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# Health Literacy Proficiency, Sources of Health Information, and Perceived Barriers to Health Literacy Among Selected Members of the Hmong Community in Minnesota

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# Health Literacy Proficiency, Sources of Health Information, and Perceived Barriers to Health Literacy among Selected Members of the Hmong Community in Minnesota

By

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## Abstract

Health Literacy Proficiency, Sources of Health Information, and Perceived Barriers to Health Literacy among Selected Members of the Hmong Community in Minnesota

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The purpose of this study was to determine health literacy proficiency, sources of health information, and perceived barriers to health literacy among selected members of the Hmong community in Minnesota. Data for this cross-sectional study were collected using the Short Assessment on Health Literacy-English (SAHL-E) screening tool and a questionnaire. The SAHL-E screening tool and a questionnaire were distributed to 40 Hmong residents in the St. Paul/Minneapolis in Minnesota. When combining the numbers of health literacy scores, a mean of 15.5 was reported. The overall findings of this research assessed that the Hmong community in Minnesota has adequate health literacy level. Overall, the major source of health information is media technology (which included the Internet), follow by a medical setting. However, when it comes to being healthy or ill in the past, the primary source of health information was a family member, then media and medical. The barriers to achieving health literacy included understanding medial terms and lack of health knowledge.

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# TABLE OF CONTENTS

# LIST OF TABLES

# CHAPTER I

# INTRODUCTION

Health literacy, as defined in the Affordable Care Act (ACA), is "the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services in order to make appropriate health decisions" (Broderick, 2014, p. 2). Only twelve percent of U.S. adults are proficient in health literacy and over a third (77 million) of U.S. adults have difficulty with common health decisions (U.S. Department of Health and Services, 2010). Approximately 40-80% of the medical information that patients receive is forgotten and about half of the information retained is incorrect because patients remembered it wrong (Schnitzer, Rosenzweig, & Harris, 2011). Having low health literacy can affect an individual's ability to take care of one's health, manage chronic disease, practice preventive health, locate health services, and fill out complex medical forms (Schnitzer et al., 2011).

Low health literacy can lead to poor health knowledge and health status, thereby leading to higher health care costs. The cost of low health literacy to the U.S. economy is approximately $106-236 billion annually or 7 to17 percent of all personal health care expenditures (Schnitzer et al., 2011). Some of the problems may stem from health care providers failing to communicate health information that is clear, personable, and delivered in a way that "speaks" to the patient. If people do not have the skills, knowledge, and motivation to understand health information, they will not be able to seek the help they need to reach optimum health. The current complex health system demands

proficient health literacy; however, in comparison, the majority of our population is lacking this proficiency.

One population group lacking health literacy proficiency is the Hmong. Upon their first arrival to the United States over 30 years ago, the Hmong population has grown substantially from only a few thousand in the 1970's to about 260,000 in 2010 (Pfeifer & Thao, 2013). Despite living in the United States for decades, the Hmong are less likely to get screening for certain diseases such as diabetes, heart disease, and high blood pressure (Smalkoski et al., 2012). In fact, the Hmong tend to be perceived by health providers as reactive to personal health after the health problem has occurred rather than proactive in seeking preventative care (Smalkoski et al., 2012).

Adverse health consequences as a result of low health literacy include less knowledge of disease management and health promoting behaviors, poorer health status, and most importantly, less likely of use preventative health services (Prins & Mooney, 2014). Failure to use preventative services has a negative impact on an individual's health because, when compared to individuals with adequate health skills, individuals with poor health literacy skills enter the healthcare system when they are sicker (U.S. Department of Health and Human Services, n.d.).

**Statement of Problem**

Health literacy plays a significant role in the effective self-management of one's health. The Hmong community is a growing population with minimal understanding about the importance of preventative care due to the challenge of low health literacy proficiency (Pinzon-Perez, 2006). Research has shown that communicating through

brochures with Hmong who have low reading skills is not the best way to communicate health information with this community (Viste, 2007). A review of literature illustrates that translating word for word into Hmong does not make health information culturally appropriate (Thorburn, Keon, & Kue, 2013). In addition, there is little information about Hmong health literacy proficiency and sources of health information utilized to make up for low health literacy.

**Purpose Statement**

The purpose of this study was to determine health literacy proficiency, assess sources of health information used by the Hmong population, and identify perceived barriers to health literacy proficiency among selected members of the Hmong community in Minnesota.

**Background of Hmong History**

With limited English proficiency, ethnic minorities in the US are already at a disadvantage when it comes to health literacy. In a study by Braun & Sentell (2012), 44.9% of those with limited English proficiency reported low health literacy versus 13.8% of English proficient speakers. Low health literacy affects 36% of adults and has been associated with poor health outcomes (Sheridan, Halpern, Viera, Berkman, Donahue, & Crotty, 2011). Vulnerable populations, such as ethnic minorities, are susceptible to poorer health because of their unique perception of disease and treatment combined with limited English proficiency (LEP) and low health literacy (Thalacker, 2011).

Limited English proficiency is a barrier to health care and is associated with poor health status in racial ethnic groups such as African-Americans, Hispanic, and Asian-Americans (Sheridan et al, 2011). Though there is a high prevalence of low health literacy, a major proportion of some racial/ethnic groups do not report having trouble with health information (Sheridan et al, 2011). This represents a problem because many individuals in those racial/ethnic groups who have trouble with health information do not recognize or are not willing to admit their limitations in understanding health information (Sheridan et al, 2011).

Most importantly, individuals with both LEP and low health literacy have an increased risk and a higher prevalence of poor health status (Sheridan et al, 2011). Furthermore, the relationship between those with low health literacy and LEP to health status varied when different racial/ethnic groups were studied (Sheridan et al, 2011).

**Significance of Problem**

According to the 2010 Census Bureau, the Hmong population in Minnesota continues to be the most concentrated in the metropolitan area with 64,422 residents living in Minneapolis, St. Paul, and Bloomington (Pfeifer, Sullivan, Yang, &Yang, 2012). With such a concentrated Hmong population within the metropolitan area it is important for health care providers and community-based organizations to work together in developing health materials that the Hmong community can easily access and understand. A study by Tanjasiri (as cited in Lee & Vang, 2010) revealed that a majority of Hmong are illiterate in their own language and about 50% of participants reported that they cannot read Hmong.

Hmong Americans view health care utilization as unnecessary in the absence of symptoms and do not consult with a physician until symptoms are severe (Lee & Vang, 2010). Mistrust of western medicine can contribute to a delay in seeking care and often leads to poor health outcomes (Lee & Vang, 2010). Often, due to communication barriers, trusting health care providers was the only option for Hmong patients to understand health information (Thorburn et al., 2013). However, there is a common inability within the Hmong population to understand or question the provider's judgments or diagnosis (Thorburn et al, 2012).

**Theoretical Framework**

The Health Belief Model (HBM), originally conceptualized by Rosenstock (1974), recognizes an individual's perceived susceptibility to disease, perceived severity of diseases, and perceived barriers to preventive actions (Thalacker, 2011). The HBM consists of five constructs (Thalacker, 2011). Perceived susceptibility, the first construct describes a person's risk of contracting an illness (Thalacker, 2011). The second construct, perceived severity, describes a person's perception of the impacts of contracting an illness (Thalacker, 2011). The next construct, perceived benefits, helps explain a person's perception of the positive impacts that could happen from a behavior change (Thalacker, 2011). The fourth construct, perceived barriers describe perceptions of the difficulties in performing a specific behavior while the fifth construct, self-efficacy, is a person's belief and confidence that he/she can perform a specific behavior (Thalacker, 2011).

This study used the perceived barriers construct of the HBM as a theoretical framework. The perceived barriers construct within the Health Belief Model (HBM) can be used to identify an individual's perceived barriers, such as cost of health care, individual capacities to understand health-related print and oral literacy, and preventive action. To prevent disease and promote health among the Hmong community, the HBM could be applied by health professionals to guide program planning concerning health literacy proficiency. This study sought to identify perceived barriers to increasing health literacy proficiency levels within the Hmong population in the Minnesota.

**Research Questions**

Based upon the selected sample of adult Hmong in Minneapolis/ St. Paul the following research questions were investigated:

1. What are levels of health literacy among selected members of the Hmong community?
2. What are sources of health information among selected members of the Hmong community?
3. What are perceived barriers to achieving health literacy among the selected members of the Hmong community?

**Limitations**

The following are limitations of this study:

1. Varied levels of English proficiency of participants.

2. Participants might only answer some of the questions due to their lack of understanding health terms.

**Delimitations**

The following are delimitations of this study:

1. The amount of time and resources to complete this study is limited due to requirements of the Mankato Master's Degree.
2. This project was specifically focused on the Hmong population.
3. The research takes place in the state of Minnesota only, and is limited to Hmong residents in the Minneapolis/St. Paul metropolitan area.

**Assumptions**

The following are assumptions of this study:

1. Subjects will respond honestly to the questionnaire administered.
2. Subjects had adequate English proficiency.
3. Subjects understood survey questions.

**Definition of Terms**

Culturally Appropriate- "reflects an understanding of diverse attitudes, beliefs, behaviors, practices, and communication patterns that could be attributed to race, ethnicity, religion, socioeconomic status, historical and social context, physical or mental ability, age, gender, sexual orientation or generational and acculturation status" (Viste, 2007, p. 757).

