardado en una manera segura para que solo el equipo de la investigación la pueda utilizar. Les pedimos que respeten a la privacidad y la confidencialidad de sus compañeros, y que no repitan cualquieras cosas dicho en confianza después de que se vayan.

No queremos perder las opiniones de nadie, por tanto es importante que sólo una persona hable a la vez. Recuerden que no todos van a estar de acuerdo, y estamos interesados en escuchar a todos entonces por favor se sienten libres de compartir sus opiniones.

Nos gustaría pasar 60 minutos con Uds. hoy. Por favor sírvanse refrescos antes de comenzar. ¿Tiene preguntas antes de comenzar? ¿Todos quieren participar? ¿Están de acuerdo que grabamos la discusión?

Bueno, gracias por su participación. Por favor, para empezar comparten su nombre y su comida favorita.

INTRODUCTION TO COMMUNICATION CHANNELS

1. ¿Cuáles tipos de medios de comunicación miran ustedes en la vida diaria?
   Probes: revistas, periódicos, radio, televisión, folletos

2. ¿Cuáles tipos de medios de comunicación *consideran* ustedes en la vida diaria?
   Probes: revistas, periódicos, radio, televisión, folletos

3. ¿Dónde buscan ustedes información sobre la salud?
   Probes: revistas, periódicos, radio, televisión, folletos

INDIVIDUAL EXAMPLES

Show participants the example products to pass around and keep in the middle of the table.

1. ¿Cuáles de estos ejemplos, si hay alguno, atraen su atención? ¿Por qué?
2. ¿Cuáles de estos ejemplos, si hay alguno, leerían ustedes si lo vieron? ¿Por qué?
3. ¿En cuáles de estos ejemplos, si hay alguno, entienden ustedes el mensaje y el propósito del producto?

Select the favorites and remove other examples from the table.

4. ¿Qué dice este ejemplo?
5. ¿Qué sugiere el mensaje a hacer?
    a. ¿Lo harían?
    b. ¿Por qué?
6. ¿Qué se puede cambiar en este mensaje para motivarse a actuar? ¿Y para motivar a otra gente?
7. ¿Qué piensan es la próxima etapa de este mensaje?
    a. ¿Qué más información necesitan para actuar?
    b. ¿Qué información es importante para facilitar una acción?

STYLE

1. ¿A ustedes qué les gusta sobre la apariencia de cada ejemplo?
   Go through each example
   Probes: color, size, images, font, layout, etc.
2. ¿A ustedes qué no les gusta sobre la apariencia de cada ejemplo?
   Go through each example
   Probes: color, size, images, font, layout, etc.
3. ¿A ustedes qué les gustan sobre el contenido y la fraseología de estos ejemplos?
4. ¿Hay algo más que se puede cambiar para mejorar el ejemplo de alguna manera?
5. ¿Cuáles de estos ejemplos van a recordar? ¿Qué es diferente sobre este ejemplo que ayuda a recordarlo?

CLOSING

La discusión casi se terminó pero hay unas preguntas más que quiero hacer:

1. ¿Cuáles son sus recomendaciones para crear un producto de comunicación sobre la enfermedad de Chagas?
2. ¿Hay algo más que les gustaría compartir sobre lo que hemos hablado hoy?

Gracias por venir hoy. La conversación que hemos tenido aquí es muy importante y ustedes nos han ayudado a explorar las mejores formas de llegar a personas como ustedes con información sobre salud. Esta información podrá mejorar la salud de inmigrantes de Latinoamérica en el futuro.

Focus Group Discussion Guide: Focus Group 2

Buenas! Me gustaría agradecerles hoy por tenernos aquí. Mi nombre es _____ y trabajo con la Universidad de Emory. Estamos realizando un estudio de la comunicación de salud sobre la enfermedad de Chagas con los inmigrantes de Latinoamérica. Esta discusión tomará alrededor de una hora. Después de terminar la discusión, ustedes tendrán la oportunidad de hacernos preguntarme sobre cualquiera cosa. Durante las siguientes semanas, voy a hacer dos más grupos focales para desarrollar un producto sobre la enfermedad de Chagas. Si es posible, preferimos que regresen a cada uno de los tres grupos focales.

