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Ensuring Cross-Cultural Equivalence in Translation of Research Consents and Clinical Documents:

A Systematic Process for Translating English to Chinese

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Abstract

The aim of this article is to describe a formal process used to translate research study materials from English into traditional Chinese characters. This process may be useful for translating documents for use by both research participants and clinical patients. A modified Brislin model was used as the systematic translation process. Four bilingual translators were involved, and a Flaherty 3-point scale was used to evaluate the translated documents. The linguistic discrepancies that arise in the process of ensuring cross-cultural congruency or equivalency between the two languages are presented to promote the development of patient-accessible cross-cultural documents.

Keywords

cultural research; methodological research; translation; recruit and retain participants

Purpose

Cross-cultural research is emerging as an important aspect in the nursing research arena. Generalizability of research findings is greatly enhanced when diverse populations are involved in the evaluation of research outcomes. Key to this process is the availability of linguistically equivalent research documents to be used by non-English-speaking patients and their families in research. Yet contextual and semantic errors in translation may distort the original meaning, which limits the recruitment of non-English speakers and the feasibility of obtaining informed consent from these potential research participants (Harkness, Pennell, & Schoua-Glusberg, 2004; McCabe, Morgan, Curley, Begay, & Gohdes, 2005; Yu, Lee, & Woo, 2004). Researchers are encouraged to report methodological issues and experiences associated with the translation process to share insights and recommendations (Kao, Hsu, & Clark, 2004).

In an ongoing study of symptoms of critically ill patients in the Intensive Care Unit (ICU), translated research documents were required to include Mandarin- or Cantonese-speaking patients. The purpose of this report is to describe a formal translational process that we utilized to produce several study documents written in the traditional Chinese language: informed consent and privacy notices, data-collection forms, and the Web site version of the CAM-ICU

(Confusion Assessment Method for Intensive Care Unit) instrument (Ely, Inouye, et al., 2001; <http://www.icudelirium.org/delirium/>).

Background

Our research was conducted in California. This state leads the nation with 12.7 million non-English speakers, more than twice the number reported in any other state (U.S. Census Bureau, 2003). In the San Francisco metropolitan area, the site for this study, Chinese constitute more than 20.6% of the region's population. With the majority of the immigrants from Guangdong province or Hong Kong in the southeastern part of China (King & Locke, 1987), the metropolitan region has the highest rate of Cantonese speakers (1 in every 19.6 residents) and the second highest rate of Mandarin speakers (1 in every 145 residents) in the state (U.S. English Foundation, 2000). In addition, more than 83.2% of the Chinese residents report that they speak a language other than English, 16.8% speak English only, and 48.4% speak English less than "very well" (U.S. Census Bureau, 2006). The preferred spoken language of the Chinese immigrants residing in the Bay Area is the Cantonese dialect (King & Locke, 1987). This practice differs from the People's Republic of China, where Mandarin is the official spoken language and simplified Chinese characters are promoted as the primary writing system. However, the majority of Chinese in the Bay Area still continue to read and write using traditional Chinese characters, not the simplified system. Likewise, some of the local Chinese newspapers (<http://www.singtaousa.com/>, <http://www.mingpao.com/>) are published using the traditional written characters.

Translation Theory

The goal of cross-cultural translation is to achieve equivalence between two different languages. The Brislin model for instrument translation is a well-known method for cross-cultural research (Brislin, 1970; Jones, Lee, Phillips, Zhang, & Jaceldo, 2001). According to this model, a bilingual person translates the instrument from its original language into the target language (forward translation), Chinese in this case. Then another bilingual person back translates the documents from the target language to its original language (backward translation). To ensure the equivalency of the translated documents, the back translation is done by blinding the second translator to the original document. Both versions (the original and the back-translated documents) are then compared for accuracy. Questionable items are identified and again blindly back translated into the original language by another bilingual translator. This process is repeated multiple times until the meaning of the translated document is mutually agreed to be equivalent and unambiguous. This preferred translation processes recommends that at least two independent bilingual translators be used (McDermott & Palchanes, 1994).

The goal of a congruent cross-cultural translation process is to achieve content, semantic, technical, criterion, or conceptual equivalence (Flaherty et al., 1988). Content equivalence implies that each item's content is relevant in each culture while accepting the fact that some constructs cannot be insinuated into instruments for other cultures. Semantic equivalence emphasizes the similarity of meaning for each item in each culture after translation. However, one should note that even with the use of appropriate processes, some differences in semantic meaning may still exist because of regional or national idiomatic differences. Technical equivalence means that the data-collection method is comparable. Criterion equivalence indicates that a translated term is consistent with the norm for each culture. Conceptual equivalence can be referred to as cultural equivalence, defined as having an analogous meaning and relevance of the constructs in the two cultures (Wang, Lee, & Fetzer, 2006).