Health Literacy – "the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services in order to make appropriate health decisions" (Broderick, 2014, p. 2).

Immigrants- people who choose to leave their native land (Viste, 2007).

Limited English Proficiency- self reporting speaking English "not well" and "not at all" (Sheridan et al, 2011).

Low Health Literacy – "individuals with poor understanding of health information" (Sentell & Braun, 2012, p. 83). An individual's inability to pronounce health/medical terminology with related meaning (Lee et al., 2010).

Public Health Literacy –" is complementary to individual health literacy and outcomes include a community's understanding of public health messages as well as having the skills to evaluate and participate in civic action related to health care issues" (Berkman et al., 2010, p. 15).

Refugees- the U.S. Citizenship and Immigration Services define a refugee as "Any person who is outside his or her country of nationality who is unable or unwilling to return to that country because of persecution or well-founded fear of persecution" (Viste, 2007, p. 756).

Shamanism- "is a religious practice that functions under the principle that spirits reside in all living things, have a direct influence over an individual's health and well-being" (Lee & Vang, 2010, p. 303).

Short Assessment for Health Literacy-English (SAHL-E) – a screening tool used to assess participants' reading ability using word recognition. SAHL-E is an 18 key term word reading recognition test used to measure an individual's ability to pronounce health/medical terminology with related meaning and a distractor word unrelated in meaning. The total number of words pronounced correctly is calculated; examinees who score between 0 and 14 are suggested to have low health literacy (Lee et al., 2010).

# CHAPTER II

# REVIEW OF LITERATURE

The purpose of this study was to determine health literacy proficiency, to find out how to make health information easier to understand, and how to make it easier to get the information the Hmong community need. To conduct a thorough literature review on health literacy in the Hmong community, several article databases within the Minnesota State University, Mankato (MNSU, Mankato) Library Services were used. Specific databases reviewed for the purpose of this study include ERIC on EBSCO, ProQuest, PsycINFO, SAGE and Google Scholar. These databases were searched for literature using the following keywords and phrases: *Hmong, health literacy, literacy in health care, low literacy, source of health information, and health communication.* Chapter two of this study provides a review of current literature about Hmong community and cultural beliefs on illness. Also taking a closer look at health literacy and how health literacy relates current level of Hmong health literacy. This chapter also includes a discussion on the difference between Hmong utilization of Western medicine and Hmong utilization of traditional practices. The chapter concludes with an explanation on perceived barriers to health within the Hmong community.

## Hmong Community and Cultural Beliefs on Illness

The Hmong, an ethnic minority from Southeast Asia, immigrated to the United States as refugees from the mid- 1970s to 2006 and are known for their role fighting alongside the United States during the Vietnam War (Thorburn, Keon, & Kue, 2013).

To understand the culture and behaviors of the Hmong community in adapting to the United States, it is important to know the difference between refugees and immigrants (Viste, 2007). The U.S. Citizenship and Immigration Services define a refugee as "Any person who is outside his or her country of nationality who is unable or unwilling to return to that country because of persecution or well-founded fear of persecution" (Viste, 2007, p. 756). An immigrant is defined as one who voluntarily choses to leave her/his native land (Viste, 2007). By knowing the difference is crucial for understanding the cultural context from which refugees interpret and adapt to the values, behaviors, and social norms of their new countries (Viste, 2007). At the end of the Vietnam War, the Hmong fled Laos and went to Thailand or Western Countries such France, Australia, and the United States (Franzen-Castle & Smith, 2013). Since the Hmong's role in supporting the U.S. government in the "Secret War" about 200,000 Hmong have migrated to the US and live predominately in Minnesota, California, Wisconsin, North Carolina, and Michigan (Franzen-Castle & Smith, 2013). Before coming to the United States the Hmong lived a traditional agricultural lifestyle with ancient practices of slash-and–burn farming methods (Viste, 2007), and had little preparation for life as Americans.

The Hmong community is organized to hold together individual families within the clan and to relieve any stress the families may encounter by offering a supportive environment. The Hmong community is family oriented and clans are of paramount importance in the principle of Hmong life (Viste, 2007). The Hmong community is kinship-based, divided into 18 clans, and patrilineal (Thorburn, et al., 2013). A study on breast and cervical screening Thorburn and colleagues (2013) recruited men into the research because men have a major role in the Hmong culture. Hmong Men plays an

important influence among Hmong woman's health-related attitudes, decision-making, and behavior (Thorburn et al., 2012). Traditionally, medical decisions are made by male house hold members, families may seek consultation from extended family members or clans leaders before deciding whether to go forward with a surgery or medical treatment (Thorburn et al., 2012). Hmong community leaders and individuals can be mobilized to help address health disparities because these individuals hold a certain degree of influence in various sectors of the community (Smalkoski et al., 2012). This social support helps individuals cope with health-related problems and it may also lessen the negative effects of low health literacy (Basham, Gracie, & Moon, 2012).

The social organization of the Hmong community is strictly exogamous, with clan elders and shamans being important community functionaries (Franzen-Castle & Smith, 2013). Wilder Research Center surveyed 276 Hmong adults in Minneapolis-St. Paul and found that 66% of Hmong reported their religious identification as Shamanistic (Viste, 2007). Shamanism is a religious practice that functions under the principle that spirits reside in all living things, and have a direct influence over an individual's health and well-being (Lee & Vang, 2010). A shaman is seen as a healer who crosses between the human world and the world of spirits (Franzen-Castle & Smith, 2013). Hmong ritual practices are a way for clan to preserve Hmong identity within western culture (Viste, 2007).

Traditional Hmong health beliefs recognize two root causes of illnesses, natural and spiritual. For example, natural illnesses such as stomachaches and body aches are believed to be the result of unbalanced properties in the body (Lee &Vang, 2010). To seek treatment, medicine women are described as an individual in the community who

can provide natural ingredients or herbal medicine to bring balance to the body (Franzen-Castle & Smith, 2013). However, chronic diseases, birth defects, and mental illnesses are identified as spiritual causes, often accompanied by nightmares (Lee &Vang, 2010). When illnesses are believed to be caused by spirits, Hmong patients typically refuse biomedical treatment in belief that it is ineffective (Lee & Vang, 2010). In addition, spiritual illness occurs when one or more of the human souls become separated from the human body or become trapped in the spirit world, requiring intervention by a shaman to search for the lost spirit and bring it back to the body (Gerdner, 2012).

**Health Literacy**

The Institute of Medicine defines health literacy as including "a variety of skills beyond reading and writing, including numeracy, listening, and speaking which relies on cultural and conceptual knowledge" (Institute of Medicine, 2004, p. 38). Health literacy is needed for basic cognitive skills to complete certain tasks, such as finding information and services in the hospital, filling out medical and insurance forms accurately and completely, and to effectively communicate personal health history with health care providers (Schnitzer et al., 2011). Health literacy capacity is the person's potential to understand his or her health situations (CDC, 2014).

Functional literacy in reading and writing can be placed within multiple health contexts such as printed materials such as medicine bottles, nutrition labels, health information brochures, and medical forms. Numeracy skills are needed for essential tasks such as calculating proper medicine dosage and nutrition labels. Listening and speaking skills are necessary to communicate with health care providers about treatment options,

ways to managing chronic conditions, and taking medications (Institute of Medicine, 2004, p. 37-38).

The 2003 National Assessment of Adult Literacy (NAAL) was utilized in Healthy People 2010 to identify how many individuals had low literacy skills and needed basic adult education (Berkman et al., 2010, p. 15). The assessment was designed to gather information about health tasks structured around three components of health and health care information: 1.) clinical, 2.) prevention and 3.) navigation of the health system (Berkman et al., 2010). The assessment reported using four literacy level categories: below basic, basic, intermediate, and proficient. Results from the NAAL shows that 12-13% scored below basic and 22-33% scored in the basic category on the three functional literacy test, compared to 14% scoring below basic and 22% scoring at the basic category on the health literacy scale (Berkman et al., 2010). Though the results differed between the functional literacy test and the health literacy test, common key conceptual features of literacy were identified that affect performance; task demanded, test characteristics, and the individual's skill (Berkman et al., 2010).

Approximately 80 million U.S. adults are thought to have low health literacy which is associated with poorer health outcomes (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). Low health literacy is common in elderly, minority, and those with less than a high school education (Berkman et al, 2011). Low health literacy is associated with poorer interpretation of labels (prescription medications and nutrition) and health messages (Berkman et al, 2011, p. 99). Lastly, adults with low health literacy are less able to describe how to take medication and are more likely to misunderstand instructions on one or more labels (Berkman et al, 2011).

The Joint Commission's Public Policy Initiative suggested techniques such as "teach back" and "show back" to determine a client's understanding of health information (Schnitzer et al., 2011). The "teach back" technique is a method for individuals to show what they have learned from their health care provider by either teaching what they've learned back to their health care provider or to family and friends (Schnitzer et al., 2011). The "show back" technique is a way for individuals to show what they've learned from their health care provider by performing the learned activity (Schnitzer et al., 2011). These are simple techniques that, when used properly, could help in developing the individual's health literacy skills through building their confidence in retaining information given to them by their healthcare providers (Schnitzer et al., 2011).