Su participación hoy en día es voluntaria y si no quieren participar se pueden ir. Toda la información que usted comparta conmigo permanecerá confidencial, aunque no le podemos garantizar que otros miembros del grupo no compartirán la información. Vamos a grabar la discusión de grupo hoy y borraremos la grabación después de evaluarla anónimamente para proteger su identidad. La información que colectamos hoy será utilizada solo para la investigación. Será guardado en una manera segura para que solo el equipo de la investigación la pueda utilizar. Les pedimos que respeten a la privacidad y la confidencialidad de sus compañeros, y que no repitan cualquieras cosas dicho en confianza después de que se vayan.

No queremos perder las opiniones de nadie, por tanto es importante que sólo una persona hable a la vez. Recuerden que no todos van a estar de acuerdo, y estamos interesados en escuchar a todos entonces por favor se sienten libres de compartir sus opiniones.

Nos gustaría pasar 60 minutos con Uds. hoy. Por favor sírvanse refrescos antes de comenzar. ¿Tiene preguntas antes de comenzar? ¿Todos quieren participar? ¿Están de acuerdo que grabamos la discusión?

Bueno, gracias por su participación. Por favor, para empezar comparten su nombre y su tipo favorito de música.

CONTENT EVALUATION

Show participants the drafts to pass around and keep in the middle of the table.

1. ¿Cuáles de estos ejemplos, si hay alguno, atraen su atención? ¿Por qué?
2. ¿Cuáles de estos ejemplos, si hay alguno, leerían ustedes si lo vieron? ¿Por qué?
3. ¿Cuáles de estos ejemplos, si hay alguno, les entienden más el mensaje y el propósito del producto?
4. ¿Que sugiere el mensaje a hacer?
    a. ¿Lo harían?
    b. ¿Por qué?
5. ¿Qué se puede cambiar en este mensaje para motivarse a actuar? ¿Y para motivar a otra gente?

6. ¿Qué piensan es la próxima etapa?
    a. ¿Qué más información necesitan para actuar?
    b. ¿Qué información es importante para facilitar una acción?

STYLE EVALUATION

1. ¿A ustedes que les gusta sobre la apariencia de cada ejemplo?
   Go through each example
   Probes: color, size, images, font, layout, etc.
2. ¿A ustedes que no les gusta sobre la apariencia de cada ejemplo?
   Go through each example
   Probes: color, size, images, font, layout, etc.
3. ¿A ustedes que les gustan sobre el contenido y la fraseología?
4. ¿Hay algo más que se puede cambiar para mejorar el ejemplo de alguna manera?

CLOSING

La discusión casi se terminó pero hay unas preguntas más que quiero hacer:

1. ¿Cuáles son sus recomendaciones para mejorar el próximo borrador de este producto de comunicación sobre la enfermedad de Chagas?
2. ¿Hay algo más que les gustaría compartir sobre lo que hemos hablado hoy?

Gracias por venir hoy. La conversación que hemos tenido aquí es muy importante y ustedes nos han ayudado a explorar las mejores formas de llegar a personas como ustedes con información sobre salud. Esta información podrá mejorar la salud de inmigrantes de Latinoamérica en el futuro.

Focus Group Discussion Guide: Focus Group 3

Buenas! Me gustaría agradecerles hoy por tenernos aquí. Mi nombre es _____ y trabajo con la Universidad de Emory. Estamos realizando un estudio de la comunicación de salud sobre la enfermedad de Chagas con los inmigrantes de Latinoamérica. Esta discusión tomará alrededor de una hora. Después de terminar la discusión, ustedes tendrán la oportunidad de hacernos preguntarme sobre cualquiera cosa. Durante las siguientes semanas, voy a hacer dos más grupos focales para desarrollar un producto sobre la enfermedad de Chagas. Si es posible, preferimos que regresen a cada uno de los tres grupos focales.

Su participación hoy en día es voluntaria y si no quieren participar se pueden ir. Toda la información que usted comparta conmigo permanecerá confidencial, aunque no le podemos garantizar que otros miembros del grupo no compartirán la información. Vamos a grabar la discusión de grupo hoy y borraremos la grabación después de evaluarla anónimamente para proteger su identidad. La información que colectamos hoy será utilizada solo para la investigación. Será guardado en una manera segura para que solo el equipo de la investigación la pueda utilizar. Les pedimos que respeten a la privacidad y la confidencialidad de sus compañeros, y que no repitan cualquieras cosas dicho en confianza después de que se vayan.

