



Overcoming language barriers in healthcare : a bilingual assessment tool
by David C Boharski

A professional project submitted in partial fulfillment of the requirements for the degree of Master of Nursing
Montana State University
© Copyright by David C Boharski (2004)

Abstract:

If non-English (Spanish) speaking patients present for care to a rural clinic where the only healthcare providers available do not speak the patient's language, the potential exists for substandard care and healthcare errors. Providers in rural clinics should have available to them an effective and reliable tool to be used for translating a non-English speaking patient's health history into English.

The purpose of this research was to develop a tool which will translate a Spanish speaking patient's health history into English. Following a thorough review of existing literature on health history assessment, language barriers in healthcare, translation theory, and assessment tools, a two-part carbonless checkbox format health history assessment form was developed.

It was found throughout the duration of this project, that certain limitations exist when attempting to bridge the language barrier. No one tool, with the exception of a provider who is fluent in the patient's language, can entirely solve the problem of language barriers in healthcare. Further study is needed to hasten the development of additional adjuncts to aid in the provision of care to non-English speaking patients.

These further studies and tools will be an invaluable resource to the healthcare industry within the United States.

OVERCOMING LANGUAGE BARRIERS IN HEALTHCARE:
A BILINGUAL ASSESSMENT TOOL

by

David C. Boharski

A professional project submitted in partial fulfillment
of the requirements for the degree

of

Master of Nursing

MONTANA STATE UNIVERSITY
Bozeman, Montana

May 2004

N378
B6348

APPROVAL

of a professional project submitted by

David C. Boharski

This professional project has been read by each member of the professional project committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style and consistency, and is ready for submission to the College of Graduate Studies.

Teresa K. Henry, MS, RNCS, ANP
Committee Chair

Teresa K. Henry 5-21-04
(Signature) Date

Approved for the College of Nursing

Jean Ballantyne, PhD, RN
Interim Dean

Jean Ballantyne 6-1-04
(Signature) Date

Approved for the College of Graduate Studies

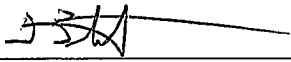
Bruce McLeod, PhD
Graduate Dean

Bruce R. McLeod 6-4-04
(Signature) Date

STATEMENT OF PERMISSION TO USE

In presenting this paper in partial fulfillment of the requirements for a Master's degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library.

If I have indicated my intention to copyright the paper by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this paper in whole or in parts may be granted only by the copyright holder.

Signature 

Date 5/21/04

TABLE OF CONTENTS

1. INTRODUCTION.....	1
Statement of Problem.....	3
Statement of Purpose.....	4
2. REVIEW OF LITERATURE.....	6
Health History Assessment.....	6
Language Barriers in Healthcare.....	7
Translation Theory.....	12
Translation Tools.....	14
3. METHODOLOGY.....	16
4. RESULTS.....	20
Limitations.....	21
Implications for Further Study.....	23
5. REFERENCES CITED.....	24
APPENDICES.....	27
APPENDIX A: Bilingual Health History Assessment Tool.....	28
APPENDIX B: Spanish Version of Assessment Tool.....	38
APPENDIX C: English Version of Assessment Tool.....	40

LIST OF FIGURES

Figure	Page
1. Languages Spoken at Home for the Population 5 Years and Over.....	2
2. Brislin's Translation Model.....	13
3. Adaptation of Brislin's Translation Model.....	13
4. Modified Version of the Adaptation of Brislin's Translation Model.....	17

ABSTRACT

If non-English (Spanish) speaking patients present for care to a rural clinic where the only healthcare providers available do not speak the patient's language, the potential exists for substandard care and healthcare errors. Providers in rural clinics should have available to them an effective and reliable tool to be used for translating a non-English speaking patient's health history into English.

The purpose of this research was to develop a tool which will translate a Spanish speaking patient's health history into English. Following a thorough review of existing literature on health history assessment, language barriers in healthcare, translation theory, and assessment tools, a two-part carbonless checkbox format health history assessment form was developed.

It was found throughout the duration of this project, that certain limitations exist when attempting to bridge the language barrier. No one tool, with the exception of a provider who is fluent in the patient's language, can entirely solve the problem of language barriers in healthcare. Further study is needed to hasten the development of additional adjuncts to aid in the provision of care to non-English speaking patients. These further studies and tools will be an invaluable resource to the healthcare industry within the United States.

CHAPTER 1

INTRODUCTION

For a healthcare provider, obtaining a health history from a patient who speaks a different language is a difficult task, particularly in the absence of a translator or a provider who is fluent in the patient's language. This language barrier can be the cause of substandard care and inadvertent mistakes in the provision of care. In order to provide care to individuals who speak a different language than their provider, it is necessary to bridge this language barrier in some fashion.