**Hmong Health Literacy**

Historically the Hmong did not have their own written language or alphabet until the mid-1950s, because traditionally Hmong communicated through the art of storytelling done by needlework, music, and song (Viste, 2007). The written form of the Hmong language was developed by missionaries (Thorburn, 2013). Hmong levels of literacy vary according to the amount of exposure to English since arriving in the United States. Most cultural traditions, knowledge, and skills in the Hmong community have been passed down orally from one generation to the next (Thorburn, et al., 2013). Oral communication is represented in the majority of the Hmong community through Hmong radio broadcast, live television, and Hmong YouTube videos. In Minnesota, the majority of the Hmong elderly tune into Hmong Radio to get information on current news events or information on various health services and products. Such health information can

range from the promotion of local Hmong doctors who have their own practices, to those who sell traditional medicinal herbs at a local market.

Therefore, while translating written materials into Hmong can be considered culturally appropriate, it may not be adequate for communicating health because of the presence of low literacy rates in both English and Hmong languages (Viste, 2007). Furthermore, Hmong women and men refugees came to the United States with no knowledge of how to speak, read, and write in English (Thorburn et al., 2013).

On the other hand, the younger Hmong population has a majority of individuals who can speak fluent Hmong but may not be able to read or write in Hmong (Thorburn et al., 2013). The Asian and Pacific Islander American Health Forum reported that 95% of Hmong Americans speak a language other than English at home (Lee & Vang, 2010). ). Fang (1988) (as cited in Viste, 2007) in a study of 126 Hmong adults in California indicated that most Hmong can read both English and Hmong fairly well to very well.

**Hmong Utilization of Western Medicine**

Many Hmong families are well into their third generation in America, they are becoming accustomed to language and resources. According to Thorburn and colleagues (2013) Hmong women and men utilize health care providers and internet as sources of health information to obtain information about specific topics like breast and cervical cancer. However, mistrust of western medicine and the health care system may be barriers for the Hmong population in seeking further health information due to lack of understanding or familiarity with health terms, cultural differences, traditional health beliefs and practices (Thorburn et al., 2012).

In addition, negative perceptions and experiences with the health care system as well as differences in race and language may be barriers to seeking health information (Thorburn et al, 2012). Often, negative perceptions can affect Hmong American children because Hmong parents have been known to refuse to consent to their child's treatment due to concerns regarding physicians' intentions (Lee & Vang, 2010). Interestingly, Thorburn and associates (2012) found that majority of the Hmong community, specifically the younger generation trust western medicine because western medicine is science-based and utilizes technology. Further, younger members of the Hmong community are concerned about parents or elders mixing Hmong and Western medicines because of potential negative interactions (Franzen-Castle & Smith, 2013).

**Hmong Utilization of Traditional Health Practices**

Hmong medicine is a combination of herbal medicine and the practice of Shamanism (Children's Hospitals and Clinics of Minnesota, 2012). The Hmong focus on a holistic approach to the well-being of an individual's health which includes physical, emotional and spiritual health (Bengiamin, Chang, & Capitaman, 2011). Herbal treatments continue to be used to treat illnesses in the Hmong community. The herbal medicines may consist of roots, bark, and plants, which are then boiled into a tea for drinking (Children's Hospital and Clinics of Minnesota, 2012). Traditionally, someone who is ill will eat warm temperature food and certain vegetables (Children's Hospital and Clinics of Minnesota, 2012).

Along with traditional home remedies, the Hmong community practices spiritual healing ceremonies through a shaman. These ceremonies are conducted either in the hospital or in the home (Children's Hospitals and Clinics of Minnesota, 2012). Spiritual

healing is important because it has a deep relationship with the Hmong religion and culture (Children's Hospital and Clinics of Minnesota, 2012). In the presence of an illness, a spiritual healing ceremony conducted by a shaman to bring the soul back to the body will be performed to cure the person of their illness (Gerdner, 2012).

**Perceived Barriers to Health**

Literature relating to perceived barriers to health within the Hmong community was reviewed. Baker, Dang, Ly, & Diaz (2010) researched perceived barriers to immunization among Hmong parents in California, and identified three potential barriers to Hmong parents not immunizing their children. Potential contributors to these perceived barriers to immunization were: acculturation, socioeconomic position (SEP), and use of traditional Hmong health care practices (Baker et al., 2010). Of these potential contributors to perceived barriers to immunization, acculturation and SEP were found to be nonfactors of perceived barriers to health (Baker et al., 2010). However, the use of traditional Hmong health care practices was found to be a perceived barrier to immunization for Hmong parents (Baker et al., 2010). The use of traditional Hmong health care practices was found to be a perceived barrier to immunizations because it is possible that Hmong parents who sought services from Shamans and herbalists often have different perceptions of the efficacy and safety of Western medicine interventions such as immunizations and preventing disease (Baker et al., 2010). Another reason for these barriers is that parents who sought services from Shamans and herbalists sought less care from Western medicine and health care providers (Baker et al., 2010).

In a study by Thorburn (2013) on sources of health information about breast or cervical cancer among the elder Hmong population, participants reported that they did

not know where to go for health information and noted that one barrier was language. In a report on Hmong mental health in Ramsey County, Minnesota, language was also found to be a barrier in accessing health information (Thao, Leite, & Atella, 2010). This report also identified complex referral processes and long wait periods to see a mental health professional, complicated intake processes that did not allow time for patients to build trust and relationships with doctors, and a lack of culturally appropriate materials as perceived barriers to accessing health information (Thao, Letite, & Atella, 2010). The Hmong community experiences practical barriers that limit access to Western health services, such as language barriers, lack of transportation, and lack of health insurance (Thao, Letite, & Atella, 2010). Hmong youth also felt restricted by these practical barriers, in addition to the dependence upon their parents to seek professional help and their parents' acceptance of Western services (Thao, Letite, & Atella, 2010).

**Summary**

Health literacy is an important concern in the United States, affecting the health outcome of individuals, particularly within the Hmong population. The Hmong is a growing population in the U.S. with low health literacy rates. Sources of health information in the Hmong community derive from deeply rooted religious beliefs and clan associations. However, as the younger Hmong generation has acculturated to western culture and attitudes they may have an increase in health literacy levels within the Hmong community.

# CHAPTER III

# METHODOLOGY

This chapter describes the research design, participant selection, instrumentation, data collection methods, and data analysis of this study. The purpose of this study is to assess health literacy proficiency, sources of health information, and barriers to health literacy among selected members of the Hmong community in Minnesota.

## Research Design

This research study used a cross-sectional, descriptive design involving the collection of data during one period of time and that portrays characteristics of a given population or summarizes variables so they can be easily comprehended (Cottrell & McKenzie, 2011).

Based upon the selected sample the following research questions will be investigated:

**Table 3.1 Table of Specification**

| Research Question (RQ) | Survey items or methods used to assess RQ'S | Level of Data (Nominal, Ordinal, Interval/Ratio)* | Analysis needed to assess RQ |
|---|---|---|---|
| What are levels of health literacy among selected members of the Hmong community? | Short Assessment of Health Literacy-English (SAHL-E) | Nominal, Interval/Ratio | Mean and Standard Deviation |
| What are sources of health information among selected members of the Hmong community? | Sources of Health Information | Nominal | Descriptive Statistics |
| What are perceived barriers to achieving health literacy among the selected Hmong community? | Sources of Health Information | Nominal | Descriptive Statistics |
| * Indicates level of data for survey items or methods, not RQ's | | | |

**Participant Selection**

Prior to data collection, approval for research involving human subjects from the Minnesota State University, Mankato, MN Institutional Review Board Approval (IRB) was obtained (see Appendix A). Participants' eligibility criteria were (1) self-identified as Hmong, (2) aged 18 years or older; (3) adequate English proficiency; and (4) residents of Minnesota. These four criteria were based upon a report by US Census Bureau (2010) stating that Hmong aged 5-17 year olds speak English very well to well, whereas Hmong 18-64 years old were underrepresented for speaking English well. Hmong aged 65 years and older were mainly categorized as not speaking English at all.

A convenience sample of members of the Hmong community between ages 18-50 years old with adequate English Proficiency were selected for this research. This age range was selected because the Short Assessment of Health Literacy-English (SAHL-E) screening tool is only reliable if the participants have adequate English proficiency. Participants were selected from the Minnesota State University, Mankato-Hmong Student Association, Hmong American Partnership, and Capital Family Eye Clinic (see Appendix B). Participants were informed that their participation in this research was voluntary and that all collected data would be kept confidential. Participants were free to stop any time during the study and were not treated differently if they decided to stop taking part in the research.

**Instrumentation**

To assess health literacy proficiency among sample members of the Hmong community the researcher used the SAHL-E screening tool. The SAHL-E screening tool was chosen because of the brief administration time (2-3 minutes) and good reliability

(0.80) and validity that could be used to identify low health literacy among English speakers (Lee, Stucky, Lee, Rozier, & Bender, 2010). Lee and research team (2010) created the SAHL-E screening tool which was obtained from the Agency for Healthcare Research and Quality. The researcher was given permission to use this tool contingent upon citing the Agency for Healthcare Research and Quality (see Appendix E).