No queremos perder las opiniones de nadie, por tanto es importante que sólo una persona hable a la vez. Recuerden que no todos van a estar de acuerdo, y estamos interesados en escuchar a todos entonces por favor se sienten libres de compartir sus opiniones.

Nos gustaría pasar 60 minutos con Uds. hoy. Por favor sírvanse refrescos antes de comenzar. ¿Tiene preguntas antes de comenzar? ¿Todos quieren participar? ¿Están de acuerdo que grabamos la discusión?

Bueno, gracias por su participación. Por favor, para empezar comparten su nombre y sus planes para el fin de semana.

CONTENT EVALUATION

Show participants the semi-final draft to pass around and keep in the middle of the table.

1. ¿Qué piensan ustedes de los cambios a este borrador?
   Probes: point out changes made
2. ¿Qué más debemos añadir o cambiar para mejorar el producto?

ENDORSEMENTS

1. Ustedes me mencionaron que los logotipos son importantes. ¿Cuáles son los mejores ejemplos de logotipos?

   Write the list and show everyone

2. Bueno, juntos vamos a clasificar los favoritos de esta lista de logotipos. Durante esta clasificación, por favor, explícame por qué clasificaron los logotipos de esta manera.

DISTRIBUTION

1. Muchas gracias para estos consejos. ¿Ahorita, donde piensan ustedes son los mejores métodos y ubicaciones para distribuir este producto? Por ejemplo, periódicos o revistas específicos.

CLOSING

La discusión casi se terminó pero hay unas preguntas más que quiero hacer:

1. ¿Hay algo más que les gustaría compartir sobre lo que hemos hablado hoy?

Gracias por venir hoy. La conversación que hemos tenido aquí es muy importante y ustedes nos han ayudado a explorar las mejores formas de llegar a personas como ustedes con información sobre salud. Esta información podrá mejorar la salud de inmigrantes de Latinoamérica en el futuro.

APPENDIX C

Health Communication Product Protocol:

Health communicators can use this protocol to guide the development of culturally specific, print-medium health communication products for the Latin American immigrant population in the United States. This type of guide is important to ameliorate common barriers to viewing and processing health information for the Latin American immigrant population. Example barriers include health literacy and cultural competence. Improving cultural specificity can improve message processing for the population of interest. This guide can ease the process of improving cultural specificity by highlighting key points to consider throughout the product planning, development, and distribution process.

Culturally Specific Health Communication in the United States:

Communicating with Latin American Immigrants through Print Mediums

Photo credit: iStock.com

Latin American immigrants have specific needs and preferences in health messaging. To best communicate with this population, health communicators should consider these needs and preferences. This protocol will guide health communicators through the process of developing print-medium health communication products for the Latin American immigrant population in the United States.

This protocol is divided into 5 phases. These phases include:

- Phase 1: Backwards planning: starting off with your goals in mind
- Phase 2: Taking inventory: utilizing available resources and acknowledging your limitations
- Phase 3: Data and Imagination: designing the health communication product
- Phase 4: Checking in: pilot testing your health communication product
- Phase 5: This is not goodbye: disseminating the health communication message

Phase 1: Backwards planning: starting off with your goals in mind

1. Describe the program by delineating goals and specific objectives.

Photo credit: iStock.com

A health communication program may have goals and objectives for itself. Or, health communication projects can support larger goals and initiatives in health promotion programs. It is important to isolate which goals in these health promotion programs can be augmented through health communication products.

Among other things, health communication can:

- Increase knowledge and awareness of a health topic
- Influence perception of risks and benefits of a health behavior
- Inform viewers of opportunities to access to care or information
- Influence normative beliefs on health behavior or status
- Increase personalization of health information or medical recommendations

Isolating goals and objectives of a health communication project focuses the purpose of the health communication product.

2. Identify your specific audience for each health communication product.

It can be important to segment your population of interest to a subgroup within the Latin American immigrant population. The more specific your audience, the more relevant the health message can be tailored to the audience.

