

Lessons Learned

Challenges in interpreting diabetes concepts in the Navajo language

MELVINA McCABE, MD
FRANK MORGAN, BA
MELISSA SMITH, BA
ELLA YAZZIE

ANTHONY SPENCER
HELEN CURLEY
RICK BEGAY
DOROTHY GOHDES, MD

Communication about diabetes presents a challenge for indigenous populations experiencing increasing rates of type 2 diabetes. In translating simple terms related to diabetes from English to Navajo and transforming information into acceptable and useful forms for patients from traditional backgrounds, Navajo interpreters are faced with many challenges. The Navajo language was originally unwritten, and like most native languages, the grammatical structures and constructs are very different from those of Latin-based languages.

This commentary highlights the lessons learned during the process of translating information about diabetes into Navajo during the course of the controlled randomized study on the "Effect of Navajo Interpreters on Diabetes Outcomes" and may provide a template of considerations for other ethnic groups when translating terms relating to diabetes. Briefly, four translators initially recorded an oral Navajo translation of the Michigan Diabetes Knowledge Test (1). The taped version was translated back into written English by a Navajo language expert, who then prepared another Navajo version. The revised translation was verified with selected elderly community members and with a committee that included nurses, dietitians, health educators, a traditional medicine practitioner, a community elder, and a patient with diabetes. The original translators and the Navajo language expert together reached a final consensus. While the translators

were completing the Navajo translation, they received training about the disease process of diabetes and medical translation. All interpreters passed both Navajo and English proficiency testing.

THE COMPLEXITY OF TRANSLATING DIABETES TERMS

Diabetes

Diabetes has usually been translated as the "sugar illness." The interpreters molded a broader translation that defines diabetes as a process where the pancreas "sends messages" by means of its fluids (insulin). Diabetes means the body cannot use the pancreas fluids (insulin) and therefore is not able to receive the messages from the pancreas correctly. The translators used stories to explain disease processes cautiously to ensure that the stories were perceived in the proper context. When utilizing stories as a means of communication, the translators noted that younger Navajo patients were more likely than older individuals to regard stories as an unimportant or trivial means of communication.

Blood glucose

The most common translation for blood glucose was the literal translation as "table" sugar in the blood, but this translation caused confusion as to how table sugar could be in the blood if people did not eat it. Another common translation conveyed the physical description of

sugar as a fine white dust or mist. Neither translation was adequate. The final version translated "blood glucose" by explaining how food is broken down into a sweetened watery substance that builds up throughout the body. Because the Navajo language is very descriptive and specific, translating blood glucose by describing how "a sweetened watery substance" came to be in the blood was more relevant than using the word for table sugar.

HbA_{1c}

The term "glycosylated hemoglobin" obviously has no direct equivalent in Navajo. Starting with a test performed on blood and because blood is known to be red, the translators described red cells. Building on the blood glucose concept, the translators then used one of several specific terms that described glucose as being attached to but not inside the red blood cell. The translation thus became "the measurement of the breakdown of glucose (energy that comes from the food juices) from the food in the blood system from the past three months." In this example the translators actually described the pathophysiology in detail to explain the test.

Carbohydrate

There are no terms for nutrients in Navajo. The translators translated a simple description of carbohydrate in English as "food of plant origin that breaks down quickly, giving the body energy and power of movement." When technical words such as "carbohydrate" had no Navajo equivalent, the translators found it helpful to convey the meaning first in English using simple nontechnical language before translating the concept into Navajo.

PROBLEMS WITH WORD-FOR-WORD TRANSLATIONS

—It was not always possible to find a one-word translation for a particular English word, and at times it was important to avoid trying to develop a very literal translation. With

From the University of New Mexico School of Medicine, Family and Community Medicine, Albuquerque, New Mexico.

Address correspondence to Melvina McCabe, University of New Mexico School of Medicine, Department of Family and Community Medicine, 2400 Tucker Ave. NE, Albuquerque, NM 87131. E-mail: mmcabe@salud.unm.edu.

Received for publication 30 August 2002 and accepted in revised form 24 February 2003.

A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

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typical Navajo humor, the translators pointed out that “Swiss cheese” is best translated as “white cheese with holes in it,” with no attempt to trace its origins to Switzerland.

REGIONAL DIFFERENCES IN NATIVE LANGUAGE

—The translators were originally from different regions of the Navajo Nation and encountered differences in the way terms were translated. In one area of the reservation, the translation for peanut butter is simply the equivalent of peanuts, i.e., “light-gray nuts.” In another part of the reservation, the translation is “ground light-gray nuts.” Blood drawing can be translated as “the drawing of blood” or “the making of blood” and melon as “something you eat but doesn’t satisfy” or “something you cut open” or, yet another interpretation, “something eaten raw.”

CULTURAL CONSIDERATIONS IN THE PROCESS OF TRANSLATION

—Navajo has a ceremonial language about symptoms and healing, but use of the traditional ceremonial language can embarrass people. Communicating sensitive information in the presence of one’s relatives can be extremely uncomfortable, both for the patient and for any relative who might be asked casually to translate such information. Furthermore, by being inappropriately asked about personal symptoms, people might be unwilling to return for care in the future. For translators to be effective, it was important to recognize situations when translated words may be correct, but the process of translation inappropriate. Thus literal translations, while accurate linguistically, could be sufficiently inappropriate culturally to prevent accurate communication between provider and patient.

DISCUSSION — Our experience in translating the medical terms into Navajo

presented challenges that are not unique. Similar issues have been described in studies about medical translations. Kaufert and Koolage (2) found that a direct translation into the Cree American Indian language was not always feasible and that an explanation of the function of the organ was the closest one could get in the translation process. Brislin et al. (3) recommended principles based upon three studies, one of which translated English into Navajo (4), that determined qualities of poorly and well-translated written English. The principles included the use of short simple sentences, the active voice, use of specific terms, and the use of repeat nouns. Back translation has been shown to be an effective means of providing the most accurate translation available both in the development of surveys and questionnaires and in the clinical setting (5,6).

Translating diabetes terms into a complex language like Navajo requires that subtle issues be addressed very concretely. Terms central to understanding diabetes and its complications are seemingly simple, yet translations can be complex. By probing the linguistic, cultural, and regional language issues in translating an apparently simple questionnaire from English into Navajo, the translators were able to articulate approaches that can be used in explaining diabetes management in an appropriate cultural context, as described by Murphy et al. (7).

By processing the Navajo translation through initial translation, back translation, and testing the final translation on a variety of individuals, we were reasonably sure of the quality of the translation (5,6). The concerted effort of our translators to make a clear, acceptable translation of a questionnaire emphasizes that being able to speak their native language alone is not sufficient. Attention must be paid to cultural factors, regional language differences, and the possibility of a lack of word-for-word translation, utilizing in-

stead the more complex translation into the pathophysiology of disease.

The need for better communication and professional translation of diabetes terms and concepts is widespread. Our experience suggests that attention not only to language translation but also to cultural and geographic factors is vital to obtain an accurate and meaningful translation and will be widely applicable in many situations.

Acknowledgments— We thank the Agency for Health Care and Research Quality for their support.

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