The SAHL-E was designed to identify individuals with low literacy (Lee et al., 2010). The 18 test terms were selected from the English version of an instrument that contained the 66 medical terms in the Rapid Estimate of Adult Literacy in Medicine (REALM), a test designed to measure reading ability based on word recognition (Lee et al., 2010). As a departure from REALM, the research team incorporated 18 key terms with related meaning and a distractor word unrelated in meaning to the SAHL-E test (Lee et al., 2010).

The participants taking the SAHL-E are instructed to pronounce medical test terms printed on a 4”-by- 5” flash card, with each card containing the key and the distracter at the bottom of the flash card, with a “don’t know” response option to eliminate guessing during the screening time (Lee et al., 2010). A score between 0 and 14 suggests the examinee has low health literacy.

The researcher developed a written questionnaire (see Appendix E) to collect data on sources of health information and perceived barriers to health literacy among selected members of the Hmong community in Minnesota. A pilot study was completed using a convenience sample of five adult Hmong individuals to ensure that the questionnaire was understandable, clear, and answerable. The pilot subjects consisted of a community health worker, three individuals at a social Hmong gathering, and the

Director of Programs at the Hmong American Partnership agency. The researcher asked the pilot study participants about the clarity of the survey and the appropriateness of the examples. The final instrument was created based on feedback from the pilot study participants. The researcher made additional clarification on the questionnaire by including a side text stating that participants should choose an item from the list to indicate his/her first and second choice. In addition, one participant suggested that the researcher should highlight the side text for future participants to better select answers from the list presented.

**Data Collection**

Prior to data collection, a thorough review of literature published including research was conducted. Data for this study were collected using 1) Short Assessment of Health Literacy-English (SAHL-E) screening tool (Appendix E) and 2) the sources of health information and perceived barriers to health literacy questionnaire, designed specifically for this study (Appendix F). This questionnaire was designed to assess sources of health information and perceived barriers to health literacy. In order to collect data for the study, the researcher used a recruitment script (Appendix C) to verify if participants had adequate English proficiency. The researcher had a clipboard with a score sheet to record the participant's answers. The researcher held the clipboard away from participant's plain sight to not distract participants of the scoring procedure. The participant interview for the SAHL-E screening tool was performed individually with each participant in a private area. The interviews were administered by the researcher. This eliminated the potential for social influence from bystanders and provided a safe

environment if a participant felt frustrated or embarrassed related to the inability to complete the SAHL-E interview screening.

**Data Analysis**

Collected questionnaire data were analyzed using the Statistical Package for the Social Sciences (SPSS) 22 software. Descriptive measures of data were summarized using frequency tables and measures of central tendency. Age and income were examined as ratio level data. To analyze health literacy, the mean and standard deviation were used to assess health literacy levels among participants. The first and second sources of health information were descriptively analyzed and summarized using frequency tables. Some participants provided answers that were not from the provided list of responses. To compensate for answers not included in the list of responses the researcher added an "others" row in the questionnaire frequency graphs to include those participants' responses.

# CHAPTER IV

# FINDINGS

## Introduction

The purpose of this study was to determine health literacy levels, sources of health information, and perceived barriers to health literacy among selected members of the Hmong community in Minnesota. Data were collected for the study from March 24, 2015 through March 27, 2015. Participant totals were as follows: Minnesota State University, Mankato Hmong Student Association (*n*=24), Hmong American Partnership (*n*=6), and Capital Family Eye Clinic (*n*=10).

Participants were asked to identify their sources of health information over three specific periods of time: (1) when reflecting on the past, whether it was due to illness or not, (2) during an illness, and (3) when seeking information about health before they were ill (preventive). The categories of sources included were*: Family/friends, Medical,* M*edia,* and O*thers*.

The third part of the questionnaire asked participants to report perceived barriers they experienced when (1) searching for health information, (2) talking to a health care provider, and (3) receiving health information materials. The categories of barriers included were: *Skills, Medical System, Resources,* and *Others* (see Appendix F survey instrument).

**Description of Sample**

The convenience sample for this research consisted of 40 individuals living in Minnesota. All participants were Hmong. Sixty-eight percent (*n*=27) were female and 32% (*n*=13) were male. Participants' age ranged from 18 years old to 48 years old. Twenty eight percent were 19 years old (*n*=11), 20% (*n*=8) were 20 years old, and 13% (*n*=5) were 26 years old (see Table 4.1). Respondents' education levels were primarily some college/technical/vocational school at 75% (see Table 4.2). House hold income ranged from less than $10,000 to more than $60,000. Eighteen percent (*n*=7) of participants did not want to reveal household income (see Table 4.3).

Table 4.1 *Participant Ages*

| | Frequency | Percent |
|---|---|---|
| 18 yrs. | 2 | 5.0 |
| 19 yrs. | 11 | 27.5 |
| 20 yrs. | 8 | 20.0 |
| 21 yrs. | 1 | 2.5 |
| 22 yrs. | 3 | 7.5 |
| 23 yrs. | 1 | 2.5 |
| 24 yrs. | 2 | 5.0 |
| 25 yrs. | 1 | 2.5 |
| 26 yrs. | 5 | 12.5 |
| 27 yrs. | 1 | 2.5 |
| 30 yrs. | 1 | 2.5 |
| 31 yrs. | 1 | 2.5 |
| 36 yrs. | 1 | 2.5 |
| 42 yrs. | 1 | 2.5 |
| 48 yrs. | 1 | 2.5 |
| Total | 40 | 100.0 |

Table 4.2

*Education Level*

| | Frequency | Percent |
|---|---|---|
| High School/GED | 5 | 12.5 |
| Some college/technical/vocational | 30 | 75.0 |
| Completed Bachelor's degree or higher | 5 | 12.5 |
| Total | 40 | 100.0 |

Table 4.3

*Household Incomes*

| | Frequency | Percent |
|---|---|---|
| Less than $10,000 | 17 | 42.5 |
| $10,000 to $19,000 | 2 | 5.0 |
| $20,000 to $39,000 | 7 | 17.5 |
| $40,000 to $59,000 | 4 | 10.0 |
| More than $60,000 | 3 | 7.5 |
| Do not want to answer | 7 | 17.5 |
| Total | 40 | 100.0 |

## Findings

### Research Question 1: What are levels of health literacy among selected members of the Hmong community?

Thirty-two participants completed the SAHL-E screening tool for estimation of health literacy among selected members of the Hmong community in Minnesota. Eight participants chose to not participate in the screening tool. The 18 test items provided in the SAHL-E screening tool suggested that a score between 0 to 14 is considered low health literacy. Twenty-five percent of participants scored 17 on the SAHL-E screening (see Table 4.4). Among the 32 participants who took the SAHL-E score, the mean was 15.5, with a standard deviation of 3.016. The mean SAHL-E score (15.5±3.016) from the 32 participant sample size was then used to determine the health literacy levels of the Hmong community. The finding showed that the Hmong selected participants in Minnesota has adequate health literacy levels.

Table 4.4

*SAHL-E Scores*

| Valid | Frequency | Percent |
|---|---|---|
| 4.00 | 1 | 2.5 |
| 7.00 | 1 | 2.5 |
| 12.00 | 1 | 2.5 |
| 13.00 | 1 | 2.5 |
| 14.00 | 1 | 2.5 |
| 15.00 | 6 | 15.0 |
| 16.00 | 6 | 15.0 |
| 17.00 | 10 | 25.0 |
| 18.00 | 5 | 12.5 |
| Total | 32 | 80.0 |
| Missing Responses | 8 | 20.00 |
| Total | 40 | 100.0 |

Using the SAHL-E screening tool, the researcher analyzed the most common words that were incorrect among the selected members of the Hmong community. Common words found to be incorrect were constipation (20%), hemorrhoids (38%), and syphilis (53%).

Table 4.5

SAHL-E Incorrect

| | Frequency | Percent |
|---|---|---|
| Constipation | 8 | 20.0 |
| Hemorrhoids | 15 | 37.5 |
| Syphilis | 21 | 52.5 |

**Research Question 2**: **What are sources of health information among selected members of the Hmong community?**

To assess the second research question, a frequency table was used to tally the total number of sources of health information. The following tables depict Part II of the questionnaire regarding sources of health information. The sample sizes used to determine the percentage varied because some participants did not answer certain questions and/or did not select a second choice.

Table 4.6 displays the first source from which participants perceived they had learned the most about general health and wellness in the past. Data showed that 53% of the participants' first source from which they had learned the most about general health and wellness in the past was from "mom/step mom". Followed by the "Internet" (28%), "others" (10%), "doctors" (5%), "clinics" (3%), and "pamphlets/brochures" (3%).

Table 4.6 also displays the second source from which participants perceived they had learned the most about general health and well in the past. Data showed that 28% of the participants' second source from which they had learned the most about general health and wellness in the past was from "doctors". Followed by the "Internet" (18%), "others" (15%), "clinics" (10%), "mom/step mom" (8%), "dad/step dad" (5%), "nurses" (5%), "home remedies" (5%), "workplace" (3%), and "bulletins" (3%).