Specific audiences within the Latin American immigrant population can be refined through characteristics such as:

- The population most affected by the specific health issue. For example, focusing on immigrants from malaria endemic regions for malaria treatment programs.
- Physical location of the community (i.e. Atlanta-metro area)

- Demographic information (i.e. education level or income)
- Country of origin

Isolating a specific population allows a health communication product to be better tailored to the audience. For some projects, it may be beneficial to define multiple subgroups.

3. Investigate communication channels that are used and trusted by your population of interest when seeking health information.

It is important to understand where your population of interest looks for health information. You should place your health communication products where your population of interest looks for health information.

The table below describes communication channels used by the Latin American immigrant population in the United States.[1]

Communication channels used by the Latin American Immigrant population	
Communication Channel	**Specific examples used of the communication channel**
Magazines	• Entertainment magazines • National magazines like Parents Magazine • Local magazines like Padres e Hijos magazine in Atlanta
Newspapers	• Local, Spanish-language newspapers like El Mundo Hispánico in Atlanta • More widely circulated Spanish-language newspapers like La Raza from Chicago
Internet	• Facebook • News sites • Search engines
Posters	• Doctor's offices • Church • In public

Overall, Latin American immigrants prefer Spanish-language magazines and newspapers as sources for print health information. These can be international, national or local publications.

There are pros and cons to these types of publications:

- Publications with a wider viewership reach a larger audience, but offer less specific information to the population.
- Publications with specific viewership can offer more actionable health information to engage community resources.

Prioritization of viewers reached versus specificity of information communicated is health communication program specific. It is important to comprehend your specific audience and available resources when selecting your communication channel.

Photo credit: Microsoft Office

4. Select a driving health behavior change theory.

To increase program success, it is important to choose a behavior change theory. This theory should be specific to your population of interest and your desired behavior change. Health Behavior and Health Education: Theory, Research and Practice by Karen Glanz et al. is a great resource to determine which theory best applies to your project.

Phase 2: Taking inventory: utilizing available resources and acknowledging your limitations

Photo credit: iStock.com

1. Reach out to community partners.

Community partners can be very helpful throughout the design and dissemination process.

Community partners can help to:

- Give further information about the population of interest or health issue
- Select communication channels to fit the population of interest
- Access the population of interest for piloting and dissemination purposes
- Share costs of the health communication program, in some cases
- Generate trust of message, if they are trusted in the community

Establishing community partners early in the project can help to synthesize community specific goals, focus your project methods, and define project limitations.

2. Be aware of your budget.

Photo credit: Cade Martin at the Centers for Disease Control and Prevention

Budget largely determines what channels are accessible for a health communication project. It is important to acknowledge your budget when considering the process costs of development, piloting, verification, product dissemination, and evaluation. There may be further logistical costs, as well.

3. Clarify a project timeline and assign project roles.

When working directly with a community, it is necessary to clarify a timeline of project tasks. Planning ahead allows the project to run more smoothly. In developing a timeline, allow sufficient time for basic design, review, revisions, and modifications of the health communication products. Review data is often collected through a series of qualitative data collection procedures. These can be time consuming and dependent on participation of the population of interest. Prepare participants by charting a timeline of their participation. Similarly, be aware of available submission dates for publications you will submit to. Missing these deadlines can delay the distribution your health communication product.

Similarly, when developing a health communication project with multiple stakeholders, designers, and reviewers, it is important to clarify project roles. Miscommunication can lead to costly mistakes or delays. Following timelines and clarifying expectations can ease tension between collaborators and maintain productive relationships.

4. **Select specific endorsements for your project.**

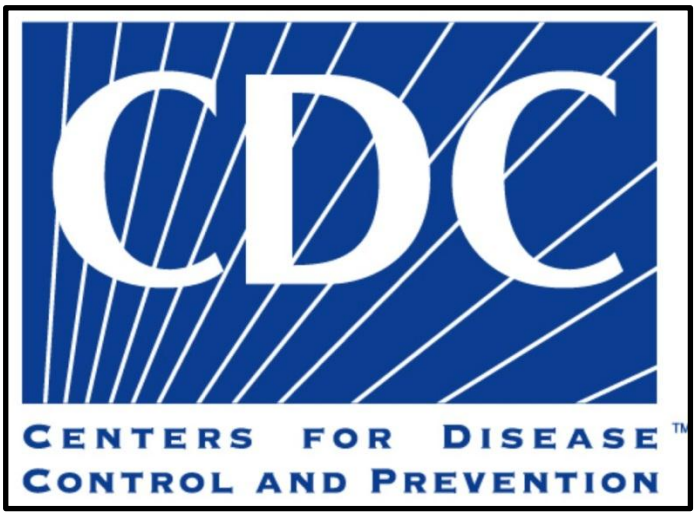

Photo credit: www.cdc.gov

Endorsements can increase recognition and trust of a health communication product. This is important in the Latin American immigrant population.