Compromised patient care due to a language barrier has been witnessed by this author in many different arenas, ranging from military medical operations in Central America to inner-city Emergency Departments to rural migrant health clinics. It is a difficult issue to tackle, and at times a political one. Our society is increasingly becoming an amalgam comprised of many different cultures and many different languages, yet all of these individuals expect and deserve the same standard of care provided to English speaking patients. How best to accomplish this has become a topic of debate. Requiring all individuals within the United States to be fluent in our official language of English would alleviate the problem. This is, however, unrealistic. The project before us then, is to devise a method, or a group of methods, to reduce or eliminate errors made in the provision of health care due to miscommunications in translation.

According to the United States (U.S.) Census Bureau (2000), Spanish is the second most commonly spoken language within the United States. The Census Bureau reports a total U.S. population of just over 262 million. Of this number, just over 215 million speak only English. Of the remaining 47 million people within the U.S., just over 28 million individuals speak Spanish (see Figure 1). Given that the end goal of this project is to improve care provided to Spanish as a primary language migrant workers specifically, by facilitating translation during healthcare encounters, Spanish - English translation will be the focus of this project.

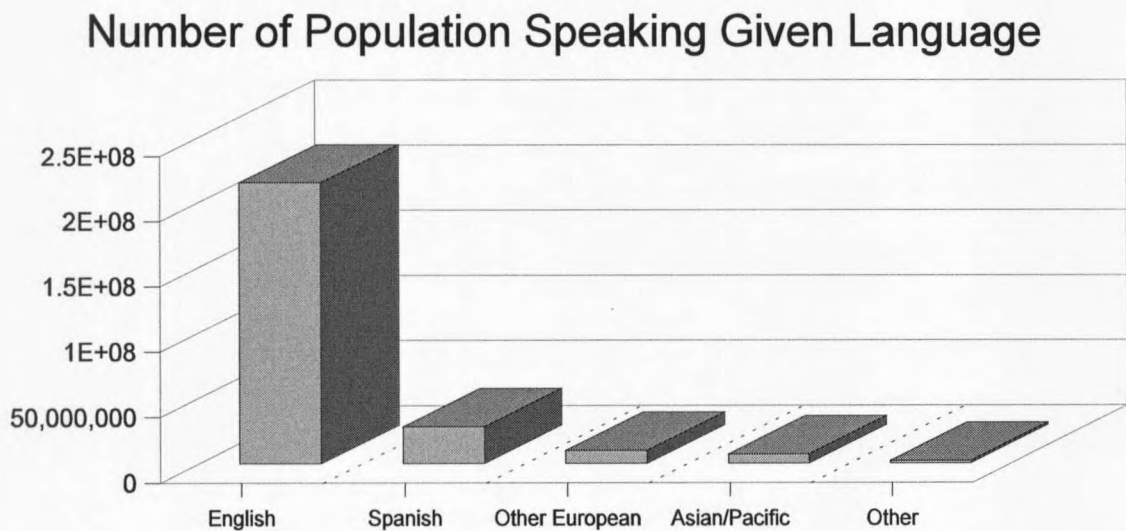


Figure 1. Languages Spoken at Home for the Population 5 Years and Over (United States Census Bureau , 2000).

Statement of Problem

A study recently completed by the Medical College of Wisconsin in Milwaukee showed that errors in medical interpretation are common (Flores, et al., 2003). In this study, the authors discovered a total of 396 interpreter errors in 13 patient encounters, or an average of 31 per patient encounter. This study further concluded that when utilizing either professional or ad hoc interpreters, errors of omission were the most common type of error.

A qualitative study performed by Thompson, Silver & Waitzkin (2001) at a university-affiliated primary care clinic in southern California reviewed encounters between bilingual nurses and 21 Spanish-speaking patients. In this study the authors showed that approximately one-half of the encounters had serious miscommunication problems. These problems were categorized into those that affected the credibility of the patient's concerns, or those which affected the provider's understanding of the symptoms. In either case, care was shown to be compromised. The authors concluded that interpretive errors occurred frequently even with the use of bilingual nurses as interpreters.

While these are only two studies, with rather small sample sizes, it can be deduced that by utilizing a comprehensive self-translating health history form, filled out by the patients themselves, providers could alleviate some of the need for an interpreter. Individual facilities as well as providers could then play an active role in reducing the number of medical interpretation errors, thereby improving the quality of care provided

to non-English speaking patients.

Timmins (2002) described a meta-analysis of studies published over a ten year period of time, ending in the year 2000. The aforementioned studies examined language barriers for Latino patients and found that 86% of the studies evaluating quality of care found a “significant detrimental effect of language barriers” (p. 80). The conclusion of the Timmins (2002) meta-analysis was that health care providers were “recommended to devise an effective strategy to bridge language barriers in their setting” (p.80).

