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The South Oaks Gambling Screen (SOGS): A New Instrument for the Identification of Pathological Gamblers

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The South Oaks Gambling Screen is a 20-item questionnaire based on DSM-III criteria for pathological gambling. It may be self-administered or administered by nonprofessional or professional interviewers. A total of 1,616 subjects were involved in its development: 867 patients with diagnoses of substance abuse and pathological gambling, 213 members of Gamblers Anonymous, 384 university students, and 152 hospital employees. Independent validation by family members and counselors was obtained for the calibration sample, and internal consistency and test-retest reliability were established. The instrument correlates well with the criteria of the revised version of DSM-III (DSM-III-R). It offers a convenient means to screen clinical populations of alcoholics and drug abusers, as well as general populations, for pathological gambling.

(Am J Psychiatry 1987; 144:1184-1188)

In 1980 APA included the diagnosis of pathological gambling under the category of disorders of impulse control in *DSM-III*. Both before and since that time, researchers have found evidence of pathological gambling among inpatients with diagnoses of alcohol and drug abuse (1-3); among probationers, parolees, and prisoners (unpublished 1985 paper by H.R. Lesieur and R.M. Klein); and among high school students (4).

According to the Commission on the Review of the National Policy Towards Gambling (5), there were an estimated 1.1 million "probable compulsive gamblers" in the United States in 1974. This is 0.77% of the adult population. In a critique of the commission's report, Nadler (6) placed the figures at anywhere from 1.1 to

4.4 million. In partial support of this critique, a survey of Ohio residents conducted for the Ohio Lottery Commission (7) estimated that 2.5% of the adult population were probable pathological gamblers and another 3.4% were potential pathological gamblers. In spite of these numbers, there are only about 10,000 members of Gamblers Anonymous and fewer than 20 treatment programs directed toward pathological gamblers in the United States today.

Pathological gambling is related to marital, financial, emotional, occupational, legal, and other problems. Separation and divorce, immense debts, depression and suicide, lost time at work and school, civil and criminal court appearances, suicide attempts by the gambler's spouse, and medical problems in the gambler are some of the problems that have been found to be associated with pathological gambling (8-12; unpublished papers by H.R. Lesieur and R.M. Klein [1985] and R.L. Custer and L.F. Custer [1978]).

Because of the severity of possible consequences, including suicide, early identification of pathological gamblers is important, yet many cases are currently overlooked in counseling, treatment, probation, parole, and other programs. A consistent, quantifiable, structured instrument that can be administered easily by nonprofessional as well as professional interviewers is needed. Such an instrument was constructed by the Gambling Treatment Team at South Oaks Hospital.

Two previous methods of identifying pathological gamblers are questions based on *DSM-III* criteria and the 20 questions of Gamblers Anonymous. The *DSM-III* criteria concentrate on late stage (desperation phase) signs and symptoms. They have been criticized (9) for being overly restrictive and for including criteria that show social class bias. Partially as a result of these critiques, the *DSM-III* criteria were revised by APA. The 20 questions of Gamblers Anonymous, which are based on the experience of Gamblers Anonymous members, have been used to screen patients at South Oaks Hospital and elsewhere. However, we have found that they generate an excessive number of false-negatives.

METHOD

Research was conducted in three stages. The first and second led to the development of the South Oaks

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The members of the Gambling Treatment Team at South Oaks, all of whom were involved in the research, included Dr. Blume; Richard Zoppa, M.D.; Robert Cahill, B.A., C.A.C.; Kay Maher, C.A.C.; Frank Casey, M.S.W., C.A.C.; Paul Burns, B.A., C.A.C.; Edna Bronzino, R.N.; Joyce Daly, B.A., C.A.C.; Mary Heineman, M.P.S., C.A.C.; Joseph Melman, M.S.W., M.P.A.; Jane Murphy; Mary Stark, C.A.C.; and Maurice Weiner, B.A.