Table 4.6

*The sources from which participants perceived they had learned the most about general health and wellness in the past*

| | *n* | First Source (%) | *n* | Second Source (%) |
|---|---|---|---|---|
| Mom/Step Mom | 21 | 52.5% | 3 | 7.5% |
| Internet | 11 | 27.5% | 7 | 17.5% |
| Others | 4 | 10% | 6 | 15% |
| Doctors | 2 | 5% | 12 | 30% |
| Clinics | 1 | 2.5% | 4 | 10% |
| Pamphlets/Brochures | 1 | 2.5% | 0 | 0% |
| Nurses | 0 | 0% | 2 | 5% |
| Home Remedies | 0 | 0% | 2 | 5% |
| Workplace | 0 | 0% | 1 | 2.5% |
| Bulletins | 0 | 0% | 1 | 2.5% |
| Dad/Step Dad | 0 | 0% | 2 | 2.5% |
| Total | 40 | | 40 | |

During an illness (see Table 4.7) the first source of health information participants used to get back to good health was the Internet (30%). Followed by mom/step mom (18%), home remedies (13%), others (13%), doctors (10%), clinics (10%), shamans (3%), books (3%), community health center (3%).

The second source (see Table 4.7) of health information participants used to get back to good health was doctors (20%). Followed by shamans (18%), others (13%), clinics (10%), home remedies (10%), internet (8%), mom/step mom (8%), book (5%),nurses (3%), community health centers (3%), Hmong American Partnership (3%), and pamphlets/brochures (3%).

Table 4.7

*The sources from which participants perceived they had learned how to get back to good health during times of illness*

| | *n* | First Source (%) | *n* | Second Source (%) |
|---|---|---|---|---|
| Internet | 12 | 30% | 3 | 7.5% |
| Mom/Step Mom | 7 | 17.5% | 3 | 7.5% |
| Home Remedies | 5 | 12.5% | 4 | 10% |
| Others | 5 | 12.5% | 5 | 12.5% |
| Doctors | 4 | 10% | 8 | 20% |
| Clinics | 4 | 10% | 4 | 10% |
| Shamans | 1 | 2.5% | 7 | 17.5% |
| Books | 1 | 2.5% | 2 | 5% |
| Community Health Centers | 1 | 2.5% | 1 | 2.5% |
| Nurses | 0 | 0% | 1 | 2.5% |
| Hmong American Partnership | 0 | 0% | 1 | 2.5% |
| Pamphlets/Brochures | 0 | 0% | 1 | 2.5% |
| Total | 40 | | 40 | |

Table 4.8, displays the first source from which participants' perceived they had wanted to learn about preventative care was the Internet (68%). Followed by doctors (13%), mom/step mom (10%), health fairs (5%), and others (3%).

The second source (Table 4.8) from which participants perceived they had wanted to learn about preventative care was clinics (18%). Followed by a tie between doctors, the Internet, and books (15%), pamphlets/brochures (10%), mom/step mom (8%), health fairs (5%), others (5%), home remedies (3%), shamans (3%), sister/step sister (3%).

Table 4.8

*The sources from which participants perceived they had wanted to learn about preventative care*

| | *n* | First Source (%) | *n* | Second Source (%) |
|---|---|---|---|---|
| Internet | 27 | 67.5% | 6 | 15% |
| Mom/Step Mom | 4 | 10% | 3 | 7.5% |
| Home Remedies | 0 | 0% | 1 | 2.5% |
| Others | 1 | 2.5% | 2 | 5% |
| Doctors | 5 | 12.5% | 6 | 15% |
| Clinics | 0 | 0% | 7 | 17.5% |
| Shamans | 0 | 0% | 1 | 2.5% |
| Books | 0 | 0% | 6 | 15% |
| Pamphlets/Brochures | 0 | 0% | 4 | 10% |
| Sister/Step Sister | 0 | 0% | 1 | 2.5% |
| Health Fairs | 2 | 5% | 2 | 5% |
| Total | 39 | | 39 | |
| Missing Response | 1 | | 1 | |
| Total | 40 | | 40 | |

**Research Question 3: What are perceived barriers to achieving health literacy among selected members of the Hmong community?**

The following tables depict Part III of the questionnaire about perceived barriers to achieving health literacy. The sample sizes used to determine the percentage varied due to the fact that some participants did not answer certain questions and/or did not select a second choice.

Table 4.9, shows that when searching for health information, participants' first barrier was medical terms (35%). Followed by health knowledge (23%), navigating health care system (8%), others (8%), education level (5%), difficult medical forms (5%), have money issues (5%), reading level (5%), have limited time (3%), language barriers (3%), and poor communication from health providers (3%).

The second barrier, Table 4.9, from which participants' perceived barriers when searching for health information was health knowledge (20%). Followed by medical terms (12%), difficult medical forms (10%), having money issues (10%), poor communication from health care providers (10%), education level (8%), others (5%), navigating health care system (3%), clinic location is too far (3%), have limited time (3%), no access to the Internet (3%), language barriers (3%), and reading levels (3%)

Table 4.9

*Participants' perceived barriers to searching for health information*

| | *n* | First Barrier (%) | *n* | Second Barrier (%) |
|---|---|---|---|---|
| Medical Terms | 14 | 35% | 5 | 12.5% |
| Health Knowledge | 9 | 23% | 8 | 20% |
| Navigating Health Care System | 3 | 7.5% | 1 | 2.5% |
| Others | 3 | 7.5% | 2 | 5% |
| Education Level | 2 | 5% | 3 | 7.5% |
| Difficult Medical Forms | 2 | 5% | 4 | 10% |
| Have Money Issues | 2 | 5% | 4 | 10% |
| Reading Level | 2 | 5% | 1 | 2.5% |
| Have Limited Time | 1 | 3% | 1 | 2.5% |
| Language Barriers | 1 | 3% | 1 | 2.5% |
| Poor Communication From Health Care Providers | 1 | 3% | 4 | 10% |
| No Access to Internet | 0 | 0% | 1 | 2.5% |
| Clinic Location is Too Far | 0 | 0% | 1 | 2.5% |
| Total | 40 | | 40 | |

The first barrier, Table 4.10, from which participants' perceived barriers when talking to a health care provider were medical terms (27.5%). Followed by health knowledge (23%), have limited time (10%), no access to interpretation services (8%), difficult medical forms (5%), navigating health care system (5%), others (5%), language barriers (3%), education levels (3%), and clinical locations too far (3%).

The second barrier, Table 4.10, from which participants perceived barriers when talking to a health care provider was medical terms (25%). Followed by health knowledge (13%), have money issues (13%), difficult medical forms (10%), have limited time (8%), poor communication from health care providers (8%), navigating health care system (5), educational level (3%), and others (3%).

Table 4.10

*Participants' perceived barriers when talking to a health care provider*

| | *n* | First Barrier (%) | *n* | Second Barrier (%) |
|---|---|---|---|---|
| Medical Terms | 11 | 27.5% | 10 | 25% |
| Health Knowledge | 9 | 22.5% | 5 | 12.5% |
| Have Limited Time | 4 | 10% | 3 | 7.5% |
| No Access to Interpretation Services | 3 | 7.5% | 0 | 0% |
| Difficult Medical Forms | 2 | 5% | 4 | 10% |
| Navigating Health Care System | 2 | 5% | 2 | 5% |
| Others | 2 | 5% | 1 | 2.5% |
| Language Barriers | 1 | 2.5% | 0 | 0% |
| Education Level | 1 | 2.5% | 1 | 2.5% |
| Clinic Location is Too Far | 1 | 2.5% | 0 | 0% |
| Have Money Issues | 0 | 0% | 5 | 12.5% |
| Poor Communication From Health Care Providers | 0 | 0% | 3 | 7.5% |
| Total | 36 | | 34 | |
| Missing Responses | 4 | | 6 | |
| Total | 40 | | 40 | |

The first barrier, Table 4.11, from which participants perceived as barriers when receiving health information materials from health providers, was medical terms (40%).

Followed by health knowledge (23%), difficult medical forms (10%), others (13%), language barriers (5%).

The second barrier, Table 4.11, from which participants perceived as barriers when receiving health information materials from health providers, was the same for both health knowledge and medical terms (15%). Followed by difficult medical forms (10%), others (8%), poor communication form health care providers (8%), no availability to materials translated into my language (5%), have a limited time (5%), education level (3%), reading level (3%), and navigating health care system (3%).

Table 4.11

*Participants' perceived barriers when receiving health information materials from health providers*

| | *n* | First Barrier (%) | *n* | Second Barrier (%) |
|---|---|---|---|---|
| Health Knowledge | 9 | 22.5% | 6 | 15% |
| Medical Terms | 16 | 40% | 6 | 15% |
| Difficult Medical Forms | 4 | 10% | 4 | 10% |
| Others | 5 | 12.5% | 3 | 7.5% |
| Poor Communication From Health Care Providers | 0 | 0% | 3 | 7.5% |
| No Availability to Materials Translated into my language | 0 | 0% | 2 | 5% |
| Have Limited Time | 0 | 0% | 2 | 5% |
| Education Level | 0 | 0% | 1 | 2.5% |
| Reading Level | 0 | 0% | 1 | 2.5% |
| Navigating Health Care System | 0 | 0% | 1 | 2.5% |
| Language Barriers | 2 | 5% | 0 | 0% |
| Total | 36 | | 29 | |
| Missing Responses | 4 | | 11 | |
| Total | 40 | | 40 | |

## Summary of Findings

The purpose of this descriptive study was to determine health literacy proficiency levels, sources of health information, and perceived barriers to health literacy among the Hmong community in Minnesota. The study involved the distribution and collection of 40 questionnaires and the SAHL-E screening tool assessment. The final sample size was 40 completed questionnaires along with 32 completed SAHL-E screenings. The respondents' answer were then processed into SPSS and analyzed into a frequency data set. To the author's knowledge, this the only study of its kind that has been performed on determining health literacy levels, sources of health information, and perceived barriers to health literacy among the Hmong community in Minnesota.