Tools such as phrase books in foreign languages are available for the provider, as are translators, on a limited basis. However, in many rural areas, these tools are either unavailable or ineffective. In order to meet existing standards of care for culturally and linguistically appropriate healthcare services, particularly those developed by the United States Department of Health and Human Services (2001), a more available and effective tool must be devised.

Statement of Purpose

The purpose of this professional project is to develop a bilingual health assessment tool to facilitate health history taking from Spanish speaking patients and to reduce the potential for translation errors encountered with the use of interpreters and other methods of translation. Certainly it would be futile to attempt to include all information regarding a person’s health onto one form. However, the available data supports the premise that by including pertinent history items critical to a patient’s immediate health care needs in an

urgent care setting, the care provided to non-English speaking patients can be vastly improved, and the likelihood of translation errors reduced.

The objectives for this project were to (a) educate providers on the need for effective bilingual health assessment tools, (b) create a tool to facilitate medical history taking among Spanish speaking patients, and (c) improve the healthcare provided to Spanish speaking rural residents. The third objective, to improve the healthcare provided to Spanish speaking rural residents, is also considered to be a long-term goal of this project.

This professional project will be conducted in several steps. First, a careful literature review will be conducted to examine relevant issues in bilingual assessment. Second, information will be obtained through additional review of literature as well as interviews with current providers who care for Spanish speaking patients regarding the most appropriate information to be included in a comprehensive health history for an rural urgent care setting. Third, the information gleaned above will be utilized to create a two-part carbonless checkbox format health history form which will translate a non-English (Spanish) speaking patient's health history into English. This form will be created using a modified version of the Adaptation of Brislin's Translation Model as outlined in Chapter 3.

CHAPTER 2

REVIEW OF LITERATURE

The following chapter contains an overview of the literature on the subjects pertinent to this project. The concepts of health history assessment, language as a barrier to health care, translation theory, and assessment tools, will be presented. In an effort to focus this literature review on the task at hand, creating a bilingual health history assessment tool, these areas are considered to be the most prudent to review with respect to this project.

Several different methods were employed in order to compile the following review. The Google, PubMed, and CINAHL search engines were used, as was the Montana State University - Bozeman's Renne Library Periodical Indexes and Database web page.

Health History Assessment

"The history and physical examination begin and are at the heart of the diagnostic and treatment process" (Seidel, Ball, Daines & Benedict, 1999, p. 1). Given this, it is only logical to assume that one cannot adequately, or safely, proceed to the diagnosis and treatment processes without first obtaining a quality subjective health history and coupling it with a thorough objective physical examination. While both are necessary, the focus of this project is on the former.

Jarvis (1992), states that “the health history is a screening tool for abnormal symptoms, health problems, and concerns, and it records ways of responding to the health problems” (p.78). According to Jarvis, the complete health history should contain information regarding biographical data, reasons for seeking care or chief complaint, history of the present illness, past medical history, review of systems, and functional assessment of activities of daily living. Multiple sources, including Seidel et al. (1999) and Burns, Brady, Dunn & Starr (2000), agree with Jarvis regarding the necessary components of a complete health history. Most sources, including those listed, do not include the functional assessment of activities of daily living and it will, therefore, not be addressed. Furthermore, Burns et al. suggest that “The classic medical history is written to expand on the chief complaint” (p. 20). This problem oriented approach to history taking allows the provider to focus his or her questions on a specific complaint rather than taking a shotgun approach and hoping to derive a diagnosis from a large amount of information. Provided one can have an open dialogue with the patient, it is easy to see the efficacy of the problem oriented approach. However, this approach presents a problem when open dialogue is not possible, as is the case when language barriers are present.

Language Barriers in Health Care

Title VI, Section 101 of the Civil Rights Act of 1964 reads “No person shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving

Federal financial assistance” (88th Congress, n.d.). Although this federal mandate has been in place for four decades, language barriers in health care still exist.

Language barriers present a difficult problem to overcome when attempting to deliver healthcare to non-English speaking patients. While the United States is a cultural melting pot, the healthcare system within this country is overwhelmingly ethnocentric, specifically oriented towards the English language (Timmins, 2002). Given this fact, it is not difficult to assume that individuals with little or no ability to speak the English language face a very real barrier in accessing healthcare. Additionally, providers who do not speak the language of their patients face the very same barrier. This can be a challenging situation for provider as well as patient. Calderon & Beltran (2004) state that “Linguistic and language barriers are arguably among the most important barriers influencing access to care, access within a healthcare delivery system, quality of care, patient compliance, self-efficacy, and health outcomes especially” (p.3). One of the goals of this project is to improve the quality of care and health outcomes of non-English speaking patients. As such, it is important to understand how the quality of care and health outcomes are affected by the language barrier. Timmons (2002) found, in a review of studies published between 1990 and 2000, that six out of the seven studies (86%) found a significant detrimental effect of language barriers on quality of care, and that two out of three studies (67%) found language to be a risk factor for poor outcomes.