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Gambling Screen, and the third assessed its validity and reliability. The first two stages were conducted at South Oaks Hospital, a 105-year-old, 334-bed private psychiatric hospital located on the south shore of Long Island, N.Y. The hospital provides inpatient detoxification and rehabilitation for alcoholism and other drug dependencies and has an established program for the treatment of pathological gambling (13). The third stage involved four groups of subjects: members of Gamblers Anonymous who volunteered to complete the instrument while attending a national convention, a sample of university students, another control group of hospital employees, and a sample of patients at South Oaks.

During the first phase of the research, each inpatient with a diagnosis of alcohol or drug abuse who entered South Oaks from January 1 to September 30, 1984 (458 patients in all) was screened by using a Gambling History Test designed by the South Oaks Gambling Treatment Team. In addition, spouses and significant others of patients in treatment who visited the facility were asked about the patient's gambling habits.

The screening occurred in two steps. During the first week, while in the detoxification/orientation phase of treatment, patients were exposed to two lectures on gambling. The first lecture focused on switching addictions. Four days later, the patients saw a film entitled "You Bet Your Life," which was followed by a didactic presentation dealing with the disease concept of pathological gambling. The patients were given a questionnaire to complete after one of the lectures. They were told that even if the gambling they did was slight, infrequent, or "social," they were to answer all questions about gambling that applied to them. This questionnaire asked about their parents' as well as their own gambling habits. Every patient was interviewed by a counselor who reviewed the frequency of gambling, the amounts of money involved, the types of gambling, the gambling behavior (e.g., gambling to get even after losing, and drinking and gambling at the same time), as well as the patient's leisure time activities. If the patient denied any gambling, he or she was not interviewed further. If the patient admitted to gambling once a week or more, had a parent who gambled frequently, or bet more than \$10 on an event, a second interview was conducted by a counselor with extensive experience with gamblers as well as extensive training in alcohol studies. During the second interview patients were questioned intensively about family, job, financial, and other problems that might be associated with their gambling.

An index based on a modification of the *DSM-III* diagnostic criteria for pathological gambling was constructed. The index has seven components: 1) family disruption, 2) job disruption, 3) lying about gambling wins and losses, 4) default on debts, 5) going to someone to relieve a desperate financial situation produced by gambling, 6) borrowing from illegal sources, and 7) committing an illegal act to finance gambling.

A similar two-step process occurred in the inter-

views with significant others, except that they were asked about the degree of interest the patient demonstrated in various forms of gambling. Those who stated that the patient had a "heavy" or "obsessive" interest in gambling were interviewed further and questioned about family, job, financial, and other problems that may have been associated with the patient's gambling. The answers given by the patients and significant others were compared for consistency, and the patient was confronted with opposing evidence if inconsistencies surfaced.

In addition to the early screening, sometimes a gambling problem became evident during the hospital stay or in the process of outpatient aftercare. This has arisen in the course of group counseling, individual counseling, psychotherapy, or informal conversation. When this occurred, the patient was reinterviewed and the original gambling assessment form was corrected.

In addition to the Gambling History Test, counselors made independent assessments using a 5-point scale ranging from 1 (either one parent was a pathological gambler or the patient gambled heavily during the early or middle stages of alcohol or drug dependence but is not a pathological gambler) to 5 (patient has gambled extensively throughout his or her life and is definitely a pathological gambler). The results of the first stage were reported in an earlier paper (3).

In the second stage of the research process, counselors were consulted and questions were added to the survey instrument on the basis of their input. This was done to improve the congruence between counselor assessment and the screening test. A new schedule with 60 questions was devised. From December 1, 1984, to April 30, 1985, 297 inpatients with diagnoses of alcohol dependence, drug dependence, or pathological gambling were given the extended schedule. A new one-step procedure was created in an effort to shorten the time that it took for a counselor to conduct the interview. The inpatients were also screened by counselors and their status as pathological gamblers was reassessed on the basis of individual and group therapy sessions and interviews with their significant others.