## Part I: Health Literacy

The purpose of this study was to determine health literacy proficiency among the Hmong community in Minnesota. When analyzing the health literacy scores of participants, a mean of 15.5±3.016 was reported. The overall findings of this research assessed that the Hmong community in Minnesota has adequate health literacy levels. This finding is similar to a study by Thorburn (2013) of 84 Hmong participants who reported that most Hmong read English at a "pretty well" or "very well" level (p.473). Although, data from the SAHL-E screening tool reported that the participants have adequate health literacy proficiency levels, when participants were screened on complex medical terms such as *constipation*, *hemorrhoids*, and *syphilis* the participants had difficulty pronouncing and/or identifying the provided key word.

**Part II: Sources of Health Information**

Participant responses from the sources of information questionnaire showed that the majority of sources of health information came from media technology (which included the Internet), followed by a medical environment. However, with respect to being healthy or ill in the past, participant results showed that the primary source of information to get better came from a family member, in this case a mom/stepmom (53%), followed by the media and medical environments.

**Part III: Perceived Barriers to Health Literacy**

Participants the findings indicated that perceived barriers to achieving health literacy were medical terms and a lack of health knowledge. Overall, the most common theme that participants identified as a perceived barrier to health literacy was the lack of knowledge of medical terms, whether it was searching for health information, when talking to a health care provider, and/or receiving health information materials from their health care provider.

# CHAPTER V

# SUMMARY, CONCLUSCIONS, RECOMMENDATIONS

Health literacy is an important skill for obtaining optimal health. However, disparities in health literacy still exist in the United States. The disparity is even greater in the Hmong community. Various studies have been conducted to provide information on where the Hmong community obtains sources of health information (Thorburn et al., 2013). In addition, other studies need to be conducted on how to improve health literacy skills within the Hmong community in Minnesota (Pfeifer & Thao, 2013).

This study aimed at identifying health literacy proficiency levels, sources of health information, and perceived barriers to health literacy for sampled Hmong residents using the SAHL-E screening tool and a related developed questionnaire by the researcher. Using the SAHL-E and developed questionnaire, the theme of a lack of knowledge in medical terms was found in the health literacy proficiency levels, sources of health information, and perceived barriers. Described below is an explanation of the limitation, summary, conclusion, and recommendations for further research.

## Limitations of the Study

There were several limitations to the study. A limitation to the study is that it comprised of a limited sample size (*n=40*). The small sample size was a limitation because it limits the generalization that can be made from the findings of the study.

A second limitation to the study is that a majority of the sample size (70%) included only young adults (18-25 years of age). This presents a limitation because the

education levels of the young adults had some college/technical/vocational level of education. With 70% of the sample size having some college/technical/vocational level of education, this may have skewed the overall SAHL-E scores to be higher than expected. A more diverse age range among the sample size would've better represented the health literacy levels across all age groups within the Hmong community in Minnesota.

Another limitation to this study was the data collection at Hmong American Partnership, St. Paul. While collecting data at the Hmong American Partnership center in St. Paul, the researcher was expecting more participant responses from the middle age to elderly age group. The researcher was only able to collect six (*n=6*) questionnaires out of the total sample (*n=40*). This may also contribute to the limitation of the higher than expected health literacy score (15.5±3.016).

**Summary & Conclusion**

The mean score from the SAHL-E screening tool was 15.5±3.016, showing that the sampled Hmong community in Minnesota has an adequate level of health literacy skills. Findings regarding sources of health information within the selected members of the Hmong community in Minnesota showed that the main sources of health information came from family, the Internet, and the doctors. Collected data for this study showed that medical terms and health knowledge were most common perceived barriers.

Various studies, (Thorburn et al, 2012) including this one, have found that traditional Hmong health practices are still practiced within the Hmong community. Perhaps this has led to a difference between Western health care and traditional Hmong health practices. The difference between the two health care methods may be attributed to

the lack of “face time” with doctors, resulting in poor patient to health care provider communication and the lack of a patient to doctor relationship. This may further result in a Hmong individual unwillingness to attempt to improve health literacy skills.

The findings from this research cannot be considered generalizable to the entire Hmong community in Minnesota due to the lack of proven validity and reliability of the questionnaire, and due to the small sample size. However, the information from this study maybe useful as a starting point or model to investigate further health literacy, sources of health information, and perceived barriers to health literacy for the Hmong community in Minnesota and other similar diverse communities .

Though, findings from this study were based on a small sample size that cannot be generalizable to the entire Hmong community in Minnesota. The findings from the young adult participants show a promising future in the education and health literacy proficiency levels for the Hmong community in Minnesota. Seventy percent of participants were in the age range of 18-25 years of age. Of that 70% of young adult participants, 88% had at least some college/technical/vocational had completed a Bachelor’s degree or higher.

**Recommendations for Further Research**

The author recommends any future study using a similar questionnaire to include an answer choice of “other” or “not applicable” to be included in the provided response list. Another change to the questionnaire as recommended by the author is for future studies to develop a shorter questionnaire. The author observed that the developed questionnaire for this study may have been too long in length. The author suspects that

the length of the questionnaire may have played a role in losing the participants' attention and detail to following instructions of the questionnaire.

Further studies are needed to identify correlations between socioeconomic statuses and/or education levels to health literacy proficiency levels and perceived barriers to health literacy proficiency within the Hmong community. A detailed study looking at specific levels within socioeconomic status and specific education levels to health literacy would better represent health literacy proficiency levels. Furthermore, a study on a larger sample size within the Hmong community in Minnesota would better represent the health literacy proficiency levels within the Hmong community. A larger sample size study would help to provide better generalizations as well as more reliable and valid statistics for health proficiency levels within the Hmong population in Minnesota.

**Recommendations for Health Education Practice**

Existing research is limited regarding the questions addressed in this study. However, this study does support health literacy proficiency levels, sources of health information, and perceived barriers to health literacy within the Hmong community in Minnesota. This study also supports the need for more approaches/strategies to increase health literacy proficiency levels within the Hmong community in Minnesota and to help them overcome perceived health literacy barriers. In addition, collected data from this study suggest that more focus should be made in educating the Hmong community in Minnesota on medical terms. To improve medical term knowledge within the Hmong community in Minnesota, the researcher suggests that this can be accomplished through health care providers and local community-based organizations. When working with

members of the Hmong community, health care providers can practice the “teach back” technique. The “teach back” technique has the patient describing what they have learned from their health care provider back to their health care provider or to family and friends (Schnitzer et al., 2011). The last recommendation is that local community-based organizations should provide educational programs focusing on health information to the Hmong community in Minnesota. The educational programs can be beneficial to members of the Hmong community because not only will the programs help to increase health literacy proficiency, the programs will also help to improve the overall health knowledge of the Hmong community.

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# APPENDIXES

# Appendix A

## Institutional Review Board Approval

MINNESOTA STATE UNIVERSITY
MANKATO

March 23, 2015

Dear Judith Luebke, PhD:

Re: IRB Proposal entitled "[734586-3] Health Literacy Proficiency, Sources of Health Information, and Perceived Barriers to Health Literacy among Selected Members of the Hmong Community in Minnesota" Review Level: Level *[I]*

Your IRB Proposal has been approved as of March 23, 2015. On behalf of the Minnesota State University, Mankato IRB, we wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the Associate Vice-President of Research and Dean of Graduate Studies immediately.

The approval of your study is for one calendar year less a day from the approval date.When you complete your data collection or should you discontinue your study, you must submit a Closure request (see http://grad.mnsu.edu/irb/continuation.html). Please include your IRBNet ID number with any correspondence with the IRB.

The Principal Investigator (PI) is responsible for maintaining signed consent forms in a secure location at MSU for 3 years. If the PI leaves MSU before the end of the 3-year timeline, he/she is responsible for following "Consent Form Maintenance" procedures posted online (see http://grad.mnsu.edu/irb/storingconsentforms.pdf).

Sincerely,

Mary Hadley, Ph.D.
IRB Coordinator

Julie Carlson, Ed.D.
IRB Co-Chair

Jeffrey Buchanan, Ph.D.
IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Minnesota State University, Mankato IRB's records.

# Appendix B

## Permission Letters

Hi Amanda,

We the board of HSA have talked about it, and we permit you to collect data from our members on March 24th at 7pm. If there are any questions, feel free to contact me. Thank you!

