Chapter 3.30
Enhancing Cognitive Screening in Geriatric Care:
Use of an Internet-Based System

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ABSTRACT

Cognitive screening measures for age-related cognitive impairment have been found to have only fair validity, and the risks of harm even may outweigh the benefits at this time (U.S. Preventative Service Task Force, 2003). A large-scale project designed to assess elder care in Primary Care Physician offices noted that dementia evaluation and treatment was one of the most overlooked aspects of care. Taken together, these studies cited the lack of time and technical expertise in test administration as the most prominent barriers to the accurate detection of dementia in Primary Care Physician offices. It was for these reasons that the Cognitive Screening Test (CST) was created. The CST requires no physician time or training to administer or interpret it. The current study investigated the clinical utility of this cognitive screening system by comparing the results of 102 patients to those of expert geriatricians, using consensus conference methods for diagnosis. Overall clinical utility demonstrated scores at .80 or above for sensitivity, specificity, and positive and negative predictive power. In contrast, the MMSE had only a .38 sensitivity. A Receiver Operating Curve (ROC) analysis indicated a .863 accuracy rating for the predetermined cut score on the CST.

VALIDATION OF A DEMENTIA SCREENING TEST IN GERIATRIC PRACTICE

The growing prevalence of dementia makes it imperative that Primary Care Physicians become more able and more comfortable to diagnose dementia, particularly in its earlier stages. Early diagnosis gives physicians the opportunity to initiate treatment with acetylcholinesterase inhibitors, which have shown to delay cognitive and functional declines (Mohs et al., 2001) and to delay nursing home placement (Schneider, 2000; Turner, 2003), all the while producing infrequent, temporary side effects (Boise, Morgan, Kaye,& Camicioli, 1999). It allows patients and families to plan for future care needs, financial needs, and legal needs associated with a lengthy, debilitating illness (Boise et al., 1999; Knopman, Donohue,& Gutterman, 2000), and families and patients may be given insight into the behavioral and personality changes that may occur and the safety precautions that eventually may be necessary (Knopman, et al., 2000; Sano & Weber, 2003). On the whole, primary care physicians continue to have difficulty detecting the majority of dementia cases among their patients. In previous studies, less than 30% of patients have been correctly identified as cognitively impaired, including even those with poor cognitive performance (Boise, Neal, & Kaye, 2004; Olafsdottir, Skoog, & Marcusson, 2000; Valcour, Masaki, & Blanchette, 2002). In an effort to increase the detection of cognitive impairment and generally to increase the quality of patient care, variables have been identified that impede this process. In a review, Reuben, Roth, Kamberg, and Wenger (2003) identified physician time constraints and a lack of physician technical expertise with cognitive screening administration and interpretation as major factors that impede effective dementia screening. Additionally, compounding the issue is that the standard primary care model of medical practice relies heavily on the patient's symptoms report. However, lack of awareness of symptoms is a common feature of Alzheimer's disease; thus, even when queried directly, patients often deny or minimize cognitive problems (Zanetti et al., 1999).

Conducting and interpreting brief cognitive screening is problematic in Primary Care Practices, even in practices where screening tests such as the Mini-Mental Status Examination (MMSE) are used. It is well established that the MMSE is sensitive to the effects of education and age (Anthony, LeResche, Niaz, Von Korff, & Folstein, 1982; Crum, Anthony, Bassett, & Folstein, 1993; Monsch et al., 1995; Spreen & Strauss, 1998; Tombaugh & McIntyre, 1992; Tombaugh, McDowell, Krisjansson, & Hubbley, 1996; Uhlmann & Larson, 1991). As a result of these findings, normative data have been published that make such considerations (Crum et al., 1993; Tombaugh et al., 1996). However, interpretation that considers age and education rarely occurs in clinical practice. More often than not, single-cut scores are used as a basis to distinguish the impaired from intact patients; for example, a cut score of 23/24 on the MMSE has been suggested to indicate cognitive impairment (Folstein, Folstein, & McHugh, 1975). This cut score also has been found appropriate in population-based studies (Ganguli et al., 1993). However, depending on the age and educational characteristics of the patient, this cut score consistently has demonstrated low sensitivity or specificity (Monsch, et al., 1995; Spreen & Strauss, 1998; Tombaugh & McIntyre, 1996). Due to these test constraints, cognitive screening measures for age-related cognitive impairment have been found to have only fair validity, and the risks of harm even may outweigh the benefits at this time (U.S. Preventative Service Task Force, 2003).

Ideally, a screening device for dementia will contain many memory items, since this is the domain of cognition typically impaired; it will require little in the way of administration and interpretation by those not trained in psychometrics and will be based on normative data