A five-phased translation process is recommended to improve cultural equivalence during cross-cultural translation: (a) determining the relevance and function of the phenomenon in the

population being studied, (b) forward translation of the instruments, (c) backward translation, (d) testing each item of the translated instruments for equivalence, and (e) reevaluating the process and outcome (Beaton, Bombardier, Guillemin, & Ferraz, 2002; U.S. Census Bureau, 2001; Weeks, Swerissen, & Belfrage, 2007). General guidelines from these translation models were used as a framework for our translation process.

Method

Backgrounds of the Translators

Four Mandarin-speaking bilingual, bicultural Chinese Americans who received graduate-level nursing degrees from the United States participated in the translation process. In addition, two bilingual Chinese-speaking non-health care laypeople assisted with the review of the translated documents to evaluate the documents' content and semantic equivalencies.

Translation Process for the Study Documents

Research enrollment and assessment forms that were translated into traditional Chinese for this patient and family population included patient and family consents, the institution's participant privacy notice, the patient's symptom survey (i.e., a checklist of 10 symptoms), and a delirium assessment tool (CAM-ICU; Ely, Margolin, et al., 2001). An a priori decision was made to translate each document into traditional Chinese characters that could be read by either Mandarin- or Cantonese-speaking Chinese patients or families. A Flaherty's 3-point scale was used by the translators to identify items that were problematic during the translations and, more important, to achieve an agreement on which word should be used in the target language. In this 3-point scale, a score of 3 meant that the item had exactly the same meaning in both versions, a score of 2 meant that the item had almost the same meaning in both versions, and a score of 1 meant that there were different meanings in each language (Flaherty et al., 1988; Lee, 2007). This multiple-step translation process was used to produce the final Chinese versions of the documents (see Figure 1).

Step 1: First translator forward translated the original English documents into the target language (English Version 1 to Chinese Version 1).

Step 2: Second translator back translated Chinese Version 1 to English Version 2 without prior knowledge of the original documents.

Step 3: The English Version 2 back translation was then compared with the original documents by both translators using the Flaherty's 3-point point scale to identify discrepancies. After discrepancies were discussed by both translators, the first Chinese version was revised to produce Chinese Version 2 of the documents.

Step 4: A third translator, blinded to the original documents, back translated Chinese Version 2 into English Version 3.

Step 5: Two bilingual native-born Chinese laypeople independently reviewed the second Chinese version to provide additional feedback to the translators.

Step 6: The first two translators repeated the Flaherty 3-point scale to compare the consistency between the original and the third translator's back-translated English Version 3. In addition, the translators discussed any discrepancies or ambiguous items identified by the two lay reviewers of Chinese Version 2. Chinese Version 3 was developed during this phase.

Step 7: The fourth translator, blinded to all of the above versions of documents, independently performed the back translation of Chinese Version 3 into English Version 4. This final back-translated English Version 4 and final Chinese Version 3 and the original

English Version 1 documents were compared for equivalency by the first two translators using the Flaherty 3-point scale. The first back-translated English version showed that there were differences in 28 items: 11 items (39.3%) scored 3 points, 7 items (25.0%) scored 2 points, 3 items (10.7%) scored 1 point, and 7 items (25.0%) were noted to be not applicable because of culture differences (e.g., the sentence “an individual signing with an X” has no meaning in Chinese; therefore, a literal translation of this sentence was made into the target language, and the X is just a symbol for the Chinese participants who can't speak English). After discussion among the translators, the final comparison showed 16 items (57.1%) that scored 3 points, 5 items (18.0%) that scored 2 points, and no items that scored 1 point (which was our goal). Seven items (25.0%) remained “not applicable” because of the absence of culturally equivalent concepts (Casagrande, 1954; Hunt & Bhopal, 2004; Smith, 2004; Wang et al., 2006). We consider these documents as our final versions because we had no items with a score of 1 on the Flaherty 3-point scale.

Step 8: The final Chinese documents were reviewed by 10 Chinese laypeople. Of the 10 laypeople, 5 were monolingual Chinese research study participants, and the other 5 were bilingual Chinese who did not participate in the study. Each lay reviewer read the Chinese documents and then completed an open-ended questionnaire about the clarity of the documents and their understanding of the content in the translated documents.

Step 9: The final Chinese versions of the documents were reviewed and approved by the Institutional Review Board at the research study's institution.

Results

All 10 of the Chinese-language individuals who reviewed the Chinese documents and completed the questionnaires answered yes when they were asked whether they fully understood the Chinese documents. One person who was visually impaired and unable to read the documents had the documents read to him by our translator. After listening to the translation he also indicated that the Chinese documents were fully understandable. Another person suggested that certain terms described in the consents looked like “English–Chinese” but not “mother-tongue Chinese,” which was because of the cultural differences between the two languages. Examples were the phrases “an individual signing with an X,” “sign your initials,” and “state and federal privacy laws.” Although the translation did not distort the original meaning, further explanation was required by the translators during the review process by clarifying questions related to informed consents (Barata, Gucciardi, Ahmad, & Stewart, 2006).