Sincerely,

---


## *Benjamin Thao*

*Business Management*

*President | Hmong Student Association 2014-2015*

*Secretary | Hmong Student Association 2013-2014*

*Student Worker | Asian American and Pacific Islander Affairs 2014-2015*

*Minnesota State University, Mankato*

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North Minneapolis Office
1206 42nd Avenue
Minneapolis, MN 55412
Main Phone: 612.377.8482
Fax: 612.377.4633
info@hmong.org

March 23, 2015

Dear Members of the IRB Committee,

On behalf of Hmong American Partnership, I am writing to formally indicate our awareness of the research proposed by Amanda Vang, a student at Minnesota State University, Mankato. We are aware that Amanda Vang intends to conduct her research by administering a screening tool and written survey at our organization.

As Director of Programs I am responsible for oversight of all programs in our Children and Family Services and Health and Wellness programs. I grant Amanda Vang permission to conduct her research at our organization. What this entails is she will be allowed to sit in our lobby and invite clients to participate in her study. They are able to decline without obligation to participate.

If you have any questions or concerns, please feel free to contact my office at (651) 495-1517.

Sincerely,

Bruce Thao

Capital

Family Eye Clinic LLC

941 Payne Avenue
St. Paul, MN 55130
Phone: 651 - 842 - 8040
Fax: 651 - 842 - 8041

March 27, 2015

Dear Members of the IRB Committee,

On behalf of Capital Family Eye Clinic, I am writing to formally indicate our awareness of the research proposed by Amanda Vang, a student at Minnesota State University, Mankato. We are aware that Amanda Vang intends to conduct her research by administering a screening tool and written survey at our organization.

As doctor I am responsible for managing the clinic here and I grant Amanda Vang permission to conduct her research at our organization.

If you have any questions or concerns, please feel free to contact my office at (651) 842-8040.

Sincerely,

Dr. Se Xiong, OD

# Appendix C

## Recruitment Script

Excuse me, sir/madam

Do you have a minute?

My name is Amanda Vang and I am a Graduate student of Health Science at Minnesota State University, Mankato. I am conducting a research study on health literacy. The purpose of the research is to find out what we can do to make health information easier to understand and how to make it easier to get the information people need.

I am recruiting Hmong individuals with adequate English proficiency to complete a health literacy screening tool and a survey, which will take about 10 minutes. You must be at least 18 years old to complete this survey. Your participation is completely voluntary; you may skip any questions that you do not want to answers. Your answers will be anonymous.

Would you be interested in participating in this research?

- If not interested, thank the individual for his/her time.
- If interested, then move to the consent form.

# Appendix D

## Consent Form for Study Participants

Thank you for participating in the Health Literacy Research. The purpose of the research is to find out what we can do to make health information easier to understand and how to make it easier to get the information people need.

**What we will ask:** We are asking for your participation in a research study on health literacy proficiency, sources of health information, and perceived barriers to health literacy. This research is supervised by Dr. Luebke. If you agree to be in this research, and sign this consent form, we ask that you take part in a screening tool to assess health literacy level. Along with the screening tool, you will also complete a survey. The screening tool and survey should take 10 minutes of your time.

**Risks:** You might feel frustrated or embarrassed about not understanding some of the questions. You do NOT have to answer any questions that make you feel uncomfortable. The risks of participating are no more than the risks experienced in daily life.

**Benefits:** There are no benefits to you.

**Compensation:** You will not be paid for participating in this research.

**Confidentiality:** The responses from this study will remain confidential. Any publicly available report will not omit any information that could make it possible for you to be identified. Your name and any other identifying information are not attached to your responses. Responses will be stored in a locked filing cabinet accessible only the researchers. It can be viewed only by authorized research staff members. No names will be recorded other than the consent forms.

**Voluntary Participation:** Participation in this study is absolutely voluntary. You have the option not to respond to any of the questions. You are free to stop any time during the study and you will not be treated differently if you decide to stop taking part in the research. Whether you participate or do not participate in this research, this does not positively or negatively affect your relationship with Minnesota State University, Mankato. If you have questions about the treatment of human participants and Minnesota State University, Mankato, contact the IRB Administrator, Dr. Barry Ries, at 507-389-2321 or barry.ries@mnsu.edu.

**Initials:** _____

**Questions:** If you have any questions please feel free to contact the researchers at Minnesota State University, Mankato by calling (507) 389-5938.

**Statement of Consent:** I have read the above information and have received answers to any questions I asked. I consent to take part in the study.

Submitting the completed survey will indicate your informed consent to participate and attest that you are at least 18 years of age.

**Name (Print):**
**_____**

**Signature: _____**

**Contact Information:**
**Judith K. Luebke, PhD, MCHES**
**Department of Health Science**
**Minnesota State University, Mankato**
**Email: judith.luebke@mnsu.edu**
**Phone: 507-389-5938**

The researchers will keep this consent form for a minimum of three years beyond the end of the study. You may request a copy of this form for your records.

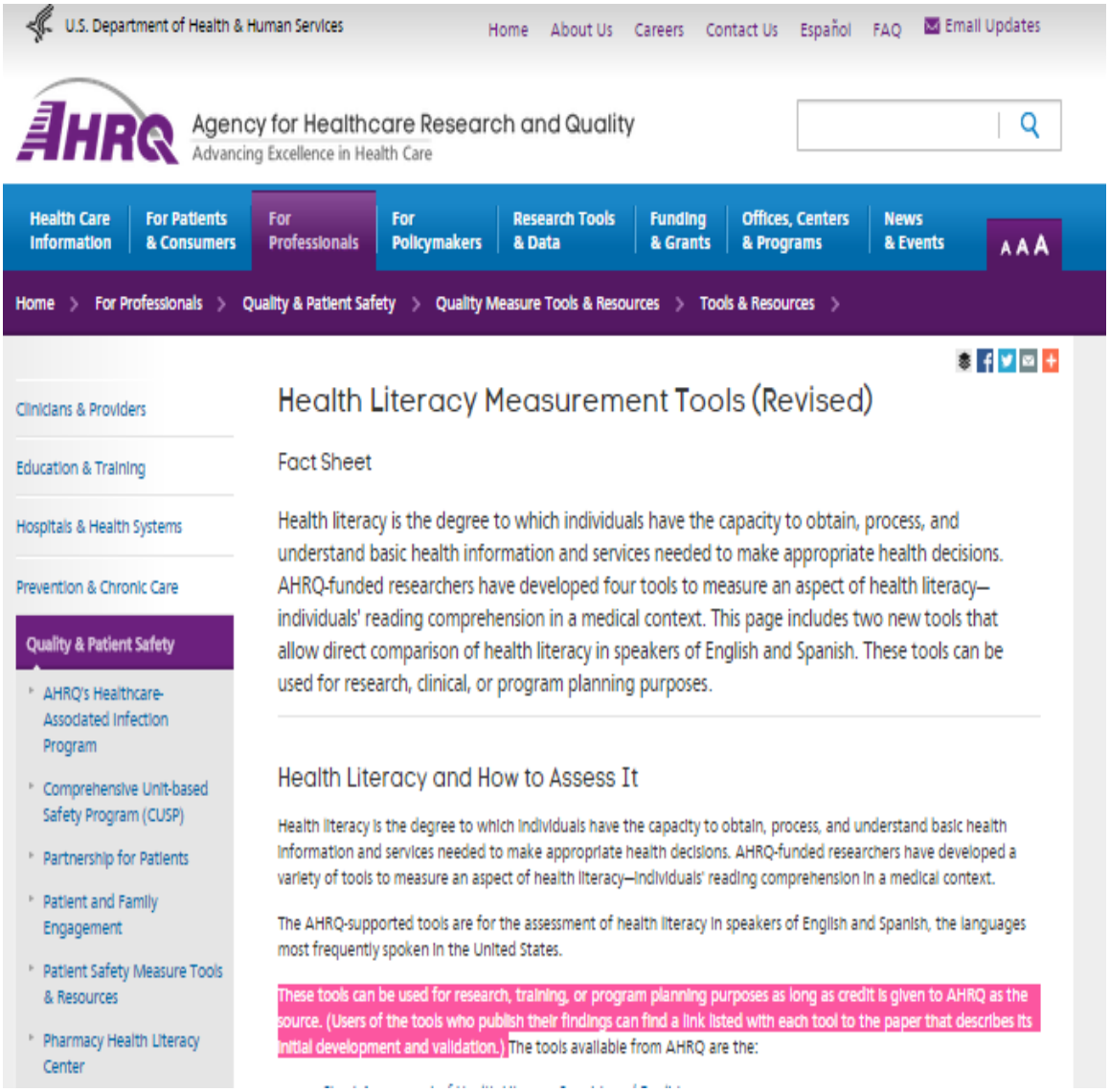
Thank you, for your response and participation.

MSU IRBNet ID#734586

Date of MSU IRB approval: March 23, 2014

# Appendix E

## Short Assessment of Health Literacy-English Screening Tool



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Clinicians & Providers

Education & Training

Hospitals & Health Systems

Prevention & Chronic Care

Quality & Patient Safety

- AHRQ's Healthcare-Associated Infection Program
- Comprehensive Unit-based Safety Program (CUSP)
- Partnership for Patients
- Patient and Family Engagement
- Patient Safety Measure Tools & Resources
- Pharmacy Health Literacy Center

# Health Literacy Measurement Tools (Revised)

Fact Sheet

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. AHRQ-funded researchers have developed four tools to measure an aspect of health literacy—individuals' reading comprehension in a medical context. This page includes two new tools that allow direct comparison of health literacy in speakers of English and Spanish. These tools can be used for research, clinical, or program planning purposes.