After the second stage of the process, low-frequency items were eliminated, colinear items ($r = .75$ or higher) were extracted, and the resulting items were subjected to discriminant analysis by using the SPSSX computer program to further reduce their number. Counselor ratings used the 5-point scale described earlier in this paper. Since the rating of 3 was for subjects considered borderline, assessment scores of 4 or 5 were used as the discriminating variable. Twenty items were selected after this process. These 20 items constitute the South Oaks Gambling Screen (appendix 1).

To cross-validate the new index, stage three involved giving an anonymous questionnaire to 213 members of Gamblers Anonymous, 384 university students, and 152 hospital employees. The questionnaire was structured to include items from the proposed revision of *DSM-III* (*DSM-III-R*) as well as the 20-item South Oaks Gambling Screen.

a lot on financing

RESULTS

Stages One and Two

A cross-check of the validity of the South Oaks Gambling Screen was made by cross-tabulating the patients' scores with the counselors' independent assessment scoring ($r=.86$, $df=295$, $p<.001$). A score of 5 or more, indicating five or more affirmative items on the South Oaks Gambling Screen, was chosen as an indication of probable pathological gambling to reduce the number of false-positive and false-negative codings. Of 297 inpatients, 214 received scores of 0, 44 received scores ranging from 1 to 4, and 39 received scores of 5 or more, placing them in the pathological gambling category. The counselors rated 261 of the patients as nonpathological gamblers and 36 as pathological gamblers. Six (2%) of the 261 nonpathological gamblers were erroneously placed in the pathological category (false-positives) by the index; three (8%) of the 36 pathological gamblers were erroneously placed in the nonpathological category (false-negatives).

An additional validity check was made by correlating the scores from family members' assessments of the existence or extent of a gambling problem with the patients' scores on the South Oaks Gambling Screen ($r=.60$, $df=125$, $p<.001$).

Stage Three

Using the cutting point of five or more positive responses on the South Oaks Gambling Screen, we found that 209 (98%) of 213 members of Gamblers Anonymous were classified as pathological gamblers (only 2% false-negatives). Twenty (5%) of the 384 college students were identified as pathological gamblers (tentatively classified as false-positives). Only two (1.3%) of the 152 hospital employees were identified as pathological gamblers. The South Oaks Gambling Screen proved to be capable of uncovering both male and female pathological gamblers. Twenty-one (95%) of the 22 female and 188 (98%) of the 191 male Gamblers Anonymous members showed up as pathological gamblers according to the cutoff score of 5.

As a further check on the validity of the data, scores on the *DSM-III-R* items were used to cross-check the South Oaks Gambling Screen. Using a score of four or more items on the *DSM-III-R* as an indication of probable pathological gambling, we found that 206 (97%) of the 213 Gamblers Anonymous members, 15 (4%) of the 384 college students, and one (1%) of the 152 hospital employees would be classified as pathological gamblers. Only four (2%) of the 213 subjects in the Gamblers Anonymous sample, 18 (5%) of the 384 subjects in the student sample, and one (1%) of the 152 subjects in the employee sample would have errors in classification as pathological or nonpathological gamblers. These data are presented in table 1. The South Oaks Gambling Screen and *DSM-III-R* are thus highly correlated ($r=.94$, $df=747$, $p<.001$).