Of the seven studies addressing quality of care outlined by Timmons (2002), three, David & Rhee (1998), Seijo, Gomez, & Friedenber (1995), and Rosen, Sanford, & Scott (1991), examined quality of care in terms of the patient’s understanding of the

encounter and patient satisfaction. David & Rhee (1998), found that out of 68 cases (non-English speaking) and 193 controls (English speaking), 47% of cases vs. 16% of controls responded that side effects of medication were not explained to them.

Additionally, 93% of controls vs. 84% of cases reported satisfaction with the care they received. Seijo et al. (1995) found in an observational study involving 51 Hispanic patients that of the patients seen by a Spanish speaking physician (24), 73% had good recall of the information provided by the physician as opposed to 54% of the patients seen by the English speaking physician (27). In addition, they found that patients seen by a Spanish speaking physician asked significantly more questions regarding their care, thus reinforcing information provided. Rosen et al. (1991) interviewed 258 Emergency Departments nationwide in a study to determine patient satisfaction with the use of interpreters when Spanish speaking staff was not available. They, Rosen et al, studied 43 Spanish speaking only Hispanic cases and 33 English speaking only controls and found following a telephone survey that 12% of the cases vs. 0% of controls reported dissatisfaction with the quality of their care.

Three, Stein & Fox (1990), Solis, Marks, Garcia, & Shelton (1990), and Sherraden & Barrera (1996), of the remaining four studies related to quality of care examined quality of care in terms of the use of preventative services. Stein & Fox (1990) randomly selected 70 English speaking (controls) and 80 Spanish speaking (cases) women greater than age 35 to determine whether they had ever had a mammogram. They found that 47.1% of controls vs. 13.8% of cases reported having had a mammogram in the past. Solis et al. (1990) analyzed data retrieved from HHANES (Hispanic Health and Nutrition

Examination Survey) which was compiled from Mexican-Americans, Cuban-Americans, and Puerto Ricans aged 20-74. Not only did they find that language was associated with the recency of breast examinations, but they also found that language was an important predictor of health care use within this population. Sherraden & Barrera (1996) studied 41 Mexican immigrant women in Chicago. Twenty-two of these women had low birth weight babies and 19 had normal birth weight babies. They found that 44% of the women studied reported that language barriers negatively impacted their prenatal care, and these women who felt that they received less than adequate care were more likely to deliver a low birth weight baby.

The one remaining study, Enguinados & Rosen (1997), surveyed 24 English speaking Latinos and 24 Spanish speaking Latinos regarding their satisfaction with the care they received. They found that there was no significant difference between the two groups of patients with regard to patient satisfaction.

Two out of the three studies reviewed by Timmins (2002) regarding health outcomes, Kirkman-Liff & Mondragon (1991) and Perez-Stable, Napoles-Springer, & Miramontes (1997), determined that there was a causal relationship between health outcomes and language barriers. Although the third study, Flores, Abreu, Olivar, & Kastner (1998), was unable to find a direct link between language and poor outcomes, it did determine that being non-English speaking was associated with poor outcomes. Kirkman-Liff & Mondragon (1991) in a study of 3104 randomly selected Hispanic adults greater than 17 years of age and 1113 Hispanic adults who provided information on Hispanic children 16 years of age and younger, found that while they were unable to

control such variables as socioeconomic status and education levels, Spanish speaking adults and children had a lower health status than their English speaking counterparts. Perez-Stable et al. (1997), designed a cross-sectional survey using a stratified random sample of 110 Latinos and 126 non-Latinos. Thirty-four percent of the Latinos were English speaking and 66% were Spanish speaking. It was found in this study that language concordance between the patient and his/her physician was associated with improved health status and improved health outcomes. While the Flores, et al (1998) study was unable to find a direct effect of language on health outcomes, they were able to determine, after surveying inner-city parents, that 8% of the parents surveyed reported poor medical care due to providers not speaking Spanish, 6% reported that their children had been misdiagnosed, and 5% reported that inappropriate drugs had been prescribed.

