

# **The WAGER Vol. 7(5) - Psychometric Properties of the SOGS In The General Population**

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A recent article by Randy Stinchfield (2002) notes that researchers frequently use the South Oaks Gambling Screen (SOGS, Lesieur & Blume, 1987) to assess the prevalence of pathological gambling in the general population. However, the original psychometric properties of the SOGS were not developed for the general population but for four special groups (GA members, university students, psychiatric inpatients, and hospital employees). Only recently has a researcher, (Stinchfield (2002), reported an in-depth analysis of the psychometric properties of the SOGS in a general population, as well as a clinical population.

This issue of The WAGER reports procedures and findings pertaining to Stinchfield's general population sample. The study sample consisted of 803 men and women obtained from a 1995 Minnesota State Survey (cited in Stinchfield, 2002).

Surveyors randomly selected households in Minnesota and contacted them by telephone. Surveyors then asked the adult with the most recent birthday in the household to participate. A 70% response rate was achieved. Participants responded to several questions about their personal behaviors and depending on their responses also completed the SOGS and a questionnaire yielding a DSM-IV diagnosis of pathological gambling.<sup>1</sup> Both the SOGS and the DSM-IV questionnaire used a "past-year" timeframe rather than "life-time." Individuals who reported that they did not gamble in the past year (n=306) did not complete the SOGS or DSM-IV questionnaire and researchers assigned them scores of zero for both. All other participants completed the SOGS. If their SOGS score was zero, researchers also set the participant's DSM-IV questionnaire score to zero (n=381). All participants with non-zero SOGS scores completed the DSM-IV questionnaire (n=116).

A principal components analysis indicated that the SOGS was best explained by one factor (eigenvalue=3.8; variance accounted for=21%). This suggests that the SOGS probably measures one common construct, rather than multiple related

features. The author also reported a measure of internal consistency (i.e., coefficient  $\pm = 0.69$ ). This level of internal consistency or reliability is not inconsistent with a single factor structure, but suggests that the SOGS items might be measuring different underlying phenomena.

Convergent validity, measured by correlations between the SOGS and the DSM-IV diagnosis, gambling frequency, and maximum monies gambled in a single day, were moderate to high in the general population (see Table 1).<sup>2</sup> Unfortunately, the general population respondents who met either SOGS or DSM-IV diagnosis (N = 5) were too few for confident inference. Stinchfield reported SOGS/DSM-IV agreement for a combined sample of general population and clinical participants. For this sample of 1,172 respondents, 98% had the same SOGS and DSM-IV classifications, 71% did not meet criteria and 27% did. There were more people whose SOGS diagnosis of pathological gambling was not confirmed by DSM-IV (14 of 336, 4%) than DSM-IV pathological gamblers not confirmed by the SOGS (5 of 327, 2%).

**Table 1: Correlations between external criteria and SOGS scores in a general population**

Criterion	Index of Convergent Validity
DSM-IV questionnaire	0.77
Highest level of gambling frequency	0.35
Largest amount of money spent gambling in 1 day	0.32

These results suggest that the SOGS can be used effectively in a general population, but should be used with caution. Assessment tools, generally, operate poorly in populations with low base rates of the phenomena of interest. Also, Stinchfield (2002) has demonstrated that the reliability of the SOGS is not very high and, in this study with a small number of pathological gamblers, it yielded a high false-positive rate in the general population. Although convergent validity was high between the SOGS and DSM-IV, convergent validity using DSM-IV criteria confirmation is not necessarily the best method of estimating validity (Stinchfield, 2002). Validity represents the extent to which a measure accurately reflects the true state of nature (Blacker & Endicott, 2000) and the purpose for which the measure is being applied (Shaffer, Hall, & Vander Bilt, 1997). However, because DSM-IV infers the presence of gambling from its consequences, the extent to which DSM-IV represents a true state of nature is uncertain. In addition,

for the general population alone, Stinchfield's three-stage confirmation procedure precluded examining some cases that might have met DSM-IV criteria when the SOGS diagnosis was negative; if individuals' SOGS scores were zero, they did not complete the DSM-IV questionnaire. Although the author notes that it is unlikely to have positive DSM-IV classification and negative SOGS classification, specifically testing this would have resulted in a more precise estimate of the "true" positive rate.

Though researchers often make claims about the psychometric properties of the SOGS for the purposes of their specific research and for the populations they are assessing, many investigators do not know the value of these properties. The validity of empirical results is limited by the quality of a test's psychometric properties. Stinchfield notes that the SOGS should be used as a first step in assessment. While there are many screening instruments available and many more in the early stages of development, the SOGS remains a popular choice for estimating prevalence. If this remains the case, positive SOGS results can be followed with diagnostic assessment (e.g., Abbott, 2001). Researchers who choose this method as a means of identifying prevalence rates might have a difficult time adjusting for high false positives. For clinicians, however, this is business as usual.

## **Notes**

1 DSM-IV items were administered via a 19-item questionnaire developed, in collaboration with Dr. Ken Winters, for this study. The psychometric properties of this test were satisfactory. The questions are reported to be "paraphrased DSM-IV criteria written in the form of a question," and can be found in Appendix A of (Stinchfield, 2002).

2 Construct validity was determined by testing whether or not the SOGS effectively distinguished the general population sample from a clinical sample. Construct validity was reported to be high.

## **References**

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