## Health Literacy and How to Assess It

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. AHRQ-funded researchers have developed a variety of tools to measure an aspect of health literacy—individuals' reading comprehension in a medical context.

The AHRQ-supported tools are for the assessment of health literacy in speakers of English and Spanish, the languages most frequently spoken in the United States.

These tools can be used for research, training, or program planning purposes as long as credit is given to AHRQ as the source. (Users of the tools who publish their findings can find a link listed with each tool to the paper that describes its initial development and validation.) The tools available from AHRQ are the:

## Instruction for Administering SAHL-E

*SHORT ASSESSMENT OF HEALTH LITERACY-ENGLISH (SAHL-E)*
Interviewer's Instruction

The Short Assessment of Health Literacy-English, or SAHL-E, contains 18 test items designed to assess an English-speaking adult's ability to read and understand common medical terms. The test could help health professionals estimate the adult's health literacy level. Administration of the test could facilitated by using laminated 4"×5" flash cards, with each card containing a medical term printed in boldface on the top and the two association words—i.e., the key and the distracter—at the bottom.

**Directions to the Interviewer:**

1 Before the test, the interviewer should say to the examinee: **"I'm going to show you cards with 3 words on them. First, I'd like you to read the top word out loud. Next, I'll read the two words underneath and I'd like you to tell me which of the two words is more similar to or has a closer association with the top word. If you don't know, please say 'I don't know'. Don't guess."**

2. Show the examinee the first card.

3. The interviewer should say to the examinee: **"Now, please, read the top word out loud."**

4. The interviewer should have a clipboard with a score sheet to record the examinee's answers. The clipboard should be held such that the examinee cannot see or be distracted by the scoring procedure.

5. The interviewer will then read the key and distracter (the two words at the bottom of the card) and then say: **"Which of the two words is most similar to the top word? If you don't know the answer, please say 'I don't know'."**

6. The interviewer may repeat the instructions so that the examinee feels comfortable with the procedure.

7. Continue the test with the rest of the cards. 8. A correct answer for each test item is determined by both correct pronunciation and accurate association. Each correct answer gets one point. Once the test is completed, the interviewer should tally the total points to generate the SAHL-E score.

9. A score between 0 and 14 suggests the examinee has low health literacy.

**The 18 items of SAHL-E, ordered according to item difficulty (keys and distracters are listed in the same random order as in the field interview)**

| **Stem** | Key or Distracter | | |
|---|---|---|---|
| **1. kidney** | **__urine** | **__fever** | **__don't know** |
| **2. occupation** | **__work** | **__education** | **__don't know** |
| **3. medication** | **__instrument** | **__treatment** | **__don't know** |
| **4. nutrition** | **__healthy** | **__soda** | **__don't know** |
| **5. miscarriage** | **__loss** | **__marriage** | **__don't know** |
| **6. infection** | **__plant** | **__virus** | **__don't know** |
| **7. alcoholism** | **__addiction** | **__recreation** | **__don't know** |
| **8. pregnancy** | **__birth** | **__childhood** | **__don't know** |
| **9. seizure** | **__dizzy** | **__calm** | **__don't know** |
| **10. dose** | **__sleep** | **__amount** | **__don't know** |
| **11. hormones** | **__growth** | **__harmony** | **__don't know** |
| **12. abnormal** | **__different** | **__similar** | **__don't know** |
| **13. directed** | **__instruction** | **__decision** | **__don't know** |
| **14. nerves** | **__bored** | **__anxiety** | **__don't know** |
| **15. constipation** | **__blocked** | **__loose** | **__don't know** |
| **16. diagnosis** | **__evaluation** | **__recovery** | **__don't know** |
| **17. hemorrhoids** | **__veins** | **__heart** | **__don't know** |
| **18. syphilis** | **__contraception** | **__condom** | **__don't know** |

**SAHL-E keys**

**Correct answers are marked with an "X"**

| **Stem** | Key or Distracter | | |
|---|---|---|---|
| **1. kidney** | **_X_urine** | **__fever** | **__don't know** |
| **2. occupation** | **_ X _work** | **__education** | **__don't know** |
| **3. medication** | **__instrument** | **_ X _treatment** | **__don't know** |
| **4. nutrition** | **_ X _healthy** | **__soda** | **__don't know** |
| **5. miscarriage** | **_ X _loss** | **__marriage** | **__don't know** |
| **6. infection** | **__plant** | **_ X _virus** | **__don't know** |
| **7. alcoholism** | **_ X _addiction** | **__recreation** | **__don't know** |
| **8. pregnancy** | **_ X _birth** | **__childhood** | **__don't know** |
| **9. seizure** | **_ X _dizzy** | **__calm** | **__don't know** |
| **10. dose** | **__sleep** | **_ X _amount** | **__don't know** |
| **11. hormones** | **_ X _growth** | **__harmony** | **__don't know** |
| **12. abnormal** | **_ X _different** | **__similar** | **__don't know** |
| **13. directed** | **_ X _instruction** | **__decision** | **__don't know** |
| **14. nerves** | **__bored** | **_ X _anxiety** | **__don't know** |
| **15. constipation** | **_ X _blocked** | **__loose** | **__don't know** |
| **16. diagnosis** | **_ X _evaluation** | **__recovery** | **__don't know** |
| **17. hemorrhoids** | **_ X _veins** | **__heart** | **__don't know** |
| **18. syphilis** | **__contraception** | **_ X _condom** | **__don't know** |

# Appendix F

## Sources of Health Information and Barriers to Health Literacy

# Sources of Health Information and Barriers to Health Literacy

Thank you for participating in the Health Literacy Research. The purpose of the research is to find out what we can do to make health information easier to understand and how to make it easier to get the information people need.

---

**Part 1: Demographics**

| | | |
|---|---|---|
| 1. Age (write your age in years here): | _____ | |
| 2. Gender: | ☐ Female ☐ Male | |
| 3. Education level: | ☐ Never attended school<br>☐ Some high school<br>☐ High school/GED<br>☐ Some college/technical/vocational<br>☐ Completed Bachelor's degree or higher<br>☐ Do not want to answer | |
| 4. Income (annual household): | ☐ Less than $10,000<br>☐ $10,000 - $19,000<br>☐ $20,000 - $39,000 | ☐ $40,000 - $59,000<br>☐ More than $60,000<br>☐ Do not want to answer |

**Part 2: Sources of Health Information**

These questions are about the sources of health information you have used in the past to learn about health and wellness, and when you needed to treat an illness.

*Please read each question and choose your responses from the list (on the right column.)*

1. In the past, whether I was healthy or feeling ill, I used these two sources to learn about general health and wellness.

   *What was the first source you used?*

   Write your answer here.

   *What was the second source you used?*

   Write your answer here.

2. During times of illness, I learned how to get back to good health by using these resources:

   *What was the first source you used?*

   Write your answer here.

   *What was the second source you used?*

   Write your answer here.

3. When I wanted to learn about what I could do to prevent illness (preventative care,) I used these sources:

   *What was the first source you used?*

   Write your answer here.

   *What was the second source you used?*

   Write your answer here.

**Health Information Sources**

**Family/Friends** (Choose from Below)

- Mom/Step mom
- Dad/Step dad
- Sister/Step sister
- Brother/Step brother

**Medical** (Choose from Below)

- Doctors
- Nurses
- Clinics
- Community Health Centers

**Media** (Choose from Below)

- Internet
- Radio
- Newspapers
- Books
- Pamphlets/Brochures
- Bulletins

**Others** (Choose from Below)

- Shamans
- Health Fairs
- Hmong American Partnership
- Home remedies
- Workplace

**Part 3: Perceived Barriers to Achieving Health Literacy**

Health Literacy – "the degree to which an individual has the capacity to obtain, communicate, process, and understand health information and services in order to make appropriate health decisions" (Broderick, 2014, p. 2).

These questions are about the reason why you did not get the health information you were looking for.

*Please read each question and choose your responses from the list (on the right column.)*

4. When searching for health information, it was hard for me to understand the health information because of these reasons:

   *What was your main reason?*

   Write your answer here.

   *What was another reason?*

   Write your answer here

5. When talking with my health care provider, it was hard for me to understand him/her because of these reasons:

   *What was your main reason?*

   Write your answer here

   *What was another reason?*

   Write your answer here

**Barriers to Health Information Resources**

**Skills** (Choose from Below)
- Reading level
- Language barriers
- Education level
- Health knowledge

**Medical System** (Choose from Below)
- Medical terms
- Difficult medical forms
- Navigating health care system
- Poor communication from health care providers

**Resources** (Choose from Below)
- No access to Internet
- No access to electronic devices (computers, tablets, cell phone, etc.)
- No access to transportation
- No access to interpretation services
- No availability to materials translated into my language

**Others** (Choose from Below)
- Have limited time
- Have money issues
- Clinic location is too far

6. When I received health information materials (website, mail, letters, brochure, etc.) from health providers, it was hard for me to understand the materials because of these reasons:

*What was your main reason?*

Write your answer here

*What was another reason?*

Write your answer here

*Thank you for participating in this survey!*