Following a review of these ten studies, the inability to speak the English language can best be defined as being a barrier to healthcare. The quality of care provided to and received by non-English speaking patients and the health outcomes of those same patients are affected by whether or not there is a concordance of language between patient and provider. Danar (2002) agrees with this assessment by stating "Language barriers . . . play important parts in contributing to disparities in healthcare"(p.1), as do Barner, Brown, Shepherd, Chou, & Ying (2002) when they state, "Language barriers, particularly in community health centers and migrant health centers, could impede the exchange of information, which is essential to understanding and solving health problems . . ."(p.6).

Translation Theory

Translation between languages has been problematic since the awareness of the need for translation. Evidence of the problems encountered span from the first attempts to translate the bible, through this current project. Darwish (2000) states that “The primary objective of the translation process is not to achieve absolute equivalence, but to achieve optimal approximation between the source and target versions of text in terms of utility and appeal.” (p.1). It could be argued that optimal approximation is absolute equivalence. However, this may or may not be possible. With this in mind, a review of literature regarding translation theory and methodology was undertaken. It was determined that many authors have penned many works on the theory and methods of translating a source language (SL) into a target language (TL), and all appear to have the same focus. This focus is best outlined by Brislin’s (1970, 1986) model.

In Brislin’s model, shown in Figure 2, one bilingual expert translates from the SL to the TL. A second bilingual expert then blindly (without knowledge of the original SL version) back-translates from TL to SL. If any errors in meaning are found between the back-translated version and the original version, those errors are then re-translated and again blindly back-translated by another bilingual expert. This process is repeated until no errors are found.

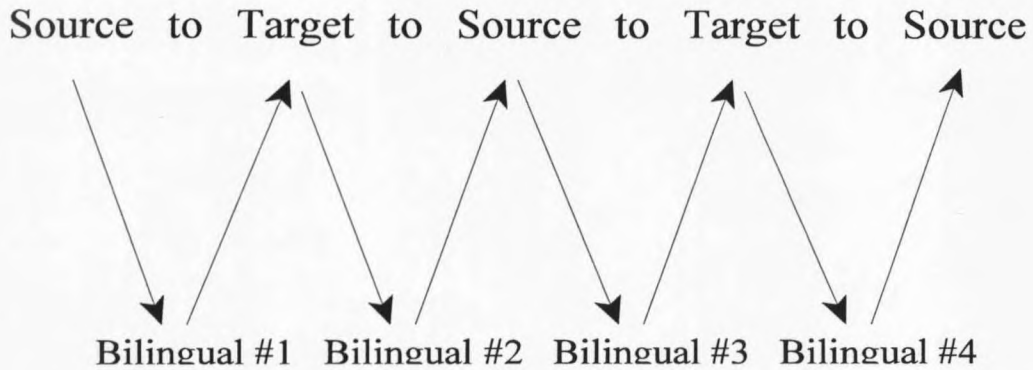


Figure 2. Brislin's Translation Model (Jones, Lee, Phillips, Zhang, & Jaceldo, 2001).

Jones et al. (2001), in discussing the theory and methodology of Brislin, acknowledge that while this method is well-known for preparing valid and reliable translations, they state that this method may not be as efficient or accurate as necessary particularly in languages with multiple dialects. In an attempt to solve this dilemma, Jones et al. (2001), proposed an adaptation, or revision, of Brislin's Translation Model (see Figure 3). The steps in this adaptation are outlined below.

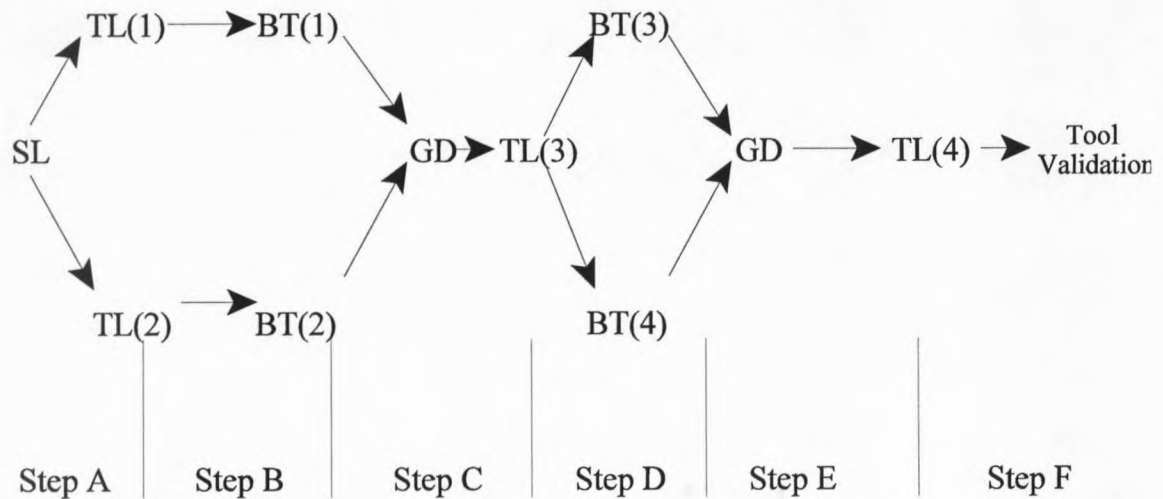


Figure 3. Adaptation of Brislin's Translation Model (Jones et al., 2001). SL = Source

Language; TL(1)=First Translation; BT(1)=First back-translation; GD=Group discussion.

