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Development of a Scale to Measure Nutritional Literacy

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Development of a Scale to Measure Nutritional Literacy

At the 2004 meetings of the American Public Health Association, Baur and colleagues reported that health literacy is "an HHS and public health priority." Despite the national awareness around nutrition, and its undisputable link to obesity and diabetes, and the interest in the relationship between literacy and health outcomes, there has been no research on nutritional literacy. A validated measure of a patient's ability to comprehend nutritional information has the potential to be an important assessment tool adding to our understanding of the role of non-disease-centric measures in health outcomes.

As described in Sciammana and Cobb's article, Will Health Literacy Research and Initiatives End the Confusion?, also in this newsletter issue, there are several tools and strategies to take steps in addressing the problem. One strategy is appropriately identifying those patients with low health literacy, most commonly through administration of the Test of Functional Health Literacy in Adults (TOFHLA).[1] While the TOFHLA offers an overall assessment of health literacy, there needs to be more specificity around measuring patients' literacy on nutritional concepts and practices to better address the obesity and diabetes epidemic. The Nutritional Literacy Scale, a self-administered tool, is modeled after the TOFHLA. The initial version, developed in 2003, was constructed from declarative sentences found in several nutritionally related websites, such as Mayo Clinic's Food and Nutrition Center, Tufts Nutrition Navigator and the USDA Center for Nutrition Policy and Promotion. The topics included "heart-healthy" eating, saturated fats, fiber, organic foods and portion size. Following the model of the TOFHLA, the Cloze procedure was used in which selected words are removed from a sentence and respondents pick the word that "fits" best from several different options. For example: "Losing _____ can be a challenge." The choices might be weight, calories, fiber, or vitamins listed in a multiple-choice format. The nutritional literacy score is the number of items answered correctly. While the scale is not timed, it usually takes less than 10 minutes to complete.

The scale was pilot tested and revised. The current version contains 32 items grouped by content and, in general, ordered from the easiest to the more difficult. To assess internal consistency and construct validity, both the nutritional literacy scale and the short version of the TOFHLA were administered, with IRB approval, to 100 patients in a large, urban, university-based family medicine practice. Demographically, 74% of the respondents were female. Seventy-five percent had more than a high school education. The group was predominantly African American (56%), another third were Caucasian, and the remaining patients identified themselves as Asian, Hispanic or Other. The mean age was 42, with a median of 41 and a range of 15 to 83.

The nutritional literacy scale was shown to be internally consistent (Cronbach's a = 0.84). Construct validity was assessed with the Pearson correlation between the nutritional literacy and health literacy scales (r = 0.58). When the effect of education is controlled, the correlation dropped to 0.51, implying that the literacy scales share 25% of common variance, independent of education level. Research is underway to assess the relationships among health beliefs, literacy and the intake of fats, fruits, and vegetables.

This early work on nutritional literacy suggests that the construct can be measured reliably, and correlates with an accepted measure of health-related literacy.[2] Additional projects will look at nutritional counseling and cardiovascular data as related to literacy and beliefs.

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