Discussion

There has been more emphasis on the psychometric testing of cross-cultural research instruments and less attention on the ongoing ethical and legal necessity to provide understandable, culturally equivalent study consents and supporting documents for the non-English speaker (Garcia-Castillo & Feters, 2007). Here we have described a rigorous translation process that can be duplicated in research studies (Lee, 2007) as well as in direct, patient-based projects (Yu et al., 2004).

The recruiting process is a crucial step for potential research participants to understand their participation in a research study. A misunderstanding of consent forms may actually violate the rights of the participants. Likewise, patients might not fully understand the documents, such as preoperative instructions, if the document translation process has not been rigorous.

Admittedly, we encountered some difficulties in our translation process. One difficulty concerned the different grammatical and syntactical styles between the two languages, and

another was the different cultural descriptions and terms that made it difficult to achieve a literal word-by-word equivalence. However, a literal translation is not necessarily a desired end product because it may result in incomplete sentences or distortions of the connotative meaning in the target language (Beck, Bernal, & Froman, 2003; Harkness et al., 2004; Kao et al., 2004). For example, the original title of our study was “Assessing and Treating Symptoms of Critically Ill ICU Patients.” The literal sequence of the Chinese versions in English was “ICU Critically Ill Patients' Symptom Assessment and Treatment.” In Chinese, *assess*, *assessing*, and *assessment* all use the same character, as do *treat*, *treating*, and *treatment*. Prepositions such as *of*, *in*, and *by* in Chinese can usually be omitted within one sentence. In this case, we were using semantic and conceptual equivalence because the meaning was the same even though the sentences were different. Our English back translation changed the study title to “Symptom Assessment and Treatment in Seriously Ill Patients in the ICU.” *Critically ill* and *seriously ill* also have semantic equivalence in Chinese. We identified other examples of semantic and conceptual equivalence such as *permission* versus *authorization*, *privacy laws* versus *confidentiality laws*, *the expiration date* versus *the date will end*, *tired* versus *fatigued*, *scared* versus *fearful*, *fluctuating course* versus *fluctuating process*, and *apprehensive* versus *worried*. When such equivalencies exist, the term that is best understood by the participant can be used.

Cultural differences were identified with the use of English terms such as *short of breath*. The translator who did the first back translations was not sure of the meaning and left it blank. In its literal translation, *short* means *not long*, but in Chinese *breath* is not described as either short or long. Consequently, we translated *short of breath* into *hard to breathe*.

Another example of a cultural difference was use of the term *initials* in the University of California “Permission to Use Personal Health Information for Research Consent” form when participants were being asked to sign their name. Chinese characters are not composed of letters as in English, so there are no initials used in the place of words. To get initials, we first translated Chinese names into English by pronunciation. In traditional Chinese name systems, a name is usually composed of two to three characters. The term *initials* in the Chinese translation became *brief name of your full name*. However, this part of a document still needs further explanation because it could be confused with *nickname*.

The phrase “an individual signing with an X” in the Personal Health Information consent form was translated literally into Chinese. The statement is, “for those who can't sign their name themselves (i.e., too weak to hold a pen), you may put ‘X’ as a valid signature.” However, “X” has no meaning in Chinese, so we still needed to further explain what “signing with an X” signifies on a Chinese document. Another example of the lack of congruency occurred with the translation of names of specific institutions or personal names. The English name of the study's principal investigator could not be translated into Chinese, so we translated characters literally by pronunciation. Likewise the National Institute for Nursing Research was translated literally into Chinese, but we then included the full English name with parentheses after the Chinese sentence for added clarification because this is a specific institution in the United States.

Today's translation process for health care has evolved from Brislin's (1970) forward and back translation process to the involvement of more bilingual and bicultural individuals from the target community to develop a committee or consensus approach to translation (Barata et al., 2006; Kao et al., 2004; Ponce et al., 2004). During the forward and back translation process, we found that focused discussions on each item in question facilitated the translators in reaching a consensus on the most accurate and easily understood terms. In addition to having a systematic consensual translation process, we suggest that there is added value of having trained bilingual interpreters (Ngo-Metzger et al., 2003) to provide a culturally and

linguistically appropriate venue for any non-English-speaking patients to participate in research. Furthermore, use of this process of translation of patient care documents can alert clinicians to the nuances intrinsic to culturally competent care.

Conclusion

The presence of properly translated documents for a targeted population and the use of bilingual researchers during the data collection process of research allow non-English-speaking individuals to participate in research. To reach out to a culturally diverse and non-English-speaking population, researchers must use a cultural consensual processes like that which is described here. Research results will be more generalizable and the advancement of science improved if non-English-speaking people are offered the opportunity to participate. Likewise, if a similar process is used to develop culturally appropriate patient assessment or educational documents, we are advancing transcultural nursing care.

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Figure 1. Translation Process for Study Documents

*Using Flaherty's 3-point scale (please see text).