Step A in the Jones et al. (2001) model involves translation of the source language into the target language. This is done by two independent bilingual experts. In Step B, each initial translation is blindly back-translated to the source language by two new bilingual experts. In Step C, the four experts meet with the project author to review the back-translations and discuss any differences. If any differences are found, the target language is then adapted to reflect the most accurate meaning. In Step D, two new bilingual experts are employed to back-translate the revised version, and a second meeting of the bilingual experts takes place to review the new back-translation in Step E. Step F occurs when, through testing for reliability and equivalence using a sample of bilingual subjects, the tool is determined to be valid.

Translation Tools

Downing, Hinojosa, Molina, & Gilbert (2003) state “Given the difficulties of material development for most organizations, more could certainly be done to improve the availability and quality of traditional translations”(p. 2). The crux of the purpose for this project lies in the previous quote. However, to do more one must first define more. This is done by examining current translation standards and tools.

In keeping with Standard 6 of the recommended standards for culturally and linguistically appropriate healthcare services, developed by the United States Department of Health and Human Services’ Office of Minority Health which states “Provide all clients with limited English proficiency (LEP) access to bilingual staff or interpretation

services.” (2001, p.1), healthcare organizations have employed many different methods of translation. These methods include hiring only bilingual medical and nursing staff, the use of trained and untrained (bystanders and family members) interpreters, telephonic interpretation services, bilingual phrase books, handheld computer programs, computer based software, and web based translation services.

The above methods have certain advantages and disadvantages with regard to medical translation. The primary disadvantage of all of the above methods, with the exception of the hiring of bilingual medical and nursing staff, which is the gold standard in interpretive needs, is that there are no methods of identifying and overcoming errors in translation in a timely manner so as not to effect the outcome of the care provided. The advantages of the above methods are that, in simple terms, they are better than no method at all. The development of a bilingual tool to be used by providers who are not bilingual, and that employs the Adaptation of Brislin’s Translation Model, appears to fall somewhere in between the gold standard and the currently remaining options. This development will be outlined in the following chapter on methodology.

CHAPTER 3

METHODOLOGY

The purpose of this professional project was to create a comprehensive self-translating health history assessment tool to assist in the health assessments of Spanish speaking patients. This tool was designed to reduce healthcare translation errors. In rural areas such as migrant health clinics, providers see and treat many patients who do not speak the English language and at times assistance with translation, in the form of phrase books or medically trained translators, is either unavailable or ineffective. This lack of assistance makes it difficult if not impossible to obtain a health history from a Spanish speaking patient.

Concern could be expressed regarding targeting those individuals who are illiterate. While this is a genuine concern of this author, the translation form that is being developed is not intended to solve all of the translation problems/barriers within the healthcare field. It is, rather, designed to be but one tool to assist healthcare providers in overcoming the language barrier.

A review of the literature was performed in the areas of health history assessment, language barriers in healthcare, translation theory, and translation tools. Through this review, it was found that there is a paucity of effective translation tools. The Adaptation of Brislin's Translation Model, outlined and described by Jones et al. (2001) was referred to in multiple references throughout the review. For this reason, a modified version of

this model was chosen as the method of choice in creating this tool. Figure 4 outlines the modified version of the Adaptation of Brislin's Translation Model. The model was modified due to time constraints encountered by this author. Although modified, the overall integrity of the model remains. This is accomplished through the use of objective, educated, and medically trained bilingual individuals, as well as a nonmedically trained bilingual individual familiar with the issues and concerns of local migrant workers. None of the above translators will collaborate in any fashion in the initial translation or back-translation.