TABLE 1. Agreement of *DSM-III-R* Diagnoses With South Oaks Gambling Screen Diagnoses of Pathological Gambling Among Gamblers Anonymous Members, Students, and Hospital Employees

DSM-III-R Diagnoses	Gamblers Anonymous (N=213)		Students (N=384)		Employees (N=152)	
	N	%	N	%	N	%
True-positives	206	96.7	15	3.9	1	0.7
True-negatives	3	1.4	351	91.4	150	98.7
False-positives	3	1.4	5	1.3	1	0.7
False-negatives	1	0.5	13	3.4	0	0.0
Total errors	4	1.9	18	4.7	1	0.7

To check the reliability of the instrument two alternative procedures were used. The 749 surveys were submitted to an internal consistency reliability check. The analysis showed that the screen is highly reliable (Cronbach's $\alpha=.97$, $p<.001$). In addition, 74 inpatients and 38 outpatients at South Oaks filled out the questionnaire twice 30 or more days apart while in group sessions; 20 (18%) of these patients were pathological gamblers. The test-retest correlation (using a dichotomous classification of pathological or nonpathological) was .71 ($df=110$, $p<.001$). There was a tendency for scores to drop between test and retest. This was attributed to the patients' awareness that scores were being used in decisions about plans for inpatient treatment. The test-retest correlation was higher for outpatients ($r=1.0$, $df=36$, $p<.001$) than for inpatients ($r=.61$, $df=72$, $p<.001$).

DISCUSSION

The South Oaks Gambling Screen appears to be a valid, reliable screening instrument for the rapid screening of alcoholic, drug-dependent, and other patients for pathological gambling. This is important because previous studies of substance-abusing inpatients have shown clear connections between various forms of substance abuse and the presence of pathological gambling (1, 3, 14). Additional studies have found a connection between prison populations and pathological gambling (15; unpublished 1985 paper by H.R. Lesieur and R.M. Klein). There is clearly a need for an instrument that can screen patients, prisoners, and other populations for gambling problems.

The South Oaks Gambling Screen was recently adapted for use in an epidemiological survey by the New York State Office of Mental Health (unpublished 1986 paper by R.A. Volberg and H.J. Steadman). That study found that 1.4% of the adult population of New York had scores of 5 or higher on the South Oaks Gambling Screen and were therefore classified as probable pathological gamblers. This base rate for the general population is similar to that found in earlier studies (5, 7); however, the true sensitivity and specificity of the South Oaks Gambling Screen with the general population remains unknown. The extent to

which the sensitivity and specificity of this instrument may fluctuate in other populations (for example, general psychiatric and probation caseloads) is also undetermined. Differing base rates of pathological gambling in these populations may cause the false- and true-positive and negative rates to vary. Consequently, caution is advised until further testing has been conducted with these groups.

Current trends in treatment indicate that programs for pathological gamblers will continue to develop along the lines of already existing alcohol and drug treatment and at many of the same facilities. At present, alcohol- and drug-dependent inpatients and outpatients at South Oaks Hospital are screened by using the South Oaks Gambling Screen. In addition, spouses and significant others are screened to determine their assessment of patients' interest in different forms of gambling (from none to obsessive). This serves as a cross-check for patients who wish to conceal their gambling from the treatment staff. Whenever possible, this type of cross-checking should be used to augment the South Oaks Gambling Screen.

No other validated screening device is currently available that will screen patients for pathological gambling. The South Oaks Gambling Screen has the advantage of having been developed from the original *DSM-III* criteria and being highly correlated with *DSM-III-R*. In a sense, it provides a link between the two versions of the APA diagnostic criteria. The South Oaks Gambling Screen and screening guidelines are provided in appendix 1. It is our hope that this instrument will prove useful in improving identification, intervention, and treatment for the many pathological gamblers currently unrecognized by the organized health care and criminal justice systems.

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APPENDIX 1. The South Oaks Gambling Screen

1. Please indicate which of the following types of gambling you have done in your lifetime. For each type, mark one answer: "not at all," "less than once a week," or "once a week or more."