Latin American immigrants prefer the following endorsement sources:

6. Popular, national Spanish-language television stations (i.e. Univisión)
7. Local hospitals that serve Latin American immigrant populations
8. National, family-focused magazines (i.e. Parent Magazine)
9. Centers for Disease Control and Prevention
10. Churches overall (of various denominations)

Endorsements increase trust and recognition of a health communication message's source. This increases the likelihood that the viewer audience will notice and process the health communication product.

Phase 3: Data and Imagination: designing the health communication product

There are many factors to consider in designing a health communication product for Latin America immigrants. These factors include: health literacy factors, cultural factors, current actions, social and physical environment, and demographic factors.

Photo credit: Cade Martin at the Centers for Disease Control and Prevention

1. **Health Literacy factors affect health communication with Latin American immigrants.**

Low health literacy is often a barrier to health-seeking behavior. You need to consider health literacy in health communication programs to improve health-seeking behavior. Health literacy can be divided into 4 factions: fundamental literacy, scientific literacy, civic literacy, and cultural literacy.

- Fundamental literacy enables a person to read, write, speak, and understand the meaning of words and numbers in health communication messages.

  Best practices to overcome barriers to fundamental literacy include:

  - Offering a Spanish-language product
  - Using images to communicate a message, when possible
  - Writing words clearly and simply, avoiding technical terms and jargon
  - Writing in active voice
  - Making sentences short or using simple conjunctions like “and” or “but”
  - Re-iterating important topics
  - Limiting the number of key points so that the message is not overwhelming
  - Ensuring images and text messages agree and support the overall message
  - Supplying only essential information to avoid confusion
    - Keeping the message interesting to hold viewer attention

- Scientific literacy allows a person to comprehend and use science information in health communication messages. This includes the ability to analyze the reliability of information.

  Methods to overcome barriers to scientific literacy include:

  - Limiting messages to the most basic, simple information possible
  - Supplying enough information to link the behavior change to the health outcome
  - Referring to outside information sources to preserve message simplicity
  - Focusing on the action, not background information and statistics
  - Making message items specific and actionable by breaking large behaviors into smaller steps
  - Ensuring content is accurate

- Civic literacy enables an individual to learn about health issues through community and social mediums. It also enables an individual to participate in decision-making processes for health issues in their community.

  

  Photo credit: Microsoft Office

  Methods to increase civic literacy in health communication messages include:

  - Communicating population-specific health information such as who is affected
  - Communicating disease-specific information such as name, prevention methods, risks and effects, and timeline of required medical action.
  - Supplying resources and information to promote civic engagement, such as where one can go for treatment or information, and price of service
  - Encouraging collective action and support

- Cultural literacy acknowledges the role of culture in comprehending messages. Culture is defined as a group's shared characteristics and customs. It influences how a person interprets a message within the context of his or her beliefs and experiences.

  Techniques for improving barriers to cultural literacy include:

  - Using words like "you" or "we" to increase personalization and identification with the story line

- Creating audience-specific metaphors or analogies to connect the message to a person's life
- Addressing cultural preferences in design through bright color choices, Latin American themed images, etc.
- Creating clear, simple, and high quality designs with a focus on visual appeal
- Addressing cultural preferences in dissemination via medium of communication

2. Larger cultural factors affect health communication with Latin American immigrants.

Studies show that a viewer receives a health communication message better when the source of the information is similar to the viewer. This similarity can be through a variety of characteristics, including cultural similarity. This is especially true for populations, like Latin American immigrants, who identify strongly with certain aspects of their identity.

Photo credit: Cade Martin at the Centers for Disease Control and Prevention

Specific domains which strongly influence Latin American immigrant perception of health information include:

- Familismo and collectivism are important societal influences in the Latin American immigrant community.
  - Familismo denotes the value of family over individual needs. Latin American culture prioritizes messages to protect the family.
  - Collectivism promotes community participation. Latin American ethnicity *and* American residence are important factors to acknowledge in health communication products.