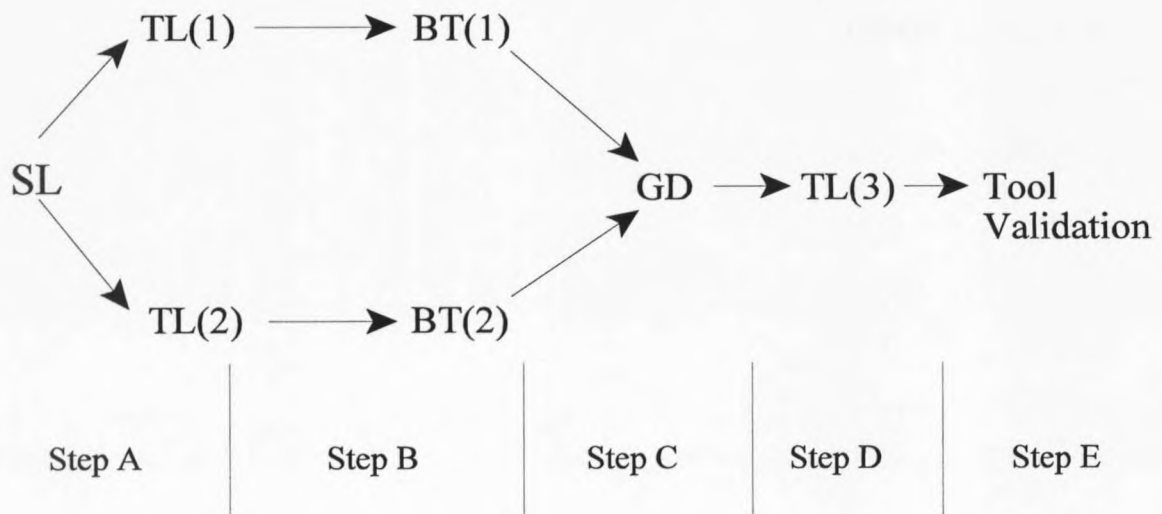


Figure 4. Modified version of the Adaptation of Brislin's Translation Model.

The steps outlined in Chapter 2 with the description of the Adaptation of Brislin's Model are nearly identical to this modified version of the model. The only exceptions are the elimination of back-translations three and four, a second group discussion, and the final translation (four).

Five individual translators will be used in the utilization of this model. One of the first two translators (TL(1)) who will translate the English version of the form into Spanish, is a physician who is fluent in Spanish and has worked providing healthcare in Mexico and Central America. The other (TL(2)), is a college level Spanish instructor who has worked as a translator for migrant health clinics for fourteen years. Back-translator one and two, are a graduating senior baccalaureate nursing student who is fluent in Spanish and has provided nursing care in Central America, and a medical student who is fluent in Spanish and has volunteered at medical clinics in Central America and Mexico, respectively.

A group discussion will be held following completion of the back-translations. The purpose of this dialogue will be to discuss any differences found between the original (English) version, and the back-translated English version. If differences are found, the target language (Spanish) will be adapted to reflect the most accurate meaning.

Following this adaptation, a fifth translator will review the English and Spanish versions of the form. This individual, who is a native Mexican, fluent in Spanish and English, will make recommendations for changes, if any exist, and these will be incorporated into the final validated version of the form.

Items on the source language English version of the form will include biographical data, chief complaint, past medical history, review of systems, medication usage, and allergies. These items were chosen based on information gleaned through review of existing literature. The information is supported by this author's own

experience providing urgent and emergent care. The items will then be placed on one page of paper for the English version, and one page for the Spanish version, with check boxes for “yes”, “no”, and “now” corresponding with each question. The check boxes and corresponding questions will be aligned on the pages using the Pagemaker® software so as to assure that both the boxes and questions are aligned perfectly on both pages. The utilization of the Pagemaker® software will allow for the formal printing process to occur. This process will include placing the forms on carbonless paper.

CHAPTER 4

RESULTS

The result of this project was the creation of a two-part, carbonless self-translating health history form, which translates a non-English speaking patient's health history into English. The form translates specific health history questions from Spanish to English (See Appendices). This form will serve as a tool for healthcare providers to utilize when treating non-English (Spanish) speaking patients and will aid in the reduction of healthcare related errors made due to the Spanish/English language barrier.

Following a review of pertinent literature on the subject, health history questions were chosen to be included on the form. These questions, with the Spanish translations, can be found in Appendix A. A rough draft of the tool was then created using Microsoft® Excel® software.

Following the creation of the rough draft of the tool, a search was undertaken to locate qualified individuals willing to participate in the creation of the Spanish version of this tool. Two of the five translators were acquaintances of this author. Of the remaining three, one was found at the Montana State University - Bozeman's Missoula, Montana campus, one was found at a local community college, and the final translator was found through a friendship with one of the original two translators.

The first two translators were given copies of the tool's rough draft, in English, and asked to translate the individual questions into Spanish to the closest approximation.

These translations, in Spanish, were then given to the two back-translators who were not given any information regarding the original English version. They were asked to back-translate into English to the closest approximation. The translators and back-translators then submitted changes to the target language (Spanish), which they felt would reflect a more accurate meaning in English, to this author who reviewed all of this information for spelling and grammar. None of the above individuals collaborated in any fashion with the translations or back-translations.