	Not at all	Less than once a week	Once a week or more	
a.	_____	_____	_____	played cards for money
b.	_____	_____	_____	bet on horses, dogs, or other animals (in off-track betting, at the track, or with a bookie)
c.	_____	_____	_____	bet on sports (parlay cards, with a bookie, or at jai alai)
d.	_____	_____	_____	played dice games (including craps, over and under, or other dice games) for money
e.	_____	_____	_____	went to casino (legal or otherwise)
f.	_____	_____	_____	played the numbers or bet on lotteries
g.	_____	_____	_____	played bingo
h.	_____	_____	_____	played the stock and/or commodities market
i.	_____	_____	_____	played slot machines, poker machines, or other gambling machines
j.	_____	_____	_____	bowled, shot pool, played golf, or played some other game of skill for money

2. What is the largest amount of money you have ever gambled with on any one day?

_____ never have gambled	_____ more than \$100 up to \$1,000
_____ \$1 or less	_____ \$1,000
_____ more than \$1 up to \$10	_____ more than \$1,000 up to \$10,000
_____ more than \$10 up to \$100	_____ more than \$10,000

3. Do (did) your parents have a gambling problem?

- _____ both my father and mother gamble (or gambled) too much
- _____ my father gambles (or gambled) too much
- _____ my mother gambles (or gambled) too much
- _____ neither one gambles (or gambled) too much

So what?

SOUTH OAKS GAMBLING SCREEN

4. When you gamble, how often do you go back another day to win back money you lost?

- ☐ never
- ☐ some of the time (less than half the time) I lost
- ☐ most of the time I lost
- ☐ every time I lost

5. Have you ever claimed to be winning money gambling but weren't really? In fact, you lost?

- ☐ never (or never gamble)
- ☐ yes, less than half the time I lost
- ☐ yes, most of the time

6. Do you feel you have ever had a problem with gambling?

- ☐ no
- ☐ yes, in the past, but not now
- ☐ yes

7. Did you ever gamble more than you intended to?

☐ yes ☐ no

8. Have people criticized your gambling?

☐ yes ☐ no

9. Have you ever felt guilty about the way you gamble or what happens when you gamble?

☐ yes ☐ no

10. Have you ever felt like you would like to stop gambling but didn't think you could?

☐ yes ☐ no

11. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in your life?

☐ yes ☐ no

12. Have you ever argued with people you live with over how you handle money?

☐ yes ☐ no

13. (If you answered yes to question 12): Have money arguments ever centered on your gambling?

☐ yes ☐ no

14. Have you ever borrowed from someone and not paid them back as a result of your gambling?

☐ yes ☐ no

15. Have you ever lost time from work (or school) due to gambling?

☐ yes ☐ no

16. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from? (check "yes" or "no" for each)

	no	yes
a. from household money	()	()
b. from your spouse	()	()
c. from other relatives or in-laws	()	()
d. from banks, loan companies, or credit unions	()	()
e. from credit cards	()	()
f. from loan sharks (Shylocks)	()	()
g. you cashed in stocks, bonds, or other securities	()	()
h. you sold personal or family property	()	()
i. you borrowed on your checking account (passed bad checks)	()	()
j. you have (had) a credit line with a bookie	()	()
k. you have (had) a credit line with a casino	()	()

Scoring

Scores on the South Oaks Gambling Screen itself are determined by adding up the number of questions that show an "at risk" response:

Questions 1, 2, and 3 are not counted.

☐ Question 4: most of the time I lost, or every time I lost

☐ Question 5: yes, less than half the time I lost, or yes, most of the time

☐ Question 6: yes, in the past, but not now, or yes

☐ Question 7: yes

☐ Question 8: yes

☐ Question 9: yes

☐ Question 10: yes

☐ Question 11: yes

Question 12 not counted

☐ Question 13: yes

☐ Question 14: yes

☐ Question 15: yes

☐ Question 16a: yes

☐ Question 16b: yes

☐ Question 16c: yes

☐ Question 16d: yes

☐ Question 16e: yes

☐ Question 16f: yes

☐ Question 16g: yes

☐ Question 16h: yes

☐ Question 16i: yes

Questions 16j and 16k not counted

Total = _____ (20 questions are counted)

5 or more = probable pathological gambler