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# Malingering detection in a Spanish population with a known-groups design

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**Abstract**

Malingering detection has become a topic of increased interest in the US over the last years. However, this development has not been matched in Europe. For example, in Spain there is insufficient evidence to support the use of reliable and valid malingering tests. In this study, we tested the applicability of two malingering detection tests (Test of Memory Malingering (TOMM) and Dot Counting Test) in a Spanish sample. The sample included three groups of patients (30 non-compensation seeking, 14 compensation seeking non-suspected of malingering, and 10 suspected of malingering) and a group of analog students ($n = 54$). Tests' results were able to discriminate between the groups of malingerers (both patients and analogs) and non-malingerers (both compensation seeking and non-compensation seeking). However, the TOMM achieved a higher overall classification rate than the Dot Counting Test. Our results encourage the use of the TOMM as an indicator of malingering with Spanish population.


*Keywords:* Malingering; TOMM; Dot Counting Test; Spanish speakers; Poor effort; Insufficient effort

## 1. Introduction

Forensic neuropsychology has experienced considerable growth in the past few years. This expansion can be noticed through the increased number of articles published in this field (Bigler, 2006; Sweet, King, Manila, Bergman, & Simons, 2002) as well as varying practice patterns (Sweet, Peck, Abramowitz, & Etzweiler, 2002) and the emergence of specific publications, such as the Journal of Forensic Neuropsychology. Furthermore, the increasing number of presentations at conferences, workshops and books (e.g., Larrabee, 2005; McCaffrey, 1997) reflects this significant growth.

Within the subspecialty, malingering has become the most widely studied topic (Sweet, King, et al., 2002) due to the high demand for neuropsychological services in forensic settings associated with both personal injury and criminal cases. This is especially the case in situations with mild brain injury or dysfunction.

Currently, an increasing percentage of individuals are involved in neuropsychological evaluations in which significant economic gains occur when cognitive impairment is established. In many cases, data from neuropsychological testing are the only source of objective evidence of brain impairments. This is especially true in cases of mild brain

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damage and cases of post concussion syndromes, where results of neuroimaging studies are usually negative and the neurological signs are generally absent.

Symptom validity testing (SVT) is the most widely used and studied method to detect decreased effort and malingered cognitive impairment (Gervais, Rohling, Green, & Ford, 2004). SVT is an exception among malingering detection methods due to its high level of sensitivity (Slick, Sherman, & Iverson, 1999; Willison & Tombaugh, 2006). Furthermore, the use of SVT is recommended by the National Academy of Neuropsychology (NAN) whenever effort is evaluated (Bush et al., 2005). Therefore, the contribution of SVT to forensic neuropsychological evaluations is increasingly valuable (O'Bryant, Duff, Fisher, & McCaffrey, 2004; Tombaugh, 1996).

Presently, the Test of Memory Malingering (TOMM; Tombaugh, 1996) is probably the symptom validity test that has generated most research. Studies have shown that the TOMM is not sensitive to the effects of age (Constantinou & McCaffrey, 2003; Rees, Tombaugh, & Boulay, 2001; Teichner & Wagner, 2004; Tombaugh, 1996), education (Constantinou & McCaffrey, 2003; Rees et al., 2001), traumatic brain damage (Haber & Fichtenberg, 2006; Rees et al., 2001; Tombaugh, 1996), dementia (Tombaugh, 1996), psychiatric disorders (Duncan, 2005; Gierok, Dickson, & Cole, 2005), anxiety (Ashendorf, Constantinou, & McCaffrey, 2004), laboratory induced pain (Etherton, Bianchini, Greve, & Ciota, 2005) and depression (Ashendorf et al., 2004; Rees et al., 2001; Yanez, Fremouw, Tennant, Strunk, & Coker, 2006).

The TOMM is effective for detection of analogues (AN) (Etherton et al., 2005; Powell, Gfeller, Hendricks, & Sharland, 2004; Rees et al., 1998), patients involved in litigation (Constantinou, Bauer, Ashendorf, Fisher, & McCaffrey, 2005; Gavett, O'Bryant, Fisher, & McCaffrey, 2005; Greve & Bianchini, 2006; Rees et al., 1998) or seeking economic compensation (Haber & Fichtenberg, 2006; Moore & Donders, 2004), and known-groups designs (Greve, Bianchini, & Doane, 2006). Furthermore, the TOMM is not affected by coaching when it is provided by the researcher (Powell et al., 2004), or when analogues are asked to coach themselves to avoid detection (Rees, Tombaugh, Gansler, & Moczynski, 1998; Tan, Slick, Strauss, & Hultsch, 2002). Likewise, the TOMM is not affected by knowledge about the consequences of the traumatic brain injury (TBI), since patients with traumatic injuries are not any better at avoiding detection. The TOMM is equally effective when administered by computer and when it is administered as part of a broad neuropsychological battery (Rees et al., 1998). However, the tests must be used with caution in severely damaged patients (Greve et al., 2006) and in cases of dementia (Teichner & Wagner, 2004). Furthermore, its potential applicability in ethnic-minorities or languages other than English is not documented.

Another frequently used test for detecting malingering is the Dot Counting Test (Rey, 1964). In this test, the participant has to count dots that are either grouped in a pattern or randomly distributed across the card display. The time needed to count the dots increases gradually as the number of dots increases. Lezack (1995) established that a significant deviation in this pattern is evidence that subjects are not approaching the test with a sufficient amount of effort. Furthermore, the time required to count the grouped dots is inferior to the time to count the non-grouped dots. When the time in both conditions is the same or inverted, a bias in the subject's response is suspected (Lezack, 1995).

Lezak's recommendations have drawn both criticism and support. Some studies have concluded that Lezak's recommendations are not useful to detect malingering, because they provide very low sensitivity in detection (Greiffenstein, Baker, & Gola, 1994; Frederick, Sarfaty, Johnston, & Powel, 1994; Rose, Hall, Szalda-Petree, & Bach, 1998). In contrast, the study by Binks, Gouvier, and Waters (1997) supports Lezak's recommendations. Nevertheless, these authors found more useful to consider the number of errors made on the test when differentiating malingerers. However, they did not propose a cut-off point for the use of this variable. Other studies have supported the use of the number of errors variable. Lee et al. (2000) found 100% specificity in elderly people with severe depression using a cut-off point of three errors on this test. Cato, Brewster, Ryan, and Giuliano (2002) found that the cut-off point of six errors achieved a correct identification of 67.9% of the malingerers, although this percentage fell drastically to 12.5% among the trained malingerers, so that the Dot Counting Test seems to be especially sensitive to training. Hilsabeck and Gouvier (2005), using a cut-off point of >4 errors, obtained very good specificity but low sensitivity with the number of errors variable, detecting only 23% of the analogues.

An important study on the Dot Counting Test was conducted by Boone, Lu, Back, et al. (2002). They administered the Dot Counting Test to 100 patients suspected of malingering and to 251 subjects divided in 9 different clinical groups. The study found significant differences between the two groups with regard to the following scores: mean time used to count the grouped dots cards, ratio (division between the time of the grouped and non-grouped items), number of errors and, above all, combo score (mean time for grouped items plus mean time for non-grouped items plus errors). A high level of sensitivity and specificity was obtained except for the dementia group.