A final review of spelling and grammar, as well as the recommendations made, was then performed by this author in the presence of the final translator who confirmed the validity of the translation tool. It was the final translator's belief that optimal approximation between source and target language had been obtained.

A professional typesetter, with a great deal of experience with the Pagemaker® software was then employed to arrange the questions and checkboxes on two separate pages, according to the layout of the rough draft. The product of her work can be viewed in Appendices B and C (reduced in size to 85% of the original).

Limitations

While the end product of this professional project is believed to be an accurate and valid tool, four limitations were identified in the creation of the tool. First, the ability to find qualified interpreters willing to participate in the project in rural northwestern Montana was difficult due to the fact that this geographical location is

overwhelmingly Caucasian.

The second limitation was the fact that this author is not fluent in the Spanish language. The information compiled on the forms, obtained from the work of the translators and back-translators, was reviewed for grammar and spelling through the use of the *Vox Compact Spanish and English Dictionary* (1994). This additional work took a great deal of time which could have been avoided had this author been fluent in the Spanish language.

The third limitation was the inability of this author to organize a formal group discussion among the translators. This limitation was caused by prior commitments made by two of the translators which made them unavailable to participate in a formal group discussion. In lieu of this group discussion, the translators and back-translators were asked to submit any suggested changes to the target language (Spanish), which they felt would reflect a more accurate meaning in English, to this author either in writing or via email. While the lack of a formal group discussion with the four translators and back-translators was a limitation in the completion of this project, the end product was able to be validated by the final translator and optimal approximation between source and target languages was obtained.

Lastly, it was determined that a limitation of this tool is that fact that while it will be useful for those patients who are literate, it's usefulness will be limited in those who are illiterate. However, given that Spanish is phonetically similar to English, and all providers are assumed to be literate, those providers will be able to utilize the tool to ask the patients the health history questions and illicit verbal rather than written responses.

Implications for Further Study

Tools to assist in the translation of foreign languages into the language of the healthcare provider are well needed adjuncts to the provision of quality healthcare to non-English speaking patients who are both literate and illiterate. Projects which address the bridging of the language barriers present in healthcare are definitely needed, and when available, will provide valuable information and invaluable resources to the healthcare industry within the United States. The end result of additional translation tools and projects will be the improvement of healthcare to non-English speaking patients.

REFERENCES CITED

- 88th Congress, (n.d.). *H.R. 7152: Civil rights act of 1964*. Retrieved February 2, 2004, from <http://usinfo.state.gov/usa/infousa/laws/majorlaw/civilr19.htm>
- Baker, D.W., Parker, R.M., Williams, M.V., Coates, W.C., & Pitkin, K. (1996). Use and effectiveness of interpreters in an emergency department. *JAMA, The Journal of the American Medical Association*, 275(10), 783-786.
- Barner, J.C., Brown, C.M., Shepherd, M.D., Chou, J.Y., & Ying, M. (2002). *Provision of pharmacy services in community health centers and migrant health centers*. Retrieved February 2, 2004, from <http://www.medscape.com/viewarticle/450881>
- Brislin, R.W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 187-216.
- Brislin, R.W. (1986). The wording and translation of research instruments. In W.L. Lonner & J.W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137-164). Newbury Park, CA: Sage
- Buchwald, D., Caralis, P.V., Gany, F., Hardt, E.J., Johnson, T.M., Muecke, M.A., et al. (1994). Caring for patients in a multicultural society. *Patient Care*, 28(11), 105-110.
- Burns, C.E., Brady, M.A., Dunn, A.M., & Starr, N.B. (2000). *Pediatric primary care: A handbook for nurse practitioners*. Philadelphia: W.B. Saunders Company.
- Calderon, J.L., & Beltran, R.A. (2004). *Pitfalls in health communication: Healthcare policy, Institution, structure, & process*. Retrieved February 2, 2004, from <http://www.medscape.com/viewarticle/466016>
- Danar, D. (2002). *Family physicians can improve health outcomes of racial, ethnic groups*. Retrieved February 2, 2004 from <http://www.medscape.com/viewarticle/443324>
- Darwish, A. (2000). *Towards a theory of constraints in translation*. Retrieved February 11, 2004, from <http://www.surf.net.au/writescope/translation/constraints.html>
- David, R.A., & Rhee, M. (1998). The impact of language as a barrier to effective healthcare in an underserved hispanic community. *Mount Sinai Journal of Medicine*, 65(6), 393-397.
- Downing, B.T., Hinojosa, M.R., Molina, A., & Gilbert, J. (2003). *Written materials in other languages*. Retrieved November 13, 2003, from http://www.diversityrx.org/BEST/1_5.htm