- Religion is central to the Latin American community. More than two thirds of the population is Catholic, with Protestant being the next largest religious group. Church communities influence self-identity, group membership, individual practices, social structure, and health behavior in the Latin American immigrant population. Considering religious influence is important for communicating effectively with this population.

- Patriarchal societal structure is common in the Latin American immigrant community. Men and women have distinct roles in the community and the household based on their gender.
  - Marianismo philosophies motivate Latina women to be self-sacrificing, loyal, and dedicated mothers and wives. They often make familial medical decisions.
  - Machismo philosophies influence men to be dominant to women and to represent, protect, and provide for the family. They often make the final decision on family healthcare choices.
  - Thus, it is important to target health messages at both men and women.

- Health perceptions influence how Latin American immigrants interact with health information. They often fear disease more than dying. This affects lifestyle habits and creates delayed usage of health services. Framing messages to promote prevention and treatment opportunities can help a person avoid their fear of fatal disease diagnosis.

Photo credit: Microsoft Office

3. Current actions of the Latin American immigrant population affect health communication with this population.

When seeking to promote a health-seeking behavior, it is important to examine the current practices of your audience. It is then important to examine possible barriers to changing the behavior of interest. There are many barriers that affect health-seeking behavior in the Latin American immigrant community. Addressing these barriers directly by referring the population to further information or services may augment your health communication project goals. Example barriers for this population include:

- Low awareness of health issues
- Low awareness of medical services available
- Low health insurance coverage
- Fear or dislike of the medical system
- Low availability of Spanish-language services

Ameliorating current barriers to health-seeking behavior increases the likelihood that the behavior change is accomplished.

Phase 4: Checking in: pilot testing your health communication product

To reach project goals and objectives, it is important to maximize the relevance of the health information message to the population of interest. To ensure relevance of the health communication project, it is important to pilot test the developed products. Pilot testing may lead to critiques and revisions of these products. This may occur in several rounds and is usually done through qualitative methods.

Photo credit: Microsoft Office

There are several facets of pilot testing:

1. **Pretest the health communication product with the audience of interest.**

Increasing the similarity of the pilot-testing group to the audience of interest will give you the most accurate results for tailoring your product to your population of interest. Involving the population of interest in product design can lead to more successful health communication projects.

2. **Validate your product with the audience of interest.**

It can be important to ensure that product preferences and modifications from piloting are generalizable to a larger population. Checking in with your population of interest and evaluating your products through in-depth interviews or focus group discussions allows you to validate your conclusions. You should validate with audience members who did not help develop the product to get a fresh perspective.

3. **Revise the product as necessary to achieve the most relevant, audience specific messages possible.**

You should revise the health communication product based on the results of your piloting data. This piloting and analysis may occur in several rounds. Multiple rounds of piloting and revision allow developers to check modifications with the population and resolve further issues. You should revise your product between each round of piloting. Furthermore, analysis of data from piloting groups should occur within several days of data collection to preserve validity of the analysis.

Phase 5: This is not goodbye: disseminating the health communication message

Photo credit: Microsoft Office

After sufficient revision, you should disseminate your health communication products. Yet, disseminating a health communication product does not mean the development process is over. It is important to consider several methods to increase success in message distribution.

When disseminating your health communication product, be sure to:

1. Distribute the health communication product in channels that the specific audience uses for health information. These channels should be selected in the planning process.
2. Check how viewers receive the product immediately after the initial distribution. If possible, make modifications and re-distribute as available.
3. Continue this review process periodically throughout the campaign and make modifications as necessary.
4. Utilize these reviews to inform your NEXT health communication campaign!

Additional Resources:

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This protocol was developed from the conclusions of a community-based, qualitative study of Atlanta-area Latin American immigrants. This study was conducted in 2012-2013 and utilized Chagas disease as a model to develop a health communication product. For more information, this study entitled “Se habla español: Using Chagas disease as a model for developing health communication products with the US Latin American immigrant population” by Erin McGrath Keyes can be found here:

https://etd.library.emory.edu/

APPENDIX D

Final Chagas